Draft

MEMBRANE FILTRATION/REVERSE OSMOSIS (MFRO) FACILITY FOR AGRICULTURE PROJECT

Initial Study/Draft Mitigated Negative Declaration
Case Number: PHG16-0014 ENV16-0009

Prepared for
City of Escondido

Prepared by ESA
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ENVIRONMENTAL CHECKLIST

Initial Study

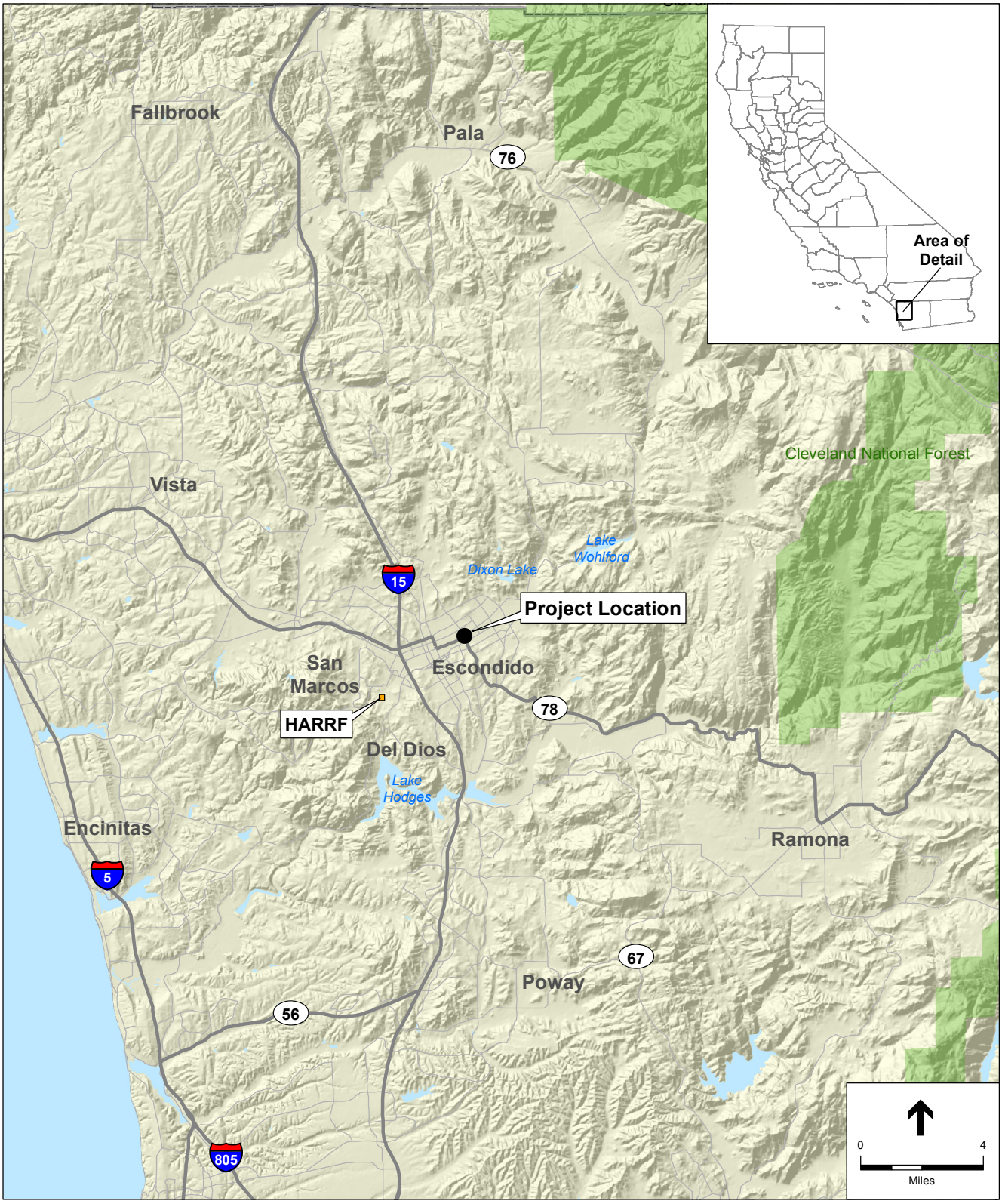
1. Project Title:	Conditional Use Permit for Membrane Filtration/Reverse Osmosis (MFRO) Facility for Agriculture (proposed project) Case Number PHG16-0014 ENV16-0009
2. Lead Agency Name and Address:	City of Escondido 201 N Broadway, 92025
3. Contact Person and Phone Number:	Jay Paul, Associate Planner 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):	General Commercial (Mixed Use Overlay)
6. Zoning Designation(s):	General Commercial C-G

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 4.50 acre project site is located at 1201 East Washington Avenue (project site), at the southeast corner of the intersection of East Washington Avenue and North Ash Avenue (State Route 78); within the City of Escondido. The project site is bound by commercial to the south, East Washington Avenue to the north and North Ash Avenue to the west. The project site's Assessor's Parcel Number (APN) is 2301410100.

8. **Existing Setting.** The project site is undeveloped, weed-abated land, generally covered by grasses and some concrete. The project site is relatively flat and is at approximately 674 feet amsl. Several non-native trees are distributed around two edges of the project site. Sparse ornamental trees are located along the northern, western, and eastern edges perimeter of the site, both within and just outside the project boundaries. The project site includes an existing fence line along the southern and western and northern boundaries.

9. **Surrounding Land Uses.** The project site is bound by a mix of commercial and residential development to the north just across East Washington Avenue. A three-story senior retirement community, the Springs of Escondido, is located immediately adjacent to the east. Across North Ash Street to the west is the Washington Square Shopping Center and other commercial uses. To the south of the project site is the Escondido Creek Channel and commercial development south of the Escondido Creek concrete-lined Flood Control Channel (**Figure 2**).



SOURCE: ESRI.

Escondido MFRO Facility Project . 140480.01

Figure 1

Regional Location Map

SOURCE: ESRI.

Escondido MFRO Facility Project . 140480.01

Figure 2

Study Area Map

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. The 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 several years expanded the recycled water conveyance system towards the eastern areas of the City (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 to be less dependent 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 (City File No. ENV 13-0007), 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 purification (AWP) 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 construct and operate the Membrane Filtration/Reverse Osmosis (MFRO) Facility to provide water for agricultural use (proposed project). The MFRO Facility would provide advanced treatment for Title 22 quality reuse water produced at the HARRF. The facility would utilize membrane filtration (i.e., 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.

The project would also assist in off-loading the City's ocean outfall by reducing the amount of water discharged to the Ocean from the HAARF. The existing land outfall is nearing flow capacity. The MFRO Facility would treat and distribute the recycled water to agricultural users and reusable water to homes. Thereby, redirecting water via reuse and reducing the flow to the existing outfall.

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 federal Clean Air Act (FCAA) 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 (NHPA). 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 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.

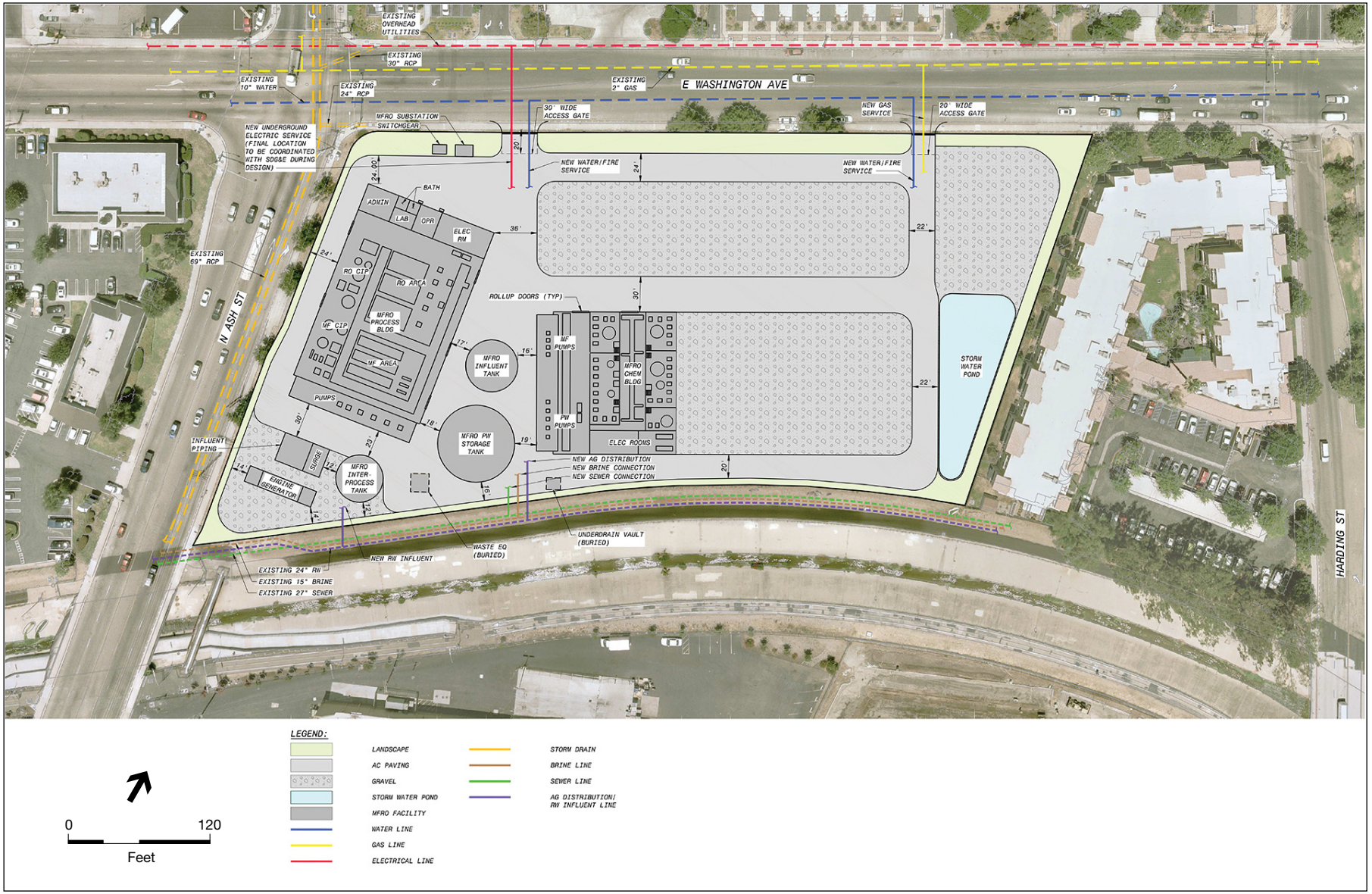
National Historic Preservation Act

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 the HARRF. The facility would utilize membrane filtration (i.e., 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 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 commercial/industrial-like buildings, the MFRO Process Building, to house the MFRO equipment, pumps, electrical rooms, control rooms, and meeting rooms that includes a restroom, kitchenette, and janitor closet (**Figure 3**). The Chemical Building would house the chemical storage and transfer pumps. Because the project site is located within a commercially zoned area, a Conditional Use Permit would be required 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.

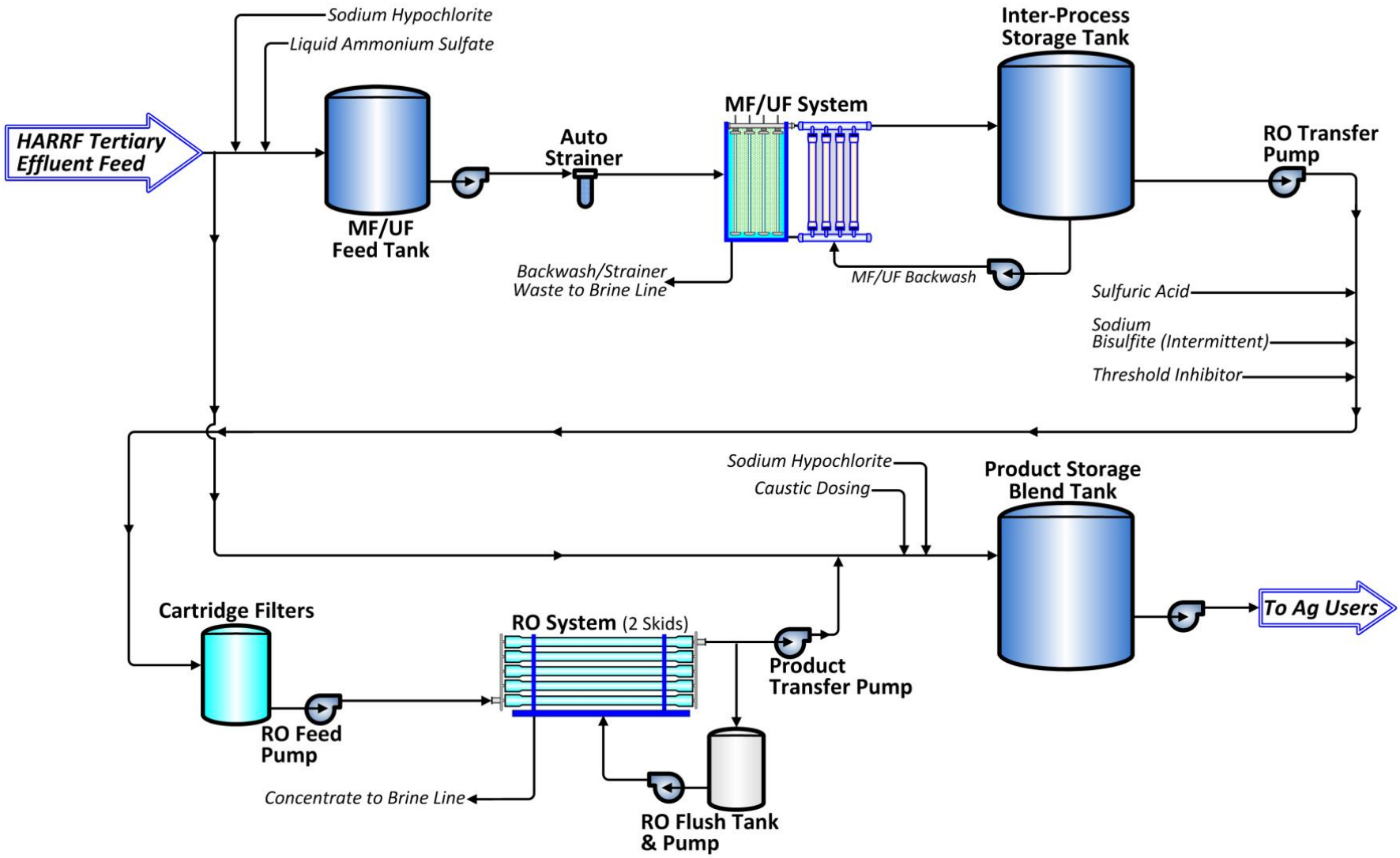
The MFRO Facility treatment equipment is proposed to operate with a production capacity of 0.5 mgd [350 gallons per minute (gpm)] and an ultimate effluent production capacity of 2.0 mgd (1,390 gpm). The MFRO Facility would be designed to accommodate installation of additional equipment in the future 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.



SOURCE: Black & Veatch, 2016

Escondido MFRO Facility Project . 140480.01

Figure 3
MFRO Facility Site Plan



SOURCE: Black & Veatch, 2016

Escondido MFRO Facility Project . 140480.01

Figure 4

MFRO Facility Process Flow Diagram

Influent Pipeline

A newly constructed 18,720 feet long 24-inch diameter pipeline would convey HARRF Title 22 recycled water to the MFRO Facility. The project would connect to the existing influent pipeline located adjacent to the Escondido Creek concrete-lined Flood Control Channel along the southern side of the project site (Recycled Water Easterly Main Extension Project). Exposed influent piping would be located adjacent to the surge tank. The piping would include the influent supply pipeline for the MF Influent Tank, the storm flow bypass pipeline to the Product Water Tank, and the Title 22 recycled water bypass and RO permeate pipelines to the Product Water Tank. The Title 22 recycled water bypass and RO permeate pipelines would blend to provide the desited water quality for the agriculture users. Each pipe train would include an isolation valve, motor operated valve, flow meter, combination air valves, and a pressure reducing valve.

Facility Buildings

The process building would be approximately 21,660 square feet with dimensions of approximately 190 feet long by 114 feet wide. The building would be divided into an equipment room to house the MFRO equipment, electrical room, control room, and administration meeting room. Two restrooms would also be provided. All equipment would be selected based on mechanical specifications to meet noise standards. All pumps would be located within buildings with sound attenuating features (e.g., acoustic louvers, acoustic hoods) to address potential noise concerns. Piping within the building, where the mechanical piping leaves a process to be conveyed to another process, would be located in a grating covered concrete pipe trench.

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 following chemicals, listed in **Table 1**, would be used for the proposed project:

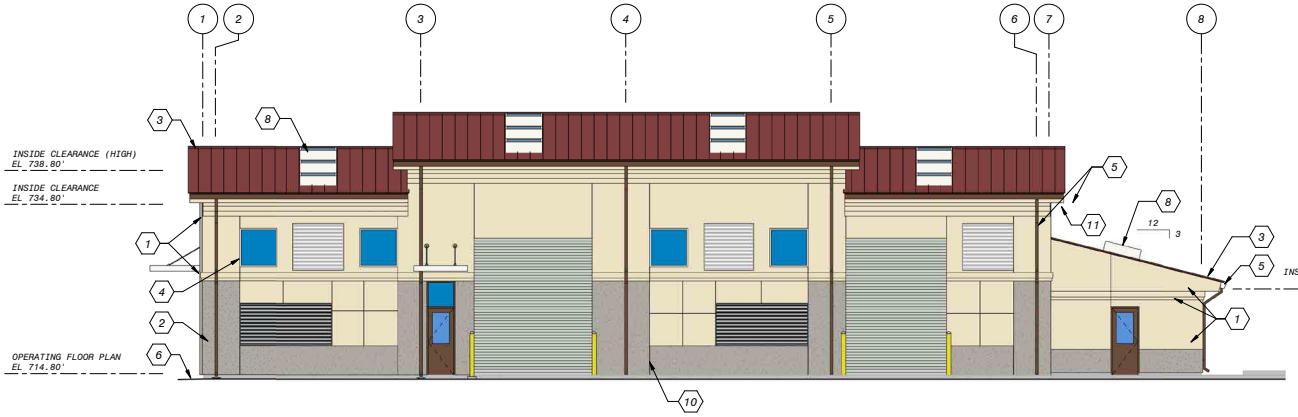
The chemical areas in the Chemical Storage Building would be separated into acids and bases such that incompatible chemicals are kept separate. There would be two separate areas for the basic chemicals and two containment areas for the acidic chemicals. These areas would be oriented such that a noncombustible partition could be installed to keep them separate. The sulfuric acid would be stored in the Chemical Storage Building in a dedicated room. Table-1 lists the chemical hazard rating and the maximum allowable storage quantity per the Fire Code.

Buildings and structures would be approximately 31 feet to top of roof ridgeline. Tanks would be located on the southwestern portion of the site with maximum heights of 30 feet. Buildings and other onsite facilities would be setback from the property line per General Commercial Development Standard setback criteria. The proposed buildings would have stucco, aluminum window framing, and Spanish roof tile. Elevations of the proposed buildings are provided in **Figures 5a** through **Figure 5d**.

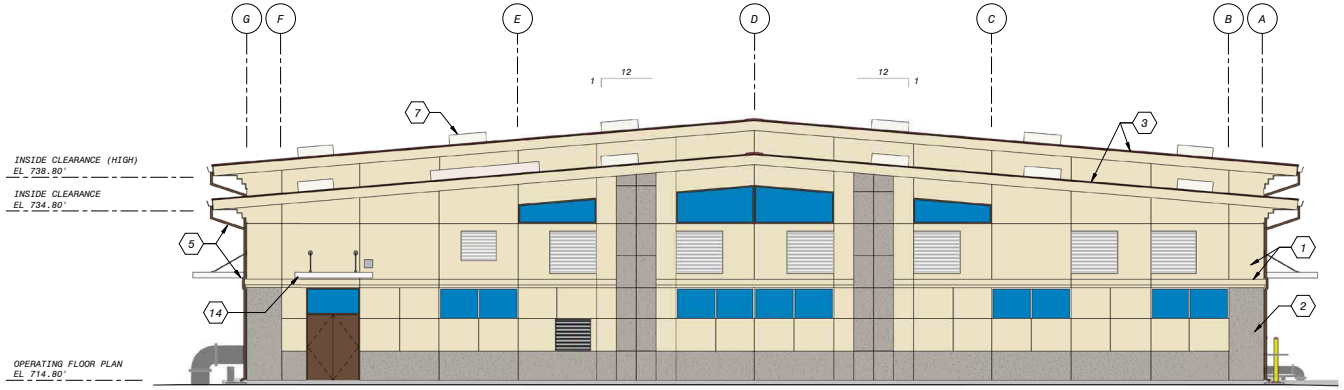
TABLE 1
CHEMICAL STORAGE

Chemical	Hazard Rating	Number / Storage Type	Volume (gallons)	Maximum Allowable Quantity	Maximum Allowable Quantity Exceeded?	Days of Storage (avg/max)	Number of Pumps/Pump Type
Sodium Hypochlorite (Disinfectant)	Health Hazard – Corrosive	1 Vertical, Cylindrical, FRP Tank	5,700	500 gallons	Yes	45/27	3(2 duty, 1 standby) / 0.2 to 5.6 gph, peristaltic
Liquid Ammonium Sulfate (Disinfectant)	None	1 Vertical, Cylindrical, FRP Tank	850	None	No	31/14	2(1 duty, 1 standby) / 0.03 to 1.48 gph, peristaltic
Sulfuric Acid (pH Control)[1]	Physical – Class 2 Water Reactive	1 Vertical, Cylindrical, Lined Steel Tank	3,200	50 pounds (3.2 gallons of 93% sulfuric acid)	Yes[2]	56/27	2(1 duty, 1 standby) / 0.3 to 5 gph, motorized diaphragm
Sodium Bisulfite (pH Control)	Health Hazard – Corrosive	1 Vertical, Cylindrical, FRP Tank	1,000	500 gallons	No	30/30	2 (1 duty, 1 standby) / 0.3 to 1.4 gph, peristaltic
Antiscalant	None	1 Vertical, Cylindrical, FRP Tank	400	None	No	58/35	2(1 duty, 1 standby) / 0.02 to 0.5 gph, motorized diaphragm
Sodium Hydroxide (Membrane cleaning and neutralization and pH and alkalinity control)	Health Hazard – Corrosive	1 Vertical, Cylindrical, Carbon Steel Tank	5,500	500 gallons	Yes	35/26	2(1 duty, 1 standby) / 0.4 to 8.8 gph, motorized diaphragm
Calcium Chloride (Increase hardness)	None	1 Vertical, Flat bottom FRP Tank	8,000	None	No	35/35	2 (1 duty, 1 standby) / 9.5 gph, peristaltic
Citric Acid (Membrane cleaning and neutralization)	None	1 tote	300	None	No	-	2 (1 duty, 1 standby)
Proprietary RO Base (Membrane cleaning)	Unknown	1 tote	300	Unknown	Unknown	-	2 (1 duty, 1 standby)

NOTES:
1. Storage of sulfuric acid in amounts greater than 25 tons (3,247 gallons of 93% sulfuric acid) requires a detached building.
2. Sulfuric acid storage amount exceeds the maximum allowable quantity, thus it is subject to the requirements in Chapter 50 of the IFC. However, the storage amount does not exceed 25 tons, thus a detached building is not required.
SOURCE: Black and Veatch, 2016.



NORTH ELEVATION



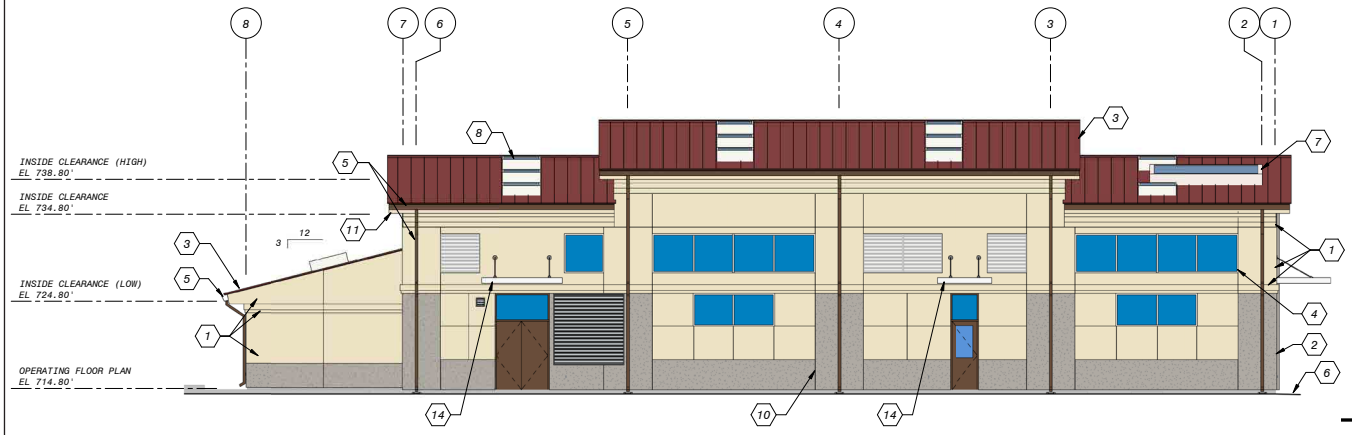
EAST ELEVATION

SHEET KEYNOTES

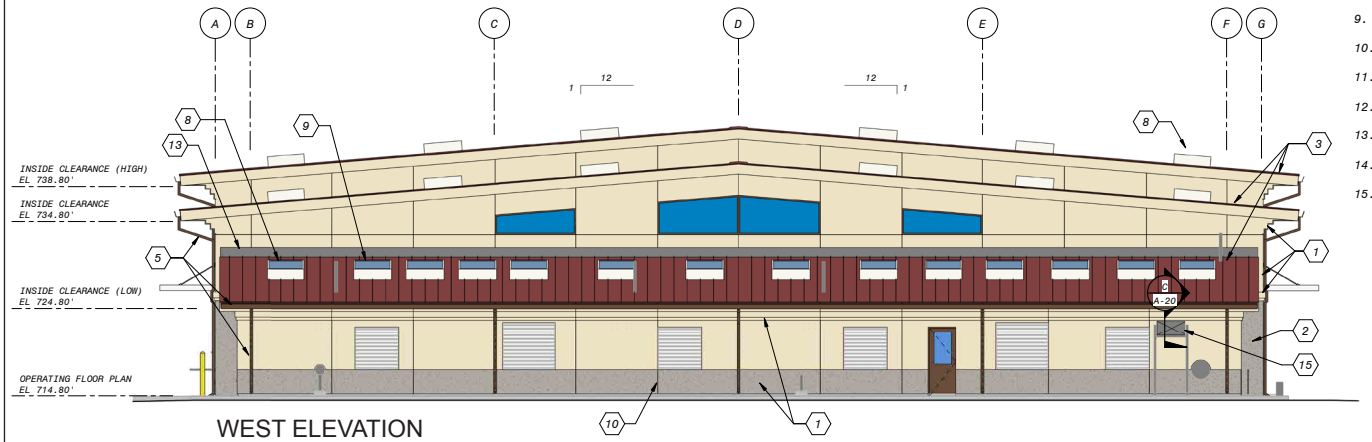
1. STUCCO, FIELD COLOR.
2. STUCCO, BASE COLOR.
3. ROOF TILE: SPANISH ROOF TILE.
4. ALUMINUM WINDOW FRAME, TYPICAL.
5. PREFINISHED METAL GUTTER & DOWNSPOUT.
6. FINISHED GRADE.
7. REMOVABLE SKYLIGHT, SEE ROOF PLAN.
8. SKYLIGHT, SEE ROOF PLAN.
9. HATCH/SKYLIGHT, SEE ROOF PLAN.
10. CONTROL JOINT (CJ), TYPICAL.
11. STUCCO RAKE/FASCIA TRIM, COLOR TO MATCH STUCCO FIELD.
12. PIPING, SEE MECHANICAL PROCESS DRAWINGS.
13. WALL TO ROOF FLASHING.
14. HANGER ROD & ALUMINUM CANOPY.

SOURCE: Black & Veatch, 2016

Figure 5a
Chemical Storage Building North and East Elevations



SOUTH ELEVATION



WEST ELEVATION

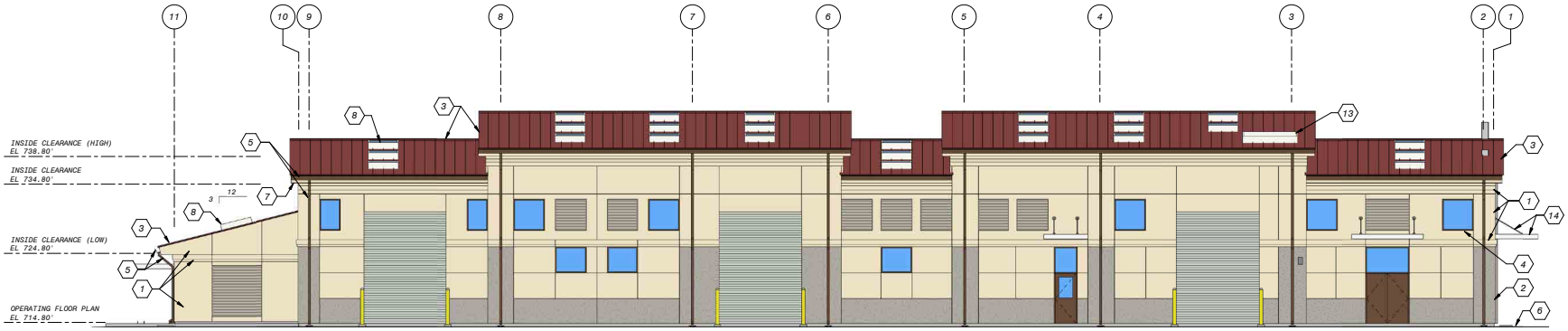
SHEET KEYNOTES

1. STUCCO, FIELD COLOR.
2. STUCCO, BASE COLOR.
3. STANDING SEAM METAL ROOF SYSTEM.
4. ALUMINUM WINDOW FRAME, TYPICAL.
5. PREFINISHED METAL GUTTER & DOWNSPOUT.
6. FINISHED GRADE.
7. REMOVABLE SKYLIGHT, SEE ROOF PLAN.
8. SKYLIGHT, SEE ROOF PLAN.
9. HATCH/SKYLIGHT, SEE ROOF PLAN.
10. CONTROL JOINT (CJ), TYPICAL.
11. STUCCO RAKE/FASCIA TRIM, COLOR TO MATCH STUCCO FIELD.
12. PIPING, SEE MECHANICAL PROCESS DRAWINGS.
13. WALL TO ROOF FLASHING.
14. HANGER ROD & ALUMINUM CANOPY.
15. DUCT WALL PENETRATION, SEE HVAC DRAWINGS.

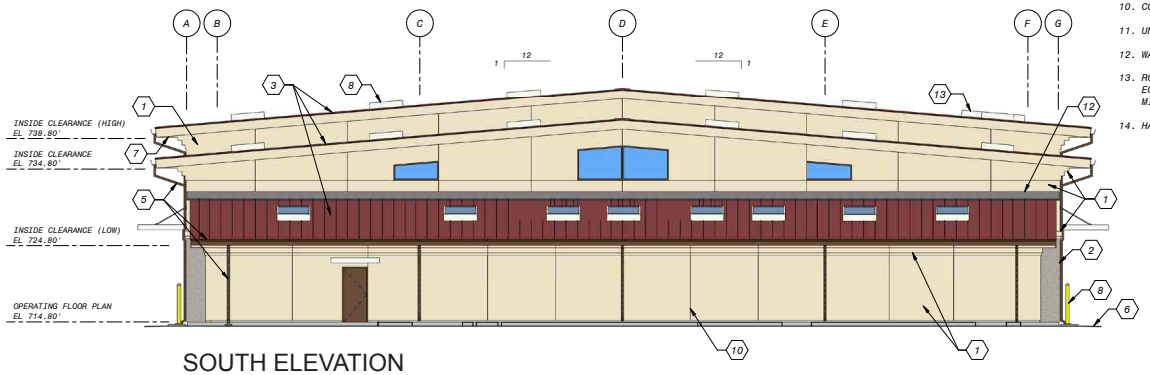
SOURCE: Black & Veatch, 2016

Figure 5b

Chemical Storage Building South and West Elevations



EAST ELEVATION



SOUTH ELEVATION

SHEET KEYNOTES

1. STUCCO, FIELD COLOR.
2. STUCCO, BASE COLOR.
3. STANDING SEAM METAL ROOF SYSTEM.
4. ALUMINUM WINDOW FRAME, TYPICAL.
5. PREFINISHED METAL GUTTER & DOWNSPOUT.
6. FINISHED GRADE, SEE CIVIL DRAWINGS.
7. STUCCO RAKE TRIM/FASCIA: COLOR TO MATCH STUCCO FIELD.
8. SKYLIGHT, SEE ROOF PLAN.
9. GUARDPOST, TYPICAL, SEE CIVIL DRAWINGS.
10. CONTROL JOINT (CJ), TYPICAL.
11. UNIT HEATER FLUE, TYPICAL, SEE HVAC DRAWINGS.
12. WALL TO ROOF FLASHING.
13. ROOF HOOD CURB AS REQUIRED. DIMENSION DETERMINED BY EQUIPMENT PROVIDED. LOW SIDE CURB HEIGHT 1'-4" MINIMUM ABOVE ROOF SYSTEM.
14. HANGER ROD & ALUMINUM CANOPY.

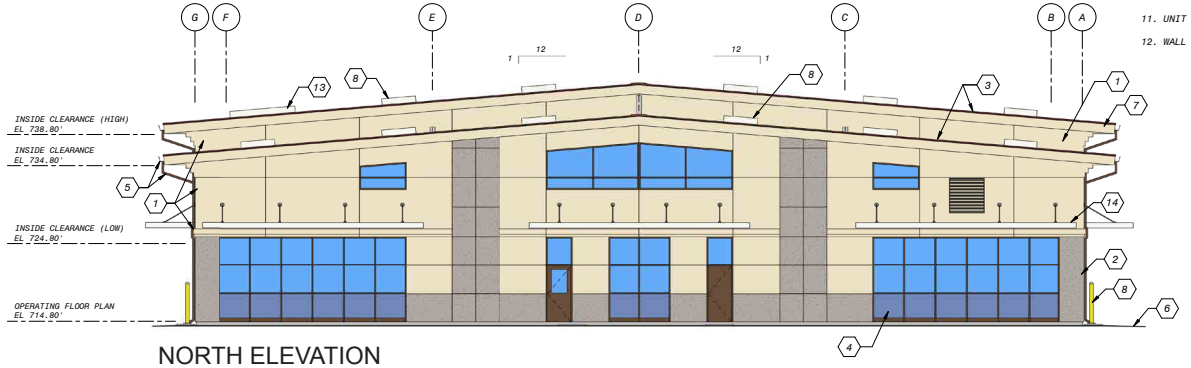
SOURCE: Black & Veatch, 2016

Escondido MFRO Facility Project . 140480.01

Figure 5c

MFRO Process Building East and South Elevations

WEST ELEVATION



NORTH ELEVATION

SHEET KEYNOTES

1. STUCCO, FIELD COLOR.
2. STUCCO, BASE COLOR.
3. TILE ROOF; SEE DETAIL A ON DRAWING A-18.
4. ALUMINUM WINDOW FRAME, TYPICAL.
5. PREFINISHED METAL GUTTER & DOWNSPOUT.
6. FINISHED GRADE, SEE CIVIL DRAWINGS.
7. STUCCO RAKE TRIM/FASCIA: COLOR TO MATCH STUCCO FIELD.
8. SKYLIGHT, SEE ROOF PLAN.
9. GUARDPOST, TYPICAL, SEE CIVIL DRAWINGS.
10. CONTROL JOINT (CJ), TYPICAL.
11. UNIT HEATER FLUE, TYPICAL, SEE HVAC DRAWINGS.
12. WALL TO ROOF FLASHING.

SOURCE: Black & Veatch, 2016

Figure 5d

MFRO Process Building West and North Elevations

MF/UF Influent Tank

A 300,000 gallon feed tank (50-feet diameter, 25-feet tall, with the potential to be partially buried 10 feet below finished grade) would be provided to ensure uninterrupted supply to the downstream treatment process. The MFUF 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.

Surge Tank

Surge mitigation improvements would include a surge tank with supporting compressed air system. The surge tank would control surge pressures in the 24-inch high service pump discharge transmission pipeline. The steel pressure tank would be approximately 2,150 cubic feet. It would be located outdoors adjacent to the Interprocess Storage Tank. The air compressors would be located in the Chemical Storage Building and would use food-grade lubrication.

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 160,000 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 40-feet in diameter and 20-feet tall, with the potential to be partially buried 10 feet below finished grade.

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 inside the Process Building:

- 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 pre-stressed concrete tank would be installed onsite for blend and storage purposes. The overall tank dimensions are 72-feet diameter and 30-feet tall, with the potential to be partially buried 10 feet below finished grade. The product water tank would provide a total useable storage volume of approximately 820,000 gallons.

Onsite Pipeline Corridor

Pipelines entering the project site from the channel or south side include the HARRF reuse influent pipeline, brine/reject waste return pipeline, agriculture supply pipeline, storm drain, and fiber optic conduit. Potable water, electric and gas would enter from East Washington Avenue.

All process piping between buildings would be buried within a trench. Chemical feed piping between the buildings would be located in a grating covered concrete pipe trench.

Brine Waste Pipeline

MFRO treatment process waste streams include MF/UF backwash, RO concentrate, and RO clean in place (CIP) that would be collected and conveyed back to the HARRF outfall through an existing 16-inch brine pipeline.

Storm Drain

An existing 69 inch storm drain is located in North Ash Street with a 24 inch branch to a curb inlet at the corner of North Ash Street and East Washington Avenue. The Escondido Creek concrete-lined Flood Control Channel drainage channel is also located south of the project site. The project would include an onsite storm water pond 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. The project would include one connection to the Escondido Creek Flood Control Channel drainage channel to convey water from the stormwater pond.

Tank Overflow/Drain Pipelines

A second connection would be for the tank overflow/drain pipelines. Each tank would have an overflow and drain pipeline, and the pipelines would combine together into a single pipeline for connection to the Escondido Creek Flood Control Channel.

Sanitary Sewer

Waste streams including strainer backwash, MF/UF CIP neutralized waste and RO flush waste, as well as sanitary sewer waste that would be discharged to a proposed onsite waste equalization wetwell prior to discharge to the sanitary sewer and conveyed to the HARRF for treatment. The proposed sewer system would convey wastewater flows to the existing 27-inch pipe located on the north side of the channel. 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 City's Hogback Reservoir located on a hilltop east of the City limits in unincorporated San Diego County south of Mountain View Drive 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. The

engine generator would provide standby power to necessary electrical and controls equipment, security systems, influent control valves, Product Water Pump Station, RO flush systems, and electrical rooms HVAC systems when the electric utility is not available. The engine-generator package would be 60 feet long, 13 feet wide, and 18 feet high. The engine-generator enclosure is designed to meet the City's Municipal Code sound thresholds at the property line. The exhaust particulate filter/silencer would be sized to meet San Diego County Air Pollutions Control District (SDCAPCD). The exhaust particulate filter/silencer would be regenerative and provide the required sound requirements at property lines for the receiving land use. The engine-generator would only be operated during a loss of power. However, it would be exercised on a monthly basis during business hours.

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 at the property line for the receiving land use. As described above, the engine-generator would only be used in an emergency in the event electricity is not provided to the site, and once a month for exercise recommended by the manufacturer. The engine-generator enclosure is designed to meet the City's Municipal Code sound thresholds at the property line.

Site Access

Facility site access would be provided from two driveways along East Washington Avenue as shown on the site plan. Two secured entrance gates would be provided. The gates would be setback approximately 20-feet for turn-off parking.

Security

Wall and Fencing

The proposed project would include security walls and fencing. The existing chain link fence along the property line would be knocked down and replaced with 6-foot high steel fencing with vertical bars and top pickets. The ornamental fencing would be placed along the southern boundary and along North Ash Street and East Washington Avenue. The existing wooden fence between the project site and residential property to the east would be demolished and replaced with a new 6-foot concrete masonry unit (CMU) block wall.

Security System

A security system would be provided including secured plan entrances and strategically placed fixed-view security cameras. The plant entrances would be equipped with a security camera and an electric gate requiring an access code and/or personnel badge scanner for entry. Cameras would also be installed near the rooflines of the MFRO Process and Chemical Storage Buildings to monitor the entrance to the opposing structures. Additional fixed-view security cameras would be placed on the south side of the MFRO Process Building where permanent outdoor equipment may be monitored.

Landscaping

The proposed project may remove existing trees onsite and along North Ash Street and East Washington Avenue. New perimeter ornamental landscaping would buffer and minimize views the proposed facility components and consist of low maintenance, low demand and fast-growing plantings including trees. 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 the landscape design.

Lighting

The proposed project would include dark bronze pole-mounted and building-mounted light-emitting diode (LED) lights in the facility. All pole-mounted lights would be 25 feet above grade. The outdoor lighting design would restrict any direct distribution of light beyond the site boundaries. Lighting would be in conformance with Title 24, of the California Code of Regulations and the City's Lighting Ordinance (Chapter 33, Article 35, Sec. 33-713).

Project Construction

Project construction is anticipated to be approximately 11 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-four maximum daily truck trips are anticipated for exporting soil. Soil hauling would occur over approximately one month. 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 disposed of at an appropriate permitted disposal site depending on the type of material. 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 site preparation and grading, 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

Multiple tanks and vaults would be constructed on site. Tank excavations would be limited to a depth of 12 feet below finished grade. The maximum width for tank excavation would be approximately 92 feet in diameter. Groundwater is approximately 15 feet below finished grade. If groundwater is encountered during construction, dewatering would be required. Groundwater would be disposed of to the existing City sewer for treatment.

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.

Traffic Control Plan

A Traffic Control Plan (TCP) would be developed with both the CALTRANS Manual of Traffic Control Devices for Construction and Maintenance Work Zones and the Standard Specifications for Public Works Construction, latest edition. The TCP would describe work hours, haul routes, work area delineation, traffic control and flagging. The plan would aim to limit lane closures during peak traffic hours to the extent possible. To facilitate pedestrian safety, roads would be restored to normal operation by covering trenches with steel plates outside of allowed working hours or when work is not in progress. Prior to construction, the City would coordinate with facility owners and/or administrators of sensitive land uses such as police and fire stations, hospitals, and schools. The City would provide advance notification to facility owners and/or operators of the timing, location, and duration of construction activities and lane closures. All roads shall remain passable to emergency service vehicles at all times. Road work construction notification would be provided with "Road Work Ahead" warning signs and speed control to achieve required speed reductions for safe traffic flow through the work zone. The City would coordinate with the North County Transit District so the transit provider can temporarily relocate or reconfigure bus routes or bus stops in the work zone as it deems necessary. A contact person will be designated for responding to construction-related issues. The name and phone number of the liaison will be conspicuously posted at the construction site, and on all advanced notifications. This person will take steps to resolve complaints.

Project Operation and Maintenance Details

The proposed project would require one full-time employee onsite. Additional employees would be required for monthly routine facility maintenance, delivery, and removal of chemicals. In addition, nine chemical deliveries would be expected monthly for normal operation of the facility.

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)
  - Building and Grading Permit
  - Roadway Encroachment Permit
  - Construction Staging and Traffic Management Plan
  - Construction Stormwater Pollution Prevention Plan
- San Diego County Air Pollution Control District: Authority to Construct and Authority to Operate
- California Department of Transportation Encroachment Permit

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	☐ Tribal Cultural Resources	☒ 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 _____ Date _____

Printed Name _____ 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?	☐	☐	☒	☐

Hillsides and ridgelines provide a visual resource and aesthetic value to the City of Escondido that contributes to the community's sense of identity. The City's General Plan Resource Conservation Element identifies the steep slopes, primary and secondary ridgelines, and prominent natural landforms within the planning area (City of Escondido, 2012). Much of the City's planning area that contains steeper terrain at higher elevations has been designated for very low density residential and/or agricultural purposes to preserve viewsheds.

Environmental Evaluation

Would the project:

a) Have a substantial adverse effect on a scenic vista?

No Impact. The project site is undeveloped within a highly developed and urbanized area. The project site is surrounded by commercial and residential uses. A 7-Eleven convenience store, carwash, and residential neighborhood are located to the north across East Washington Avenue; a three-story senior living community is adjacent to the east of the project site, the concrete-lined Escondido Creek Flood Control Channel is located immediately to the south, and a commercial center with a Walmart is located south of the Escondido Creek Flood Control Channel (Figure 2). A commercial shopping center is located west of North Ash Street. Based on a review of the City of Escondido General Plan, the project site is not identified as a scenic vista (Escondido, 2012). The nearest scenic resource is approximately 2.0 miles northeast of the project site, which is Dixon Lake and is surrounded by open space along with distant hillsides to the north and northeast. The lake is separated from the project site by elevation, open space, single family homes and various roadways. 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) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. There are no officially designated 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 36.5 miles northeast of the project site. The nearest eligible state scenic highway-not officially designated is SR-76 approximately 14.5 miles north of the project site (DOT, 2016). 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) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact. The proposed project site is currently undeveloped, and the existing visual character of the surrounding area is characterized by residential neighborhoods and commercial development (**Figure 6a** and **Figure 6b**). The proposed project would consist of a chemical storage building and MFRO Facility building, each with height up to approximately 31 feet to the top of roof ridgeline. Tanks would be located within the southwestern area of the site with maximum heights of 30 feet. The onsite facilities would be setback from the property line per the City of Escondido's General Commercial Development Standards setback criteria. Setbacks would include perimeter roads and perimeter landscaped areas (Black & Veatch, 2016).

The proposed buildings would be treated with architectural details to be consistent with aesthetic qualities of existing structures in the surrounding area to minimize contrasting features. Development of the proposed project would include security walls and fencing. The existing chain link fence along the property line would be removed and replaced with 6-foot high steel fencing with vertical bars and top pickets. The ornamental fencing would be placed along the southern boundary of the project site and along North Ash Street and East Washington Avenue. The existing wooden fence between the project site and the senior living community to the east would be demolished and replaced with a new 6-foot high CMU block wall (Black & Veatch, 2016). 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. Architectural perspectives are shown on **Figures 7a** and **7b**.

The proposed project would include implementation of landscape features, including mostly drought-tolerant species. Bio-retention areas and other best management practices would also be incorporated into landscape design along the site perimeter. 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.

Photo 1 - View facing north.

Photo 2 - View facing east.

Photo 3 - View facing south.

Photo 3 - View facing west.

SOURCE: ESA, 2016

Escondido MFRO Facility Project . 140480.01

Figure 6a

Photos of Project Vicinity

Photo 5 - View facing east along southern border of the project site.

Photo 6 - View facing the southeast portion of the project site.

SOURCE: ESA, 2016

Escondido MFRO Facility Project . 140480.01

Figure 6b

Photos of Project Vicinity

Escondido MFRO Facility Project . 140480.01

SOURCE: Black & Veatch, 2016

Figure 7a

Architectural Perspective from East Washington Avenue and North Ash Street

SOURCE: Black & Veatch, 2016

Escondido MFRO Facility Project . 140480.01

Figure 7b
Aerial Perspective

d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?

Less than Significant Impact. There are two primary sources of light: light emanating from building interiors that pass through windows and light from exterior sources (e.g., street lighting, parking lot lighting, building illumination, security lighting, and landscape lighting). Depending upon the location of the light sources and its proximity to adjacent light-sensitive uses, light introduction can be a nuisance, affecting adjacent areas and diminishing the view of the clear night sky. Light spillage is typically defined as unwanted illumination from light fixtures on adjacent properties.

The project site is located within an area developed with a mix of commercial and residential uses. Existing lighting conditions in the project area include light emanating from building interiors, security lights, and the surrounding commercial and residential land uses, as well as nearby street lighting.

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. A 6-foot high block wall would be placed along the eastern boundary of the project site. Site lighting would consist of pole-mounted and building-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. All pole-mounted lights would be 25 feet above grade. 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, standing seam 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, 2016. California Scenic Highway Mapping System. Available at: www.dot.ca.gov/hq/LandArch/scenic_highways, accessed August 11, 2016.

Black & Veatch, *MFRO and AWT Facilities Conceptual Design Report*, 2016.

City of Escondido, General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, 2012. Available at: www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Aesthetics.pdf, accessed August 11, 2016.

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?	☐	☐	☐	☒

In 1982, the State of California created the Farmland Mapping and Monitoring Program (FMMP) within the California Department of Conservation (DOC) to monitor the conversion of the state's farmland to and from agricultural use. The California Land Conservation Act (LCA) of 1965, also known as the Williamson Act, is designed to preserve agricultural and open space lands by discouraging their premature and unnecessary conversion to urban areas.

Environmental Evaluation

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?

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 General Commercial and is zoned

as General Commercial (C-G) (City of Escondido, 2012a). The project vicinity is also void of agricultural uses. The California Department of Conservation Important Farmland Map identified the project site as urban and built up land (CDC, 2016). 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) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The project site has a land use designation of General Commercial and is zoned as General Commercial (C-G) (City of Escondido, 2012a). 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, 2016; City of Escondido, 2012b). Therefore, no impacts would occur.

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))?

No Impact. The project site has a land use designation of General Commercial is zoned as General Commercial (C-G) 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 forest land or timberland.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The project site has a land use designation of General Commercial and is zoned as General Commercial (C-G) and is not zoned as forest land (City of Escondido, 2012a). 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, 2012b). Therefore, no impacts would occur to forestland.

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?

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 on land zoned for General Commercial. 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, 2012a. General Plan, Land Use and Community Form Element. Available at: www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/GeneralPlanChapterII.pdf, accessed August 12, 2016.

City of Escondido, 2012b. General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report. Available at: www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Agriculture.pdf, accessed August 12, 2016.

California Department of Conservation (CDC), 2016. Farmland Mapping and Monitoring Program. Available at: www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx, accessed August 12, 2016.

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?	☐	☐	☒	☐

The project site is located within the San Diego Air Basin (SDAB), which covers 4,260 square miles and the entire County of San Diego. The State Implementation Plan (SIP) sets forth the State's strategies for attaining federal and state Ambient Air Quality Standards (AAQS). The SDAB is currently designated as an attainment area for carbon monoxide (CO), nitrogen oxides (NOx), lead (Pb), and sulfur oxides (SOx), but is a non-attainment area for ozone (O_3), and a federal and state non-attainment area for particulate matter (PM_{10} and $PM_{2.5}$).

The San Diego Air Pollution Control District (SDAPCD) has jurisdiction over San Diego County (i.e., the SDAB) for the administration and enforcement of air quality regulations. In order to meet the AAQS, the SDAPCD has adopted a series of Regional Air Quality Strategy (RAQS) Plans. The 2009 RAQS, the most recent plan, employs the most up-to-date science, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes and new air quality modeling tools. Policies and measures to achieve AAQS for healthful air quality in the SDAB are outlined in the 2009 RAQS, which also incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by the San Diego Association of Governments (SANDAG). The SIP and the SDAPCD's RAQS were developed in conjunction with each other to reduce regional emissions.

The City of Escondido has established daily air quality 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. The established screening level thresholds can be used to demonstrate that a project's emissions would not result in a significant impact as defined by CEQA. Should emissions be found to exceed these thresholds, additional emissions modeling is required to demonstrate that the project's air quality impacts are below the AAQS. The air quality significance thresholds, mass daily thresholds, for criteria pollutants are presented in Table 3-1.

TABLE 3-1
AIR QUALITY SIGNIFICANCE THRESHOLDS (MASS DAILY THRESHOLDS)

Pollutant	Construction (pounds/day)	Operation (pounds/day))
Volatile Organic Compounds (VOC)	75	55
Nitrogen Oxides (NOx)	250	250
Sulfur Dioxide (SO2)	250	250
Carbon Monoxide (CO)	550	550
Particulate Matter <10 microns (PM10)	100	100
Particulate Matter <2.5 microns (PM2.5)	55	55

SOURCE: Article 47 of the City of Escondido Municipal Code , SDAPCD Rule 1501, SCAQMD 2015

Environmental Evaluation

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The SDAPCD and the SANDAG develop and implement the RAQS for attainment and maintenance of the AAQS in the SDAB. 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. CARB's mobile source emission projections and SANDAG's growth projections are based on population and vehicle trends and land use plans developed by incorporated cities, such as the City, and the County of San Diego. Development projects within the City that are shown to be consistent with growth projections in the City's General Plan would be consistent with the growth accounted for in the RAQS and SIP. Therefore, proposed developments that are consistent with the General Plan would not obstruct or conflict with the RAQS or SIP and would not have a significant impact on air quality.

The proposed project site has a Commercial land use designation and is zoned as Commercial General C-G, which identifies the area for the community's general commercial needs; retail, office, and service establishments. The adjoining areas are also designated as Commercial, Single Family Residential, and Medium Multiple Residential. Although the proposed project would require a CUP, it would not conflict with land uses in the vicinity due to facility design and operational characteristics and would be beneficial to the City as a whole. In addition, the proposed MFRO facility would not introduce additional population at the project site, and would

only require one new permanent employee 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. In addition, nine chemical deliveries would be expected monthly for normal operation of the facility. The proposed project would be consistent with growth projections of the General Plan because it would not directly, or indirectly, induce population growth nor exceed the General Plan growth assumptions. Therefore, the proposed project would not conflict with or obstruct implementation of applicable air quality plans (RAQS and SIP) and impacts would be less than significant. No mitigation is required.

As stated above, the SDAPCD is also responsible for the development of the SDAB's portion of the SIP, which is required under the federal Clean Air Act for areas that are in nonattainment for criteria pollutants. The proposed project is a Federal action and therefore, under the Clean Air Act, would be subject to a SIP conformity determination as the project is in a moderate nonattainment area for the 8-hour ozone National AAQS. Table 3-2 shows the attainment status for each criteria air pollutant and the *de minimis* levels for ozone pre-cursors that the project's emissions are compared to for the SIP conformity determination. If project emissions are below the *de minimis* levels then the project is determined to be in conformity with the SIP. As shown in Table 3-2, ozone precursors are below the *de minimis* thresholds for both construction and operational activities. Therefore, the project is consistent with the SIP and would meet the conformity requirements.

TABLE 3-2
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	Moderate	——— See VOC & NO_X ———		
Carbon Monoxide (CO)	Attainment	N/A	N/A	9	1.28
Oxides of Nitrogen (NO_X)	N/A	N/A	100	12	0.35
Volatile Organic Compounds (VOC)	N/A	N/A	50	1	0.74
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	0.06
Particulate matter less than 10 microns (PM_{10})	Unclassifiable*	N/A	N/A	2	0.21
Sulfur Dioxide (SO_2)	Attainment	N/A	N/A	0	0

N/A = Non-applicable
* At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

SOURCE: ESA CalEEMod Modeling 2016; EPA 2015

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact. The California Emissions Estimator Model (CalEEMod), which is an emissions inventory model developed by CARB in consultation with the air quality management districts and air pollution control districts in the state, was used to forecast the daily regional construction and operational emissions for the proposed project. Construction emissions from the project are anticipated to result from the onsite use of equipment and the disturbance of soil resulting in fugitive emissions. For purposes of this analysis, the estimated acreage of the proposed project is 5 acres. It was assumed, that construction would occur over 11 months, starting in June 2017 and concluding in May 2018.

For analysis purposes, it was assumed that the City's Traffic Impact Analysis (TIA) trigger point is based on passenger car equivalents (PCE) additional daily traffic (ADT). PCE, which for traffic congestion purposes, counts passenger vehicles as a single vehicle and heavy-duty trucks as three passenger car equivalents, was assumed for the proposed project. The TIA trigger point is 200 PCE trips per day. If the project generates under 200 PCE trips, impacts would be less than significant.

During project construction, the proposed project would generate trips associated with the construction crew as well as from haul trips and delivery activities. According to the project assumptions, the maximum number of workers at any one time for the project is site preparation 4; grading 4; drainage/utilities/subgrade 6; building construction 30; architectural coating 5; and paving 7. Haul trips would include soil export and other deliveries of materials as needed.

The worst case traffic scenario for construction would occur during the grading phase, when haul trucks would be used every day. Construction would require removal of approximately 10,000 cubic yards of soil during the grading phase which is 21 days long. Approximately 480 cubic yards of soil would be excavated per day, resulting in 24 haul trips as each truck carries 20 cubic yards, which is 48 trips per day (144 PCE trips). It was assumed that one delivery truck per day (6 PCE trips) would also occur during the grading phase. Taking the grading construction phase of four workers, they would generate 8 PCE trips per day. So the worst-case construction trip scenario would generate approximately 158 PCE trips per day. Operations would require nine chemical delivery trucks per month (54 PCE trips) and as a worst case 3 workers twice a month (6 PCE trips). The worst case operation trip scenario would generate 60 PCE trips per day.

Detailed assumptions, calculations, and modeling outputs are included in **Appendix A** to this document. The project construction 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 construction activities would be less than significant and no mitigation is required.

TABLE 3-3
UNMITIGATED CONSTRUCTION EMISSIONS
(LBS/DAY)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
2017						
Site Preparation	5	43	30	0	9	6
Grading/Excavation	6	63	51	0	10	7
Drainage/Utilities/Subgrade	8	72	55	0	11	8
Building Construction	6	48	34	0	3	3
2018						
Drainage/Utilities/Subgrade	7	66	53	0	11	7
Building Construction	5	43	33	0	3	3
Architectural Coating	8	2	2	0	0	0
Paving	3	29	21	0	2	2
Maximum Regional Onsite and Offsite Project Emissions	**8**	**72**	**55**	**0**	**11**	**8**
City Thresholds	75	250	550	250	100	55
Over/(Under)	(67)	(178)	(495)	(250)	(89)	(47)
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

SOURCE: ESA CalEEMod modeling 2016

Operational emissions from the project are anticipated from the MFRO processes within 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 3-4**. 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 3-4
UNMITIGATED OPERATIONAL EMISSIONS
(LBS/DAY)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area	0.51	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.04	0.03	0.00	0.00	0.00
Mobile	0.12	0.27	1.21	0.00	0.21	0.06
Maximum Project Emissions	**0.63**	**0.31**	**1.24**	**0.00**	**0.21**	**0.06**
City Thresholds	55	250	550	250	100	55
Over/(Under)	(54.37)	(249.69)	(548.76)	(250.00)	(99.79)	(54.94)
Significant	**No**	**No**	**No**	**No**	**No**	**No**

SOURCE: ESA CalEEMod modeling 2016

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)?

Less Than Significant Impact. As the SDAB is currently in nonattainment for the federal and State ozone AAQS and the State PM_{10} and $PM_{2.5}$ AAQS, 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 AAQS in accordance with the requirements of the federal and State Clean Air Acts. As discussed previously under Question 3(a), the proposed project is not growth-inducing, and is consistent with projections 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 3-3 and 3-4, the daily emission levels for ozone precursors (NOx and VOC) and particulate matter (PM_{10} and $PM_{2.5}$) 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 proposed project's construction and operation would not result in a cumulatively considerable increase of any criteria air pollutant for which the SDAB is in non-attainment. Therefore, the Project's contribution to cumulative air quality impacts would be less than significant and no mitigation is required.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Sensitive receptors are land uses that have an increased sensitivity to air pollution or environmental contaminants. Some population groups, such as children, the elderly, and acutely and/or chronically ill persons, especially those with cardio-

respiratory diseases, are considered more sensitive to air pollution than others. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling units. The closest sensitive receptors to the project site include residences just across East Washington Avenue to the north and the Springs of Escondido retirement community adjacent to the project site to the east. The two primary emissions of concern regarding health effects for land development projects are localized CO concentrations and toxic air contaminants (TACs).

CO hotspots, areas of high concentrations of CO, occur in areas with high vehicle density, such as congested intersections and parking garages. A CO air quality impact is considered significant if CO emissions exceed either the California one-hour standard of 20 parts per million (ppm) or the federal and State eight-hour standard of 9.0 ppm. This typically occurs at severely congested intersections (level of service [LOS] E or worse). According to the City TIA Guidelines, a project would require a TIA if the proposed project generates and adds more than 2 percent of the average daily trips for LOS C to any street segment within the preliminary study area. For local collector and other roads, the TIA trigger point is 200 trips, the smallest trigger available. Project construction would generate, at most, 150PCE trips and operation would generate 60 PCE trips as described above under Question 3 (b). These are well below the trigger point of 200 trips and impacts would be less than significant and no mitigation is required.

In addition, the project would not substantially increase the amount of vehicles in the project area and the majority would be only for a short duration during construction. The project does not include a parking garage, nor would one be utilized during project construction. Little to no long-term increase in traffic generation would occur as a result of the proposed project. Traffic impacts along East Washington Avenue, North Ash Street, and Harding Street would be minimal from vehicles accessing the project site during operations. When maintenance and deliveries are not scheduled, there would be no traffic to the site. The intermittent operational traffic would not exceed the LOS standards and travel demand measures for designated roads or highways. Thus, proposed project impacts from vehicular CO emissions to sensitive receptors would be less than significant and no mitigation is required.

According to the San Diego County Guidelines for Determining Significance – Air Quality, for typical land use projects that do not propose stationary sources of emissions regulated by SDAPCD, Diesel Particulate Matter (DPM) is the primary TAC of concern. Construction activities would generate diesel emissions from the operation of onsite equipment. 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 an 11 month period. The majority of the construction would occur away from residences and would be constantly moving around the site. Construction around sensitive receptors would be for a very short duration. 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. Therefore, potential impacts to sensitive receptors from TAC impacts would be less than significant and no mitigation is required.

Routine operational emissions would not add any new stationary sources such as generators or boilers and would therefore not result in the exposure of local sensitive receptors to emissions from these stationary sources. The proposed project would include an emergency diesel generator to provide backup power to necessary electrical and controls equipment, security systems, influent control valves, product water pump station, RO flush systems and electrical rooms HVAC systems when the electric utility is not available. However, the generator is not expected to be operating on a normal basis and would be tested monthly during business hours. Emissions from the emergency generator are expected to be minimal and will be regulated by the SDAPCD permitting process. The proposed 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. Therefore, exposure of the sensitive receptors to these chemicals would be unlikely. Additionally, as discussed in Section 8 (Hazards), these chemicals would be in limited quantities and stored, handled, and disposed of according to federal, state and local health and safety requirements. Therefore, exposure of sensitive receptors to emissions and chemicals would be minimal and less than significant. No mitigation is required.

e) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. 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 during project construction would be less than significant and no mitigation is required.

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 MRFO Facility is not the type of land use that would typically be associated with odor emissions. The MFRO Facility would treat municipal wastewater that has undergone treatment at the HARRF, which is located approximately 5 miles southwest of the MFRO Facility location. The treatment at the HARRF includes primary treatment, secondary treatment, filtration, and chlorine disinfection and meets the California Division of Drinking Water Title 22 Recycled Water criteria. Title 22 recycled water is utilized throughout the City of Escondido for landscape, golf course, and park irrigation. Once at the MFRO Facility the recycled water is conveyed through the additional treatment processes (including membrane systems) pipes, tanks, and pumps. No open bodies of water are proposed at the MFRO Facility, which eliminates potential odors from stagnant water or off-gassing of chemicals. Some chemicals proposed for use at the MFRO Facility have odors; however, all of the chemicals will be stored inside tanks/totes located inside a building. The building would have an HVAC system that would prevent the potential release of chemical odors from the building. Therefore it is anticipated no chemical odors will be detected from at any locations near the

MFRO Facility. As such, impacts associated with objectionable odors during project operations would be less than significant and no mitigation is required.

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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?	☐	☒	☐	☐

ESA prepared a Biological Resources Assessment in August 2016 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, 2016) and California Native Plant Society (CNPS) Rare Plant Inventory (CNPS, 2016) for recorded occurrences of special-status plant and wildlife species within the Escondido, California 7.5-minute USGS topographic quadrangle and the eight surrounding USGS quadrangles. 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 was also reviewed (USFWS 2016). 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.

In addition, regional floral and faunal field guides, such as *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986, and Oberbauer update 2008) 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 site is located within a developed area in the City. Surrounding land uses consist of commercial and residential developments. The site occurs on flat land, at an elevation range of approximately 672 feet above amsl to 674 amsl. The project site itself is largely disturbed, consisting of very little vegetation throughout most of the site; however, non-native grassland community types are located along the perimeter of the site. Evidence of recent mowing of vegetation is present throughout the site. Sparse ornamental trees are located along the northern, western, and eastern edges of the site, both within and just outside project boundaries. Escondido Creek Flood Control Channel, a concrete-lined channel with no riparian vegetation, is located to the south of the project site and parallels the southern border. Previous uses on the project site, such as vehicle use, equipment storage, and stockpiling, have significantly reduced the quality of the habitat on the project site.

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 under the MHCP, 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 (City of Escondido 2001a). A public review draft of the subarea plan was released in 2001. The Project site is not located within the City's MHCP focused planning areas, which are lands proposed to be dedicated for open space and habitat conservation.

Environmental Evaluation

Would the project:

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

Less than Significant Impact with Mitigation. Attachment D 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. No special-status plants were detected during the field survey and are not expected to occur; thus no impacts to special-status plants would occur and no mitigation 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 highly disturbed from previous 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 USFWS, CDFW, or 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 non-native vegetation, structures, and substrates) should occur outside of the avian breeding season, which generally runs from March 1 - August 31, 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 30 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 an appropriate buffer zone based on the sensitivity of the nesting species and proximity to construction activities. 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 established buffer area until August 30th or until a qualified biologist has determined that the juveniles have fledged, the nest is vacated, and there is no evidence of nesting. The qualified biologist can determine if construction activities may encroach into the buffer if absolutely necessary and as long as the project activities are not adversely affecting the nesting birds.
- Should nesting birds be found, 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) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant Impact. Disturbed habitat and non-native grassland types are present within the project boundaries and immediate vicinity. Within the MHCP, conservation of non-native grassland, also known as annual grassland, is identified as critical to achieving MHCP preserve design goals and requires a mitigation ratio of 0.5:1. However, grasslands within the project site do not provide linkages between other areas of native vegetation because the site is completely surrounded by urban development. Thus, impacts to non-native grassland types within the project site in the form of vegetation removal would not be considered significant and would not require mitigation. Escondido Creek, a non-vegetated concrete-lined channel, occurs to the immediate south of the project site but since this channel lacks any associated habitat it is not considered a sensitive natural community. Therefore, no project impacts would occur to any sensitive natural community within or adjacent to the project site and no mitigation is required.

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?

Less than Significant Impact. Escondido Creek concrete-lined Flood Control Channel is located along the southern boundary of the project site, and is a concrete-lined channelized feature that is potentially jurisdictional. Potential direct impacts to this feature may occur through the construction of a stormwater runoff pipe and tank overflow/drain pipelines that would be constructed on the levee and drain into Escondido Creek Flood Control Channel. Potential direct impacts may be associated with constructing within the Ordinary High Water Mark (OHWM) of Escondido Creek and stormwater discharge into a potentially jurisdictional feature. The proposed storm water pipeline and tank overflow/drain pipelines would be constructed within the

jurisdictional limits of Escondido Creek Flood Control Channel to the south. All required permits would be obtained prior to the start of construction activities for the project. Compensatory mitigation implemented as part of the regulatory permit requirements would be implemented to reduce potential project-related impacts to potentially jurisdictional resources to a less than significant level.

The project would be considered a Priority Project for storm water purposes and would require the submittal of a Storm Water Quality Management Plan (SWQMP). The SWQMP would spell out all of the require measures to address post construction impacts. The project would also be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) in compliance with the Construction General Permit and implement construction and post construction Best Management Practices (BMPs) in compliance with the City and RWQCB regulations. A National Pollutant Discharge Elimination System (NPDES) Permit may also be required to address a new storm water discharge into a potentially jurisdictional feature. Implementing these plans and obtaining an NPDES permit will reduce potential indirect impacts to a less than significant level.

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?

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. Wildlife corridors do not occur within or adjacent to the project site. The Escondido Creek concrete-lined Flood Control Channel to the south of the project site may facilitate the movement of wildlife species through the City of Escondido, however, no project activities would impede the use of Escondido Creek Flood Control Channel and thus, no impacts to wildlife corridors are expected to occur. Therefore, impacts would be less than significant.

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

Less than Significant Impact. Multiple mature trees, albeit non-native and ornamental, are located on the perimeter of the project site; some of these trees could be impacted by the proposed project. The City of Escondido General Plan "recognizes oak trees and other mature trees as significantly aesthetic and ecological resources," and requires permits when certain trees are to be removed within the City's boundaries (City of Escondido 2012). However, no trees considered a significantly aesthetic and ecological resource occur on the project site or study area. Additionally, the project's removal of trees by the project would not be considered a significant impact that requires mitigation; however, replacement of removed trees would be required in accordance with the City's grading ordinance. The grading permit issued by the City for the project would serve as authorization for tree removal on the project site because a vegetation removal permit would only be required where there is no associated project or grading permit issued.

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?**

Less than Significant Impact with Mitigation. 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 and the project site is not within a Focused Planning Area in which preserve areas may be designated. Although the subarea plan is in draft form, this project will implement Mitigation Measures BIO-1a and BIO-1b to reduce potential impacts to a less than significant level to be consistent with the conservation measures defined in the MHCP.

References

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California Natural Diversity Data Base (CNDDB). 2016. 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), ***Biological Technical Letter Report for the Phase I Agricultural Reuse and Salt Reduction Project***, prepared by Environmental Science Associates, September 2016.

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).

Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego. Based on Preliminary Descriptions of the Terrestrial Natural Communities of California, Robert F. Holland, Ph.D., October 1986. County of San Diego, March 2008.

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 dedicated cemeteries?	☐	☒	☐	☐

The following analysis is based on the report *Escondido MFRO Facility for Agriculture Phase I Cultural Resources Study* located in Appendix C of this IS/MND (Vader and Lockwood, 2016). The study included a records search at the South Coastal Information Center (SCIC), a historic map and aerial photograph review, Native American outreach, a desktop geoarchaeological review, and a pedestrian cultural resources survey.

Environmental Evaluation

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

A records search was conducted on August 8, 2016 at the SCIC. The records search results indicate that a total of 11 cultural resources studies have been conducted within ½ mile of the proposed project site. Of these 11 studies, two included portions of the proposed project site. The entire proposed project site appears to have been previously surveyed. The records search results also indicate that 27 cultural resources have been previously recorded within ½ mile of the proposed project site. All 27 cultural resources are historic-period built resources primarily consisting of private residences. One resource, a structure known as the Escondido Mutual Water District (EMWD) warehouse/shop building (1201 East Washington Avenue), was documented within the proposed project site in 2004. The resource was recommended ineligible for listing in the California Register of Historical Resources (California Register); however, it was found to be eligible for listing in the City's local register. The resource was demolished in 2006 and is no longer present within the proposed project site. The SCIC records search results indicate that no archaeological resources have been previously documented within the proposed project site or a ½-mile radius.

A review of historic maps and aerial photographs indicates that the immediate vicinity of the proposed project site was largely rural during the first half of the 20th century. However, by the

1960s it appears that residential and commercial development increased dramatically, and by the 1980s the proposed project site was surrounded by subdivisions. The proposed project site was first developed when the EMWD shop/warehouse was constructed in the 1940s and its demolition in 2006.

A Sacred Lands File (SLF) search for the proposed project was requested from the California Native American Heritage Commission (NAHC) on August 2, 2016. The results provided by the NAHC on August 3, 2016 state that "sites" have been identified within the proposed project site, and that the Iipay Nation of Santa Ysabel should be contacted regarding the sites. No additional details regarding the sites were provided.. ESA sent outreach letters to all individuals and groups indicated by the NAHC as having affiliation with the proposed project site via certified mail on August 16, 2016 and conducted follow-up phone calls were conducted on August 19, 2016. To date, ESA has received five responses. In a letter dated August 22, 2016, Ms. Shasta Gaughen, Tribal Historic Preservation Officer for the Pala Band of Mission Indians, stated that the proposed project is outside of Pala's Traditional Use Area (TUA) and deferred to groups located in closer proximity to the proposed project. Similarly, in an e-mail dated August 23, 2016, Ms. Hannah Feeney, Archaeological and Archives Technician for the Agua Caliente Band of Cahuilla Indians, indicated that the proposed project is located outside of the Agua Caliente's TUA and deferred to groups located closer to the proposed project. During a phone call on August 19, 2016, Ms. Lisa Contreras, Vice-Chairperson for the Inaja Band of Mission Indians, stated that she has no questions or comments regarding the proposed project. During a phone call on August 19, 2016, Mr. Joseph Ontiveros, Cultural Resources Department Representative for the Soboba Band of Luiseño Indians (Soboba), stated that Soboba defers to groups in closer proximity to the proposed project. In an e-mail dated September 22, 2016, Vincent Whipple, Cultural Resources Manager for the Rincon Band of Mission Indians (Rincon), stated that the proposed project is located within Rincon's area of cultural interest and requested that he be kept up to date regarding cultural resources identified within the proposed project site.

On August 22, 2016, the City sent letters via e-mail to the San Luis Rey Band of Mission Indians (San Luis Rey), Rincon, and Soboba, inviting the three Tribes to consult with the City pursuant to PRC 21080.3.1 (Assembly Bill 52 [AB52]). To date, one response has been received from Vincent Whipple. In an e-mail dated September 22, 2016, Mr. Whipple requested that a Luiseño tribal monitor be present during all proposed project-related ground disturbance. In addition, on August 11, 2016, City staff informally met with Carmen (Cami) Mojado, Cultural Resources Manager for the San Luis Rey and Merri Lopez-Keifer, Chief Legal Counsel for the San Luis Rey. City staff provided Ms. Mojado and Ms. Lopez-Keifer background on the proposed project and informed them that the City would be sending out letters initiating formal government-to-government consultation pursuant to PRC 21080.3.1 (AB 52). Ms. Mojado and Ms. Lopez-Keifer indicated that they would not need additional consultation provided that recommended mitigation measures provided by San Luis Rey were incorporated into the IS/MND. In a follow-up phone call conducted by City staff on October 5, 2016, Ms. Mojado reiterated that additional consultation would not be required if the City incorporated the mitigation measures provided by San Luis Rey into the IS/MND

A desktop geoarchaeological review was conducted for the proposed project and found that the soils underlying the proposed project site are deep and that there is the potential for alluvial deposits from Escondido Creek to have buried and preserved archaeological resources. Throughout prehistory Escondido Creek would have supported plant and animal resources, periodically provided water, and would have served to attract people to the area on a seasonal basis. Archaeological remains of human activities would have the potential to have become buried and preserved by alluvium. As such, the proposed project is considered to have a high sensitivity for buried archaeological resources.

A cultural resources survey of the proposed project site was conducted on August 15, 2016. The entire proposed project site was subject to a systematic pedestrian survey with transects spaced at no greater than 10-meter intervals (approximately 30 feet). The proposed project site consists of flat topography and appears to be heavily disturbed as indicated by the presence of gravels and recently graded or excavated dirt. Compacted gravel covers much of the western half of the proposed project site; the eastern half consists of soils that appear to have been recently excavated or graded. The lack of vegetation within the proposed project site resulted in ground surface visibility that ranged from 90-100 percent; however, the compacted gravel obscured the ground surface in the western portion of the proposed project site resulting in 0 percent visibility. No indication of the EMWD shop/warehouse building was observed. No cultural resources were identified as a result of the survey.

No known cultural resources are currently within the proposed project site; however, the results of the Phase I cultural resources study indicate that the proposed project site should be considered highly sensitive for the presence of buried unknown archaeological resources. Project-related ground disturbance, which will extend to a depth of 20 feet below the ground surface, has the potential to uncover subsurface archaeological resources that could qualify as historical resources and the proposed project 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**.

Less than Significant Impact with Mitigation.

Mitigation Measures

Mitigation Measure CUL-1: The City of Escondido Planning Division shall 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 implementing the project. The purposes of the agreement are (1) to provide the clear expectations regarding tribal cultural resources, and (2) to formalize protocols and procedures between the City 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 City shall provide written verification to the City that a qualified archaeologist meeting the Secretary of the Interiors Standards for archaeology (U.S Department of the Interior, 2008), 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 within the project 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 MLD, 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.

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 in the proposed 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) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

As discussed above, no archaeological resources were identified in the proposed project site as a result of the Phase I cultural resources study; however, the study indicated that the proposed project site should be considered highly sensitive for the presence of buried unknown archaeological resources. Since the proposed project includes ground-disturbing activities, the project may encounter subsurface archaeological resources that may qualify as unique archaeological resources and the proposed project 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**.

Less than Significant Impact with Mitigation Incorporated.

Mitigation Measures

Implementation of Mitigation Measures CUL-1 through CUL-10 is required.

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

A paleontological records search for the proposed project was conducted by the SDNHM on August 8, 2016 (McComas, 2015). The results indicate that no fossil localities are located within a 1-mile radius of the proposed project site; however, the proposed project site is underlain by late to middle Pleistocene (approximately 10,000 to 780,000 years ago) old alluvial flood plain deposits (Qoa). The age and depositional environment of the old alluvial flood plain deposits suggest the potential for the preservation of paleontological resources and the deposits are considered to have moderate paleontological sensitivity due to known occurrences of fossil specimens found within similar rock units in other regions of San Diego County (McCormas 2016).

Given the sensitivity of the deposits underlying the proposed project site, proposed project ground disturbance has the potential to impact unknown and undiscovered paleontological resources. **Mitigation Measure CUL-11** would ensure the protection and proper handling of paleontological resources, should any unexpected resource be uncovered during ground disturbance activities. Impacts would be less than significant.

Less than Significant with Mitigation Incorporated.

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) Disturb any human remains, including those interred outside of formal cemeteries.

No human remains are known to exist within or adjacent to the proposed project site and it is unlikely that the proposed project would disturb unknown human remains. However, because the proposed 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.

Less than Significant Impact with Mitigation Incorporated.

Mitigation Measures

Implementation of Mitigation Measure CUL-8 is required.

References

McComas, Katie, *Paleontological Records Search for the Escondido MFRO Facility for Agriculture Project (D140488.00)*, letter report to Michael Vader, Environmental Science Associates, from Katie McComas, Paleontology Collections Assisstant, Department of Paleo Services, San Diego Natural History Museum, August 8, 2016.

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 and Christopher Lockwood, *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?	☐	☐	☐	☒

Environmental Evaluation

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.)

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.

ii) Strong seismic ground shaking?

Less than Significant Impact. 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 19.5 miles west of the project site, and the active Elsinore fault is approximately 24.5 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, 2016). 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.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant 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 be within a liquefaction hazard area (Escondido, 2012). Thus, in the event of a large earthquake with a high acceleration of seismic shaking, the potential for liquefaction exists. Given this potential, if liquefiable soils are not taken into consideration in the design of proposed structure and during construction site preparation activities, liquefiable soils could have the potential to impact the structural components of the proposed project. The project construction would comply with the latest standards of the California Building Code (CBC), which are designed to assure safe construction, and it includes building foundation requirements appropriate to site conditions. Further, the project would be required to implement the recommendations for final design parameters outlined in the geotechnical investigation for the project site. Depending on the results of the site-specific geotechnical investigation, design measures might include, but not be limited to, the removal and replacement of liquefiable soils, use of deep foundations, and/or soil compaction and mixing. Compliance with the CBC would reduce adverse effects involving seismic-related ground failure, including liquefaction, and impact would be less than significant.

iv) Landslides?

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) Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. 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 building foundations would be slabs on grade. Onsite soils displaced by grading could be used for fill, compacted to 90 percent of its maximum dry density. A SWPPP would be prepared in compliance with the Construction General Permit. The SWPPP would identify erosion control and sediment control 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, 2016). Therefore impacts related to soil erosion or the loss of topsoil would be less than significant.

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?

Less than Significant Impact. The project site would not be located within an area that is subject to landslides (City of Escondido, 2012). Thus, impacts related to landslides, would not occur. The project area could be subject to liquefaction and lateral spreading, but impacts would not be significant because the proposed project would comply with the CBC building safety design standards as described above in analysis a.(iii).

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, construction and 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) 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?

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) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. No septic tanks or 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*, 2016.

City of Escondido, 2012. General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, Geology and Soils. Available at: www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Geology.pdf, accessed August 12, 2016.

City of Escondido, 2016. Municipal Code Chapter 6, Article 1. Available at: www.qcode.us/codes/escondido/view.php?topic=6-1-6_1_2&frames=on, accessed August 12, 2016.

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?	☐	☐	☒	☐

Environmental Evaluation

Would the project:

a) **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

Less than Significant Impact. Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The major concern with GHGs is that increases in their concentrations are causing global atmospheric temperature increase, and thereby potentially causing global climate change. Global climate change is a change in the weather patterns on Earth that can be measured by prevailing wind speed and direction, storms, precipitation, and temperature. Although the rate of global climate change and the extent of the impacts attributable to human activities is questioned, most in the scientific community agree that there is a direct link between increased emissions of GHGs and long-term global atmospheric 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 CO_2 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 SF_6 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.[1]

The City 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.

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

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

GHG emissions were estimated using the CalEEMod model with the same assumptions as the air quality analysis. Construction-related GHG emissions for the proposed project were estimated by CalEEMod; the assumptions and modeling output are included in Appendix D to this document. Total estimated construction-related GHG emissions for the proposed Project are 1,633.35 $MTCO_2e$. Because the project will be constructed in less than a year, as a worst-case scenario, the emissions from construction were added directly to the operational emissions to determine the maximum annual GHG emissions for the project. Normally, project construction emissions are amortized over 30 years.

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)[2], 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.

[2] 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	1,321.48
Operational	
Area Sources	0.00
Energy Consumption[a]	230.26
Mobile Sources	39.08
Solid Waste	12.41
Water Consumption[b]	28.03
Total Operation emission	309.78
Total Project Emissions	**1,941.04**
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 2016

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

Less than Significant Impact. 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), W-1 (Increased water use efficiency), and W-2 (water recycling). 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 and W-2 promotes the increased use of recycled water. The project would be designed to comply with the CalGreen Code to ensure that the new non-residential uses would use resources (e.g., 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 and increasing the availability of recycled water to end users.

The City 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 mitigation 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?	☐	☐	☒	☐

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.

Environmental Evaluation

Would the project:

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

Less than Significant Impact. Construction 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. 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 and use of sodium hypochlorite, liquid ammonium sulfate, sulfuric acid, sodium bisulfite, antiscalant, and sodium hydroxide (Black & Veatch, 2016). Chemicals would be supplied in bulk storage tanks and totes. Table-1 summarizes the purpose of chemical, storage type, and volume, days of storage and transfer pump type for the chemical to be used by the MFRO Facility. Chemical storage and feed systems would be located inside the Chemical Storage Building and provided with separate containment areas for incompatible chemicals as specified by the 2012 International Fire Code (IFC). The Chemical Storage Building includes secondary containment, sprinklers, and ventilation for all chemicals. All chemical feed piping would be double-walled chemical piping. A pipe trench would run between the Chemical Storage Building and the Process Building for chemical piping. The pipe trench would slope back toward the Chemical Storage Building for additional containment in case of an emergency pipe break. A chemical sump would be placed at each chemical delivery connection adjacent to the Chemical Building. In the event of a leak during filling, the chemical sump would capture any chemical spill. Adjacent paving would slope toward the chemical sump. No potential exists for offsite runoff nor is there any connection to the local sewer. Chemical sumps and containment areas would be maintained by operations staff. 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.

Three of the chemicals are categorized as health hazard – corrosive. This means contact with these chemical could cause irritation of the skin if exposure is prolonged. Washing the exposed area with large amounts of water would deter any skin irritation. Sulfuric acid is categorized as Physical hazard – Class 2 water reactive. This means that it exothermically reacts with water and produces heat. For this reason, sulfuric acid would be stored separately from all other chemicals in an isolated room. None of the chemicals are classified as flammable or explosive.

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

Less than Significant Impact. As 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). A water based fire sprinkler system would be provided in the chemical storage areas of the Chemical Building, and in other buildings and areas as required by local fire code. The fire sprinkler system would consist of the required valves, fire department connection, and sprinkler piping. The fire sprinkler system will be designed according to the requirements of National Fire Prevention Association (NFPA). A continuous ventilation system would be provided for the chemical storage areas of the Chemical Building as required by the local fire code. The ventilation system would consist of a heated ventilation supply unit, exhaust fans, and ductwork. The ductwork would be arranged to provide good airflow in all portions of the chemical storage areas. 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) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. The proposed project is not located within one-quarter mile of an existing or proposed school. The school nearest to the project site is Mission Middle School, and it is approximately 0.30 miles northwest of the project site. No impacts would occur.

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?

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

No Impact. The 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) 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?

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 4.5 miles northeast of the project area. No airstrip related hazard impacts would occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. Access to the project area would be from Washington Avenue. As described under criterion 16.(a) below, increased project-related traffic would not cause a significant increase in congestion. During construction of the project, heavy construction-related vehicles could interfere with emergency response to the site or emergency evacuation procedures in the event of an emergency (e.g., vehicles traveling behind the slow-moving truck). In addition, construction associated with the pipeline installation and/or driveway improvements would result in segments of East Washington Avenue being narrowed for through traffic. A Traffic Management Plan would be prepared as part of the project, which includes strategies to maintain two-way traffic flow on East Washington Avenue, would ensure that access for emergency vehicles would be maintained at all times. The project's construction impacts would be less than significant.

Onsite operational activities would involve minimal and infrequent (monthly) traffic in and out of the project site and would not result in interference with emergency response access. The project's operations impacts would be less than significant.

h) Expose people or structures to a significant risk of loss, injury or death involving wild land fires, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands?

Less than Significant Impact. 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

City of Escondido, 2012. General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, Hazards and Hazardous Materials. Available at: www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Hazards.pdf, accessed August 22, 2016.

City of Escondido, 2016. Municipal Code Chapter 11. Available at: www.qcode.us/codes/escondido/, accessed August 22, 2016.

City of Escondido, 2012. *General Plan, Community Protection Element*. 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?	☐	☐	☒	☐

Environmental Evaluation

Would the project:

a) Violate any water quality standards or waste discharge requirements?

Less than Significant Impact. 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 10 feet deep. Onsite soils displaced by grading could be used for fill, compacted to 90 percent of its maximum dry density. A SWPPP would be prepared in compliance with the Construction General Permit. The SWPPP would identify erosion control and sediment control 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 project is a Priority Development Project (PDP), and therefore, must prepare a SWQMP. The PDP SWQMP would implement construction and post-construction BMPs in compliance with the City and RWQCB regulations such as Low-impact development (LID) design practices which include source control, bioretention basins, and hydromodification designs. The proposed drainage pattern is similar to the existing condition, with the exception of runoff into bio-retention area BMPs before discharging into the Escondido Creek Flood Control drainage channel. Implementation of these LID BMPs under the PDP SWQMP would preclude any potential violations of applicable standards and discharge violations.

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) 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?

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) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on or off-site?

Less than Significant 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, 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 East 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) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?

Less than Significant Impact. The proposed project would not substantially alter the local drainage pattern. The proposed project would use minimal water during construction and operation and would thereby not generate a large amount of runoff as a result of site activities. No stream or river traverses the project site. The Escondido Creek Flood Control Channel is located just south of the project site but project implementation would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite, offsite, or in the channel. BMPs discussed above would control drainage onsite, thereby reducing its potential to cause flooding from occurring on or offsite. Therefore, flooding impacts resulting from drainage pattern alteration would be less than significant.

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?

Less than Significant Impact. The project would be served by the City's stormwater drainage system. Temporary construction activities such as demolition and grading could introduce additional pollutants and sediment into water runoff and flow into nearby storm drains. Stormwater runoff generated on the project site during operation could result in flooding on- or offsite. During storm events, some runoff could wash into the adjacent Escondido Creek Flood Control Channel located south of the project site. However, as discussed, the project would implement BMPs during construction and operation that are designed to control surface water runoff. Therefore, the proposed project would not generate runoff that exceeds the existing stormwater drainage system or creates additional polluted sources of runoff. Impacts regarding exceedance of storm drain systems and creation of polluted runoff would be less than significant.

f) Otherwise substantially degrade water quality?

Less than Significant Impact. Based on review of geotechnical investigations, groundwater at the site has been encountered at approximately 15 feet bgs. The proposed project structures would include subterranean tanks that would extend 10 feet bgs. As such, contact with the groundwater table would likely occur during construction and dewatering would likely be required. The extent to which it is required would be based on the groundwater conditions at the time of construction and the proposed depth of the below-grade excavation. There is a potential to degrade water quality; however, the project includes design features that are either (1) the conveyance of dewatered discharges directly to the City's existing 27-inch sewer pipeline located along the southern boundary of the project site or (2) the inclusion of BMPs in accordance with the San Diego RWQCB's Waste Discharge requirement. The implementation of either of the two above project design features would reduce potential degradation impacts to the quality of the dewatered groundwater to less than significant.

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?

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) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. The project site is located in "Zone X", which is an area of 0.2 percent annual chance flood due to its proximity to the channel south of the project site which is in a 100-year floodplain zone as mapped on a federal Flood Insurance Rate Map or other flood hazard delineation map (FEMA, 2012). The proposed project first finished floor would be elevated above the base flood elevation indicated on the Flood Insurance Rate Map effective height. Therefore, there would be less than significant impacts related to flooding and 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?

Less than Significant Impact. The project site is located within the Lake Wohlford Dam Failure and Dixon Lake Dam Failure Inundation areas (City of Escondido, 2012). A catastrophic dam failure at either Lake Wohlford or Lake Dixon would likely result in extensive downstream flooding along Escondido Creek Flood Control Channel, which is immediately south of the project site. If one of these facilities fails, the project site could be inundated. This risk is considered a significant impact. However, the project site would not include high-density development exposing several people to risk of loss, injury, or death. Further, the Multi-Jurisdictional Hazard Mitigation Plan identifies dam failure risk levels based on Dam Inundation Map data. The existing Multi-Jurisdiction Hazard Mitigation Plan identifies both the Lake Wohlford Dam and the Lake Dixon Dam as having a low dam failure risk. However, an Emergency Action Plan is in place for the project site and surrounding areas. Based on the type of project, low dam failure risk, and existing Emergency Action Plan, impacts related to the failure of a dam would be less than significant.

j) Inundation by seiche, tsunami, or mudflow?

Less than Significant Impact. 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 15 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 2 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 developed commercial and residential neighborhoods 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, 2012. General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, Hydrology and Water Quality. Available at: www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Hydrology.pdf, accessed August 22, 2016.

Federal Emergency Management Agency, 2012. Flood Map Service Center. Available at: https://msc.fema.gov/portal/search?AddressQuery=Escondido%2C%20ca#searchresultsanchor, accessed August 22, 2016.

State Water Resources Control Board, 2014. *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?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Physically divide an established community?

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 commercial, roadway, and residential uses. The proposed project consists of construction of a MFRO facility with two industrial structures on a 4.50 acre site that is zoned as General Commercial (C-G). 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) 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?

Less than Significant Impact. The project site has a land use designation of General Commercial and is zoned as General Commercial (C-G) (City of Escondido, 2012). The adjoining areas are also designated General Commercial and Urban (I, II, and III). Because the project site is a utility project located within a commercially 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 MFRO equipment, including the pumps, would

be housed inside buildings designed to complement the existing neighborhood and reduce equipment noise levels. The project would also include the installation of a new block wall along its eastern boundary to further reduce noise levels and screen 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) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. According to the Biological Resources Assessment Report (Appendix B), the project area is within the area covered by the North County 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, 2012. Escondido General Plan, Downtown Specific Plan and Climate Action Plan EIR, Land Use. Available at: www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1LandUse.pdf , accessed August 22, 2016.

Environmental Science Associates (ESA), *City of Escondido MFRO Facility for Agriculture Project: Biological Resources Assessment*, prepared by Environmental Science Associates, August 2016.

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?	☐	☐	☐	☒

Environmental Evaluation

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?

No Impact. According to the City of Escondido General Plan EIR, 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) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. 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

City of Escondido, 2012. Escondido General Plan, Downtown Specific Plan and Climate Action Plan EIR, Minerals. Available at: www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Minerals.pdf, accessed August 22, 2016.

California Department of Conservation, Division of Oil, Gas & Geothermal Resources Well Finder, 2016. Available at: www.maps.conservation.ca.gov/doggr/index.html#close, accessed August 22, 2016.

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?	☐	☐	☐	☒

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.

Environmental Evaluation

Would the project:

a) 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?

Less Than Significant Impact with Mitigation. The proposed project, which consists of the development of a MFRO Facility to provide advanced treatment for Title 22 quality reuse water produced at the HARRF, would generate noise levels that could affect nearby noise-sensitive land uses during both construction and operations.

Construction

During this 11-month period (from June 2017 to May 2018), 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: 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}) reference 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 REFERENCE NOISE EMISSION LEVELS

Construction Equipment	Noise Level at 50 Feet (dBA, Lmax)
Air Compressor	77.7
Backhoe	77.6
Compactor (Ground)	83.2
Concrete Mixer Truck	78.8
Concrete Saw	89.6
Crane	80.6
Drill Rig Truck	79.0
Dump Truck	76.5
Excavator	80.7
Forklift	75.0
Generator	80.6
Grader	85.0
Paver	77.2
Paving Equipment	90.0
Pumps	80.9
Roller	80.0
Rubber Tired Loader	79.1
Skid Steer Loader	80.0
Surface Equipment	85.0
Trencher	85.0
Vacuum Street Sweeper	81.6
Welder/Torch	74.0

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 be subject to increased noise levels in their existing noise environment. During project construction, the nearest and most notable offsite sensitive receptors that would be exposed to increased noise levels would be the existing residential uses located east of the project site. Specifically, the nearest offsite noise sensitive receptors include the following:

- The multi-family senior retirement community located east and directly adjacent to the project site;
- The single- and multi-family residences located approximately 80 feet north of the project site, across East Washington Avenue; and
- The singe-family residences located approximately 200 feet northwest of the project site along North Ash Street.

Due to the proximity of these offsite 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 offsite sensitive receptors were based on the concurrent operation of up to 18 pieces of equipment on a peak construction day during the drainage/utilities/sub-grade 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 offsite sensitive uses during a peak construction day at the project site.

TABLE 12-2
ESTIMATED CONSTRUCTION NOISE LEVELS AT OFFSITE 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?
Multi-family residences	East and adjacent to project site	200	76	75	**Yes**
Single- and multi-family residences	North of project site, across E. Washington Avenue	200	78	75	**Yes**
Single-family residences	Northwest along North Ash Street	450	65	75	No

[a] The approximate distances are measured from the boundaries of the project site to the nearest sensitive-receptor property line.
[b] For the purpose of conducting a conservative analysis, it was assumed that up to 18 pieces of construction equipment used during the project's drainage/utilities/sub-grade phase would be operating concurrently and continuously.

SOURCE: ESA. 2016.

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 offsite residential uses located to the east and north 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 would enable the construction activities to maintain levels below 75 dBA L_{eq}. Implementation of Mitigation Measures NOI-1 through NOI-5 would restrict the use of these pieces of equipment and reduce overall construction-related noise levels to below 75 dBA L_{eq}.

Mitigation Measures

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

Mitigation Measure NOI-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 east of the project site.

Mitigation Measure NOI-3: 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 NOI-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 NOI-5: 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.

TABLE 12-3
CITY OF ESCONDIDO EXTERIOR SOUND LEVEL LIMITS

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 onsite electric pumps and fans associated with the MFRO Facility. However, all of the MFRO 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 onsite facilities would be setback from the property line based on commercial property setback criteria for corner lots. The minimum building and landscape setback for North Ash Avenue is 5 feet, 10 feet for East Washington Avenue, and 15 feet adjacent to the property to the east. Aside from setbacks, the project would also include the installation of new 6-foot CMU block walls along its eastern boundary. As such, given the design of the proposed project, it is anticipated that noise levels generated by the onsite pumps and associated equipment would be barely perceptible at the offsite sensitive receptors located adjacent to the project site.

An emergency generator would be located in the southwest corner of the MFRO facility along North Ash Street. The engine generator would provide standby power to necessary electrical and controls equipment, security systems, influent control valves, Product Water Pump Station, RO flush systems, and electrical rooms HVAC systems when the electric utility is not available. The engine-generator enclosure is designed to meet the City's Municipal Code sound thresholds at the

property line. The engine-generator would only be operated during a loss of power. However, it would be exercised on a monthly basis during business hours. Operation of the generator would generate an average of 100 dBA sound level at 15 feet from the generator. [3] Commercial uses are located approximately 100 feet from the engine-generator. The engine-generator would be housed within a noise attenuating enclosure that would provide a minimum of 30 dBA noise reduction to meet the City's Municipal Code sound thresholds. A noise study would be conducted during detailed design of the engine-generator enclosure to ensure the design meets these requirements. In addition, Section 17-242 of the City's municipal code exempts noise from any emergency work by public or private utilities when restoring utility service. Therefore, impacts would be less than significant.

As discussed in the Project Description above, noise generating equipment such as pumps would be located within buildings with sound attenuating features (e.g., acoustic louvers, acoustic hoods). All equipment would be selected based on mechanical specifications to meet noise standards. A noise study would be conducted during detailed design of MFRO Process Building to ensure the design meets these requirements. Therefore, operation of the MFRO equipment would not increase ambient noise levels. 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.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

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

[3] Noise measurement conducted by ESA.

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 MFRO 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 offsite 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 multi-family residential uses located to the east 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 and other high-impact equipment (e.g., jackhammers) would be required for construction of the proposed project.

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 offsite sensitive receptors to the project site, which include the residential uses to the east. Table 12-7 shows the construction-related groundborne vibration levels that would occur at the identified offsite sensitive uses during construction at the project site.

The vibration velocities forecasted to occur at the offsite sensitive receptors could potentially range from 0.004 in/sec PPV at the single-family residence located northwest of the Project site, along North Ash Street, to 0.19 in/sec PPV at the residences located immediately east 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 offsite residential 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). The multi-family residences located east of the project site would be within 15 feet of the equipment, they could be exposed to PPV groundborne vibration levels 0.19 inches per second PPV criteria, which is below the threshold for potential damage to structures. The majority of the construction activities would occur greater than 15 feet from the neighboring structures. Therefore, impacts would be less than significant.

TABLE 12-7
GROUNDBORNE VIBRATION LEVELS AT OFFSITE SENSITIVE USES

Offsite Sensitive Land Use	Approximate Distance to project site (ft.)[a]	Estimated PPV (in/sec)	Estimated RMS Velocity Level (VdB)
Multi-family residences located east and adjacent to project site.	20	0.99	108
Single-family residences located north of project site, across E. Washington Avenue.	80	0.016	72
Single-family residences located northwest to project site along Ash Street.	200	0.004	60

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

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

In terms of human annoyance, the vibration levels forecasted to occur at the offsite sensitive receptors would range from 60 VdB at the single-family residences located northwest of the project site along North Ash Street, to 108 VdB at the multi-family residences located immediately east of the project site. As the vibration level at the residences located to the 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 offsite receptors.[4] As such, potential vibration impacts at these nearby offsite 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 -related uses, pre-construction notification would be required to describe the potential for perceptible levels of vibration. With implementation of Mitigation Measure NOI-6, the vibration impact at the offsite residential uses located to the east of the project site of the project site would be less than significant.

Mitigation Measures

Mitigation Measure NOI-6: Prior to any construction activities, the existing residential 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.

[4] 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.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

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 onsite 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), noise generating equipment such as pumps would be located within buildings with sound attenuating features (e.g., acoustic louvers, acoustic hoods). All equipment would be selected based on mechanical specifications to meet noise standards. A noise study would be conducted during detailed design of MFRO Process Building to ensure the design meets these requirements. Therefore, operation of the MFRO equipment would not increase ambient noise levels. Additionally, aside from the onsite facilities being set back from the project site's property line based on commercial property setback criteria, the project would also include the installation of new 6-foot CMU block walls along its eastern boundary. As such, it is anticipated that noise levels generated by the project's onsite pumps and associated equipment would be barely perceptible at the offsite sensitive receptors located adjacent to the project site.

Thus, the operational noise levels generated by the proposed project are not anticipated to result in a 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.

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.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

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., residences) 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 offsite residential uses to the east would be the greatest when construction equipment are operating in the eastern 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 NOI-1 through NOI-5, 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 NOI-1 through NOI-5, the temporary noise impacts associated with project construction would be reduced to a less-than-significant level.

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 expose people residing or working in the project area to excessive noise levels?

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) For a project within the vicinity of a private airstrip, heliport or helistop, would the project expose people residing or working in the project area to excessive noise levels?

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 5 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?	☐	☐	☐	☒

Environmental Evaluation

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)?

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) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

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) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

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?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

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

i) Fire protection?

No 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.

ii) Police protection?

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 require one new full time employee 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.

iii) Schools?

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

iv) Parks?

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

v) Other public facilities?

No Impact. The proposed project involves the installation of a 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, 2016. Available at: www.fire.escondido.org/, accessed August 22, 2016.

Escondido Police Department, 2016. Available at: www.police.escondido.org/home.aspx, accessed August 22, 2016.

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?	☐	☐	☐	☒

Environmental Evaluation

Would the project

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

No Impact. The proposed project consists of construction of a MFRO Facility. Several recreational facilities are located within the City of Escondido, including Washington Park, Grove Park, Oak Hill City Park, and El Norte Park which are within 1.0 mile of the project site. 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) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

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, 2012. Escondido General Plan, Downtown Specific Plan and Climate Action Plan EIR, Recreation. Available at: www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Recreation.pdf , accessed August 22, 2016.

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?	☐	☐	☒	☐

Environmental Evaluation

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?

Less than Significant Impact. 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, a four-lane roadway (designated SR 78 west of Ash Street). The North County Transit District operates Breeze bus service in the project area (NCTD, 2016). Route 351/352 (Escondido Circulator) runs on East Washington Avenue, with a bus stop for Route 352 (the clockwise route) east of North Ash Street on the project site frontage, west of North Beech Street, and east of Harding Street.

Direct traffic impacts, such as local congestion and disruption of traffic flow from construction of the project would be short-term and temporary, and limited to the 11-month construction period.

Construction activities that would generate offsite traffic would include the delivery of construction vehicles and equipment to the project site, the daily arrival and departure of construction workers, and the delivery of materials throughout the construction period. The estimated haul truck traffic would vary depending on the construction activity, but would peak at up to approximately 24 trucks per day, which would yield up to 48 daily one-way trips to and from the project site, spread over the course of the work day. There would be up to 56 work personnel (construction workers and management staff) commuting to and from the work site per day.

Construction-generated traffic would be temporary, and therefore, would not result in any long-term degradation in operating conditions on local roadways used for the project. The primary impact of construction-related traffic would be a temporary and intermittent lessening of the capacities of the roads in the project area because of the slower movements of larger turning radii of construction trucks compared to passenger vehicles. Drivers could experience delay if they were traveling behind a heavy truck. The impact from project-generated traffic would be less than significant.

In addition to onsite construction, the proposed project would install new pipelines that would connect with (tie-in to) existing pipelines under Washington Avenue. The open trenching across East Washington Avenue would require temporary closure of one or two lanes on the four-lane roadway, which could cause congestion/delays on the remaining open lanes. A TCP would be prepared as part of the project, which would include strategies to maintain two-way traffic flow on East Washington Avenue. The implementation of the TCP would ensure that the project's construction impacts would be less than significant.

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?

Less than Significant Impact. There would be one full-time employee on the project site after construction is completed, and the long-term increase in traffic generation as a result of the proposed project would be limited to monthly routine facility maintenance and delivery/removal of chemicals for the facility. Congestion management programs (and level of service [LOS] standards established by congestion management agencies) are intended to monitor and address long-term traffic conditions related to future development that generate permanent (on-going) traffic increases, and do not apply to temporary impacts associated with construction projects. Project construction would be transitory in nature, and effects on roadway operations would be temporary (see discussion under criterion "a" above). The intermittent operational traffic resulting from the proposed project would not adversely affect LOS standards and travel demand measures for designated roads or highways. The impacts would be less than significant.

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?

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

Less than Significant Impact. Neither project construction nor operation would alter the physical configuration of the existing roadway network serving the area, and would not introduce unsafe design features. The project also would not introduce uses (types of vehicles) that are incompatible with existing uses already served by the area's road system. However, the open trenching across East Washington Avenue to install new pipelines would require temporary closure of one or two lanes on the four-lane roadway, which would cause congestion on the remaining open lanes, potentially causing traffic safety hazards. A TCP would be prepared as part of the project, which would include strategies to safely maintain two-way traffic flow on East Washington Avenue. The implementation of the TCP would ensure that the project's construction impacts to traffic safety would be less than significant.

e) Result in inadequate emergency access?

Less than Significant Impact. Access to the project area would be from East Washington Avenue. As described under criterion "a" above, increased project-related traffic would not cause a significant increase in congestion. During construction of the project, heavy construction-related vehicles could interfere with emergency response to the site or emergency evacuation procedures in the event of an emergency (e.g., vehicles traveling behind the slow-moving truck). In addition, construction associated with the pipeline installation would result in segments of East Washington Avenue being narrowed for through traffic. A TCP would be prepared as part of the project, which would include strategies to maintain two-way traffic flow on East Washington Avenue, and would ensure that access for emergency vehicles would be maintained at all times. The implementation of the TCP would ensure that the project's construction impacts to emergency access would be less than significant.

Onsite operational activities would involve minimal and infrequent (monthly) traffic in and out of the project site and would not result in interference with emergency response access. The project's operations impacts would be less than significant.

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?

Less than Significant Impact. As described under criterion "a" above, NCTD Bus Route 351/352 (Escondido Circulator) runs on East Washington Avenue, with a bus stop for the 352 line east of Ash Street on the project site frontage. Pipeline installation could require temporary relocation of this bus stop. However, there are nearby options that could accommodate public transit users of the 352 line on East Washington Avenue at North Beech Street and at Harding Street. Furthermore, implementation of the TCP, which would include coordination with NCTD regarding minimizing project effects on the performance of Route 351/352 and its bus stops, would reduce the impacts to a less-than-significant level.

Once implemented, the proposed project would neither directly nor indirectly eliminate existing or planned alternative transportation corridors or facilities (e.g., bike paths, lanes, etc.), including changes in polices or programs that support alternative transportation, nor construct facilities in locations which future alternative transportation facilities are planned. The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. The project's operations impact would be less than significant.

References

City of Escondido, 2012. General Plan Mobility and Infrastructure Element. Available at: www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/GeneralPlanChapterIII.pdf, accessed August 22, 2016.

Tribal Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
17. Tribal Cultural Resources — Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(l)?	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1 the lead agency shall consider the significance of the resource to a California Native American tribe	☐	☒	☐	☐

Environmental Evaluation

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

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

Less than Significant Impact with Mitigation Incorporated. As discussed above in Section 5 "Cultural Resources" under (a) historical resources, the SLF search prepared by the NAHC indicated that "sites" are located within the proposed project site, but did not provide specific information on the types of resources or their location. Follow-up consultation with the groups identified by the NAHC did not result in the identification of known tribal cultural resources within the proposed project site. Although no tribal cultural resources have been identified within the proposed project site there is a potential for buried unknown archaeological resources that may be eligible for the California Register of Historical Resources or a local register of historical resources and could meet the definition of historical resource, unique archaeological resource, and/or tribal cultural resources. Implementation of **Mitigation Measures CUL-1** through **CUL-10**, as provided by the San Luis Rey Band of Mission Indians during consultation and outlined in

Section 5, would reduce impacts to archaeological resources that also qualify as tribal cultural resources to less than significant.

Mitigation Measures

Implementation of Mitigation Measures CUL-1 through CUL-10

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

Less than Significant Impact with Mitigation Incorporated. As indicated above no known tribal cultural resources have been identified within the proposed project site, but there is a potential to impact buried archaeological resources that may also be considered tribal cultural resources. Implementation of Mitigation Measures CUL-1 through CUL-10, as provided by the San Luis Rey Band of Mission Indians during consultation and outlined in Section 5, would reduce impacts to archaeological resources that also qualify as tribal cultural resources to less than significant.

Mitigation Measures

Implementation of Mitigation Measures CUL-1 through CUL-10

Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
18. 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?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less than Significant Impact. 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 MFRO Facility would provide advanced treatment for Title 22 quality reuse water produced at the HARRF. The MFRO 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 the 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 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) 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?

No Impact. Recycled water from the 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 the 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 the HARRF to receive the brine from the proposed project.

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?

No Impact. The proposed project does not involve the construction or expansion of storm water drainage facilities. An existing 69 inch storm drain is located in North Ash Street with a 24 inch branch to a curb inlet at the corner of North Ash Street and East Washington Avenue. The Escondido Creek Flood Control Channel is also located south of the project site. The project would include an onsite storm water pond 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. No new facilities would be required; therefore, there would be no impact.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. The proposed project involves treating recycled water from the 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 and planned 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) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The proposed project involves treatment of recycled water. Because Title 22 quality reuse water produced at the 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) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less than Significant Impact. Construction and implementation of the proposed project is not anticipated to generate a significant amount of solid waste. 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 (500 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 December 2014) of 39, 608, 998 cubic yards (CalRecycle 2014). As the solid waste from the proposed project is only anticipated to be approximately 10,000 cubic yards, or 0.03 percent of the remaining capacity, the landfill would have sufficient capacity to accommodate the proposed project's solid waste disposal needs. Onsite soils could also be used for fill, and, in this case, would not be disposed of at a solid waste facility. Impacts would be less than significant.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

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, 2012. Downtown Specific Plan and Climate Action Plan EIR, Utilities and Service Systems. Available at: www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Utilities.pdf, accessed August 22, 2016.

California Department of Resources Recycling and Recovery (CalRecycle), 2014. Facility Database, Sycamore Landfill. Available at: www.calrecycle.ca.gov/SWFacilities/Directory/37-AA-0023/Detail/, accessed August 22, 2016.

Energy

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
19. 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?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Result in a substantial increase in overall or per capita energy consumption?

Less than Significant Impact. 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) Result in wasteful or unnecessary consumption of energy?

Less than Significant Impact. 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) 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?

Less than Significant Impact. 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 building electrical rooms. Impacts would be less than significant.

d) Conflict with applicable energy efficiency policies or standards?

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, 2016). The project would not conflict with applicable energy efficiency policies or standards, therefore no impacts would occur.

References

City of Escondido, 2016. Municipal Code Chapter 6, Article 1. Available at:www.qcode.us/codes/escondido/, accessed August 22, 2016.

Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
20. 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?	☐	☒	☐	☐

Environmental Evaluation

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?

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 commercial 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, cultural resources, noise, and traffic 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) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant. 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
Channel maintenance Activities Project	Various sites throughout Escondido	Flood control	63 maintenance sites
Lindley Reservoir Tank Replacement Project	720 Hubbard Avenue / 1.54 miles northwest	Infrastructure	Two 1.5 million-gallon buried water tanks
Recycled Water Easterly Main Project	1.5 miles southwest	Infrastructure	7.4 miles of recycled water pipeline; brine disposal pipeline and fiber optic cables; recycled water pump station; and recycled water storage tank

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, noise, cultural resources, and traffic 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) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant with Mitigation. Based on the analysis, the proposed project would have potentially significant environmental effects on biological resources, cultural resources, noise, and traffic 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	22	KSF	General Heavy Industrial
Acerage	5		
Employment	2 to 3	Total	per month

CONSTRUCTION INFORMATION

The construction information was provided by the Client.

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.

Construction schedule based on Project specific Information

Phase	# Worker	Starte Date	End Date	# Days	Days/week
Construction - June 2017 thru May 2018					
Site Preparation	4	6/1/2017	7/1/2017	22	5
Grading/Excavation	4	6/1/2017	7/2/2017	22	5
Drainage/Utilities/Subgrade	6	7/1/2017	4/1/2018	75	5
Building Construction	30	7/1/2017	4/1/2018	220	5
Architectural Coating	5	2/1/2018	5/1/2018	60	5
Paving	7	4/1/2018	5/1/2018	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

Grading/Excavation

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

Escondido MFRO

Assumptions

Equipment	#	Hrs	Acres disturbed[1]	
air compressors	1	8	0	
Backhoes/Loaders	3	8	0	
concrete/industrial saws	1	4	0	
compactor	1	8	0	
Excavator	1	8	1	
Forklifts	1	8	0	
Grader	1	8	0.5	
Generator Sets	1	8	0	
Skid Steer Loaders	1	8	0	
Sweepers/scrubbers	1	4	0	1.5 Total

Drainage/Utilities/Subgrade

Equipment	#	Hrs	Acres disturbed[1]
air compressors	2	8	0
Backhoes/Loaders	3	8	0
Bore/Drill Rigs	1	8	0
Compactor	1	8	0
Crane	1	8	0
Excavator	1	8	1
Forklift	1	8	0

Escondido MFRO

Assumptions

Generator set	1	8	0	
Pumps	1	4	0	
Skid Steer Loaders	1	8	0	
Sweeper/scrubber	1	4	0	
trencher	1	8	0.5	
Welders	1	8	0	1.5 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

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	1	8	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 occur once a month. Routine operations and maintenance employees would occur 2-3 times per month.

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

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	22.00	1000sqft	5.00	22,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2018
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

Construction Phase - See Project Assumptions

Off-road Equipment - See Project Assumptions

Off-road Equipment - See Project Assumptions

Off-road Equipment - See Project Assumptions

Off-road Equipment - See Project Assumptions

Grading - See Project Assumptions

Trips and VMT - See Project Assumptions

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	33000	0
tblConstructionPhase	NumDays	18.00	64.00

tblConstructionPhase	NumDays	230.00	195.00
tblConstructionPhase	NumDays	8.00	22.00
tblConstructionPhase	NumDays	8.00	195.00
tblConstructionPhase	NumDays	18.00	22.00
tblConstructionPhase	NumDays	5.00	22.00
tblConstructionPhase	PhaseEndDate	6/28/2018	5/1/2018
tblConstructionPhase	PhaseEndDate	12/28/2018	4/1/2018
tblConstructionPhase	PhaseEndDate	8/1/2017	7/1/2017
tblConstructionPhase	PhaseEndDate	3/30/2018	4/1/2018
tblConstructionPhase	PhaseEndDate	5/31/2018	5/1/2018
tblConstructionPhase	PhaseEndDate	6/30/2017	7/1/2017
tblConstructionPhase	PhaseStartDate	4/2/2018	2/1/2018
tblConstructionPhase	PhaseStartDate	4/2/2018	7/1/2017
tblConstructionPhase	PhaseStartDate	7/2/2017	6/1/2017
tblConstructionPhase	PhaseStartDate	7/2/2017	7/1/2017
tblConstructionPhase	PhaseStartDate	5/2/2018	4/1/2018
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	AcresOfGrading	11.00	2.50
tblGrading	AcresOfGrading	11.00	2.50
tblGrading	MaterialExported	0.00	5,000.00
tblGrading	MaterialExported	0.00	5,000.00
tblLandUse	LotAcreage	0.51	5.00
tblOffRoadEquipment	HorsePower	78.00	255.00
tblOffRoadEquipment	HorsePower	78.00	162.00

tblOffRoadEquipment	HorsePower	78.00	162.00
tblOffRoadEquipment	HorsePower	205.00	174.00
tblOffRoadEquipment	HorsePower	81.00	174.00
tblOffRoadEquipment	HorsePower	226.00	97.00
tblOffRoadEquipment	HorsePower	8.00	255.00
tblOffRoadEquipment	HorsePower	8.00	255.00
tblOffRoadEquipment	LoadFactor	0.48	0.40
tblOffRoadEquipment	LoadFactor	0.48	0.38
tblOffRoadEquipment	LoadFactor	0.48	0.38
tblOffRoadEquipment	LoadFactor	0.50	0.41
tblOffRoadEquipment	LoadFactor	0.73	0.41
tblOffRoadEquipment	LoadFactor	0.29	0.37
tblOffRoadEquipment	LoadFactor	0.43	0.40
tblOffRoadEquipment	LoadFactor	0.43	0.40
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripNumber	625.00	4.00
tblTripsAndVMT	HaulingTripNumber	625.00	1,000.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00

tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	25.00	23.00
tblTripsAndVMT	WorkerTripNumber	33.00	30.00
tblTripsAndVMT	WorkerTripNumber	45.00	40.00

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					
2017	24.6709	225.7651	166.9735	0.2662	20.5621	13.0628	33.6249	10.4715	12.3258	22.7973	0.0000	26,271.5506	26,271.5506	4.8386	0.0000	26,373.1620
2018	23.3219	136.1109	109.7221	0.1741	7.2082	8.1376	15.3458	3.5420	7.7040	11.2460	0.0000	16,840.7667	16,840.7667	3.6467	0.0000	16,917.3482
Total	**47.9927**	**361.8760**	**276.6956**	**0.4403**	**27.7703**	**21.2004**	**48.9707**	**14.0135**	**20.0298**	**34.0433**	**0.0000**	**43,112.3173**	**43,112.3173**	**8.4854**	**0.0000**	**43,290.5103**

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					
2017	24.6709	225.7651	166.9735	0.2662	8.6637	13.0628	21.7265	4.1616	12.3258	16.4874	0.0000	26,271.5506	26,271.5506	4.8386	0.0000	26,373.1620
2018	23.3219	136.1109	109.7221	0.1741	3.0835	8.1376	11.2211	1.4222	7.7040	9.1261	0.0000	16,840.7667	16,840.7667	3.6467	0.0000	16,917.3482
Total	**47.9927**	**361.8760**	**276.6956**	**0.4403**	**11.7471**	**21.2004**	**32.9476**	**5.5838**	**20.0298**	**25.6136**	**0.0000**	**43,112.3173**	**43,112.3173**	**8.4854**	**0.0000**	**43,290.5103**

	ROG	NOx	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**	**57.70**	**0.00**	**32.72**	**60.15**	**0.00**	**24.76**	**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	0.5059	2.0000e-005	2.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.0900e-003
Energy	4.3600e-003	0.0396	0.0333	2.4000e-004		3.0100e-003	3.0100e-003		3.0100e-003	3.0100e-003		47.5101	47.5101	9.1000e-004	8.7000e-004	47.7992
Mobile	0.1109	0.2502	1.1575	3.0200e-003	0.2039	3.5300e-003	0.2074	0.0544	3.2500e-003	0.0577		246.7011	246.7011	9.5200e-003		246.9009
Total	**0.6212**	**0.2898**	**1.1931**	**3.2600e-003**	**0.2039**	**6.5500e-003**	**0.2104**	**0.0544**	**6.2700e-003**	**0.0607**		**294.2159**	**294.2159**	**0.0104**	**8.7000e-004**	**294.7052**

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	0.5059	2.0000e-005	2.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.0900e-003
Energy	3.7000e-003	0.0337	0.0283	2.0000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003		40.4048	40.4048	7.7000e-004	7.4000e-004	40.6507
Mobile	0.1109	0.2502	1.1575	3.0200e-003	0.2039	3.5300e-003	0.2074	0.0544	3.2500e-003	0.0577		246.7011	246.7011	9.5200e-003		246.9009
Total	**0.6206**	**0.2839**	**1.1881**	**3.2200e-003**	**0.2039**	**6.1000e-003**	**0.2100**	**0.0544**	**5.8200e-003**	**0.0602**		**287.1107**	**287.1107**	**0.0103**	**7.4000e-004**	**287.5567**

	ROG	NOx	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	0.11	2.04	0.42	1.23	0.00	6.87	0.21	0.00	7.18	0.74	0.00	2.41	2.41	1.34	14.94	2.43

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	6/1/2017	7/1/2017	5	22	
2	Grading	Grading	6/1/2017	7/1/2017	5	22	
3	Drainage Utilities Subgrade	Grading	7/1/2017	4/1/2018	5	195	
4	Building Construction	Building Construction	7/1/2017	4/1/2018	5	195	
5	Architectural Coating	Architectural Coating	2/1/2018	5/1/2018	5	64	
6	Paving	Paving	4/1/2018	5/1/2018	5	22	

Acres of Grading (Site Preparation Phase): 2.5

Acres of Grading (Grading Phase): 2.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 33,000; Non-Residential Outdoor: 11,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Air Compressors	1	8.00	255	0.40
Site Preparation	Concrete/Industrial Saws	1	4.00	81	0.73
Site Preparation	Generator Sets	1	8.00	84	0.74
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Plate Compactors	1	8.00	8	0.43

Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Skid Steer Loaders	1	4.00	64	0.37
Site Preparation	Sweepers/Scrubbers	1	4.00	64	0.46
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Air Compressors	1	8.00	162	0.38
Grading	Concrete/Industrial Saws	1	4.00	174	0.41
Grading	Excavators	1	8.00	162	0.38
Grading	Forklifts	1	8.00	89	0.20
Grading	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Grading	Plate Compactors	1	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Skid Steer Loaders	1	8.00	64	0.37
Grading	Sweepers/Scrubbers	1	4.00	64	0.46
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Drainage Utilities Subgrade	Air Compressors	2	8.00	162	0.38
Drainage Utilities Subgrade	Bore/Drill Rigs	1	8.00	174	0.41
Drainage Utilities Subgrade	Cranes	1	8.00	97	0.37
Drainage Utilities Subgrade	Excavators	1	8.00	162	0.38
Drainage Utilities Subgrade	Forklifts	1	8.00	89	0.20
Drainage Utilities Subgrade	Generator Sets	1	8.00	84	0.74
Drainage Utilities Subgrade	Graders	1	8.00	174	0.41
Drainage Utilities Subgrade	Plate Compactors	1	8.00	255	0.40
Drainage Utilities Subgrade	Pumps	1	4.00	84	0.74
Drainage Utilities Subgrade	Rubber Tired Dozers	1	8.00	255	0.40
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	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Drainage Utilities Subgrade	Trenchers	1	8.00	80	0.50
Drainage Utilities Subgrade	Welders	1	8.00	46	0.45
Building Construction	Air Compressors	3	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	2	8.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
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
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Forklifts	1	8.00	89	0.20
Paving	Graders	1	8.00	174	0.41
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Pumps	1	8.00	84	0.74
Paving	Rollers	1	8.00	80	0.38
Paving	Skid Steer Loaders	1	8.00	64	0.37
Paving	Surfacing Equipment	1	8.00	253	0.30
Paving	Sweepers/Scrubbers	1	4.00	64	0.46

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
Site Preparation	10	23.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	13	30.00	0.00	1,000.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Drainage Utilities Subgrade	18	40.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	9.00	4.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	10	25.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2017

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					6.1745	0.0000	6.1745	3.3281	0.0000	3.3281			0.0000			0.0000
Off-Road	4.4950	42.9732	29.1792	0.0428		2.4132	2.4132		2.2704	2.2704		4,394.3280	4,394.3280	0.8732		4,412.6644
Total	**4.4950**	**42.9732**	**29.1792**	**0.0428**	**6.1745**	**2.4132**	**8.5877**	**3.3281**	**2.2704**	**5.5985**		**4,394.3280**	**4,394.3280**	**0.8732**		**4,412.6644**

3.2 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.3400e-003	0.0454	0.0347	1.4000e-004	3.1700e-003	6.1000e-004	3.7800e-003	8.7000e-004	5.6000e-004	1.4300e-003		13.4699	13.4699	9.0000e-005		13.4718
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	0.0731	0.0858	0.9307	2.3900e-003	0.1889	1.3700e-003	0.1903	0.0501	1.2700e-003	0.0514		192.0540	192.0540	9.2600e-003		192.2485
Total	**0.0764**	**0.1312**	**0.9654**	**2.5300e-003**	**0.1921**	**1.9800e-003**	**0.1941**	**0.0510**	**1.8300e-003**	**0.0528**		**205.5239**	**205.5239**	**9.3500e-003**		**205.7203**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2877	0.0000	2.2877	1.2331	0.0000	1.2331			0.0000			0.0000
Off-Road	4.4950	42.9732	29.1792	0.0428		2.4132	2.4132		2.2704	2.2704	0.0000	4,394.3280	4,394.3280	0.8732		4,412.6644
Total	**4.4950**	**42.9732**	**29.1792**	**0.0428**	**2.2877**	**2.4132**	**4.7008**	**1.2331**	**2.2704**	**3.5035**	**0.0000**	**4,394.3280**	**4,394.3280**	**0.8732**		**4,412.6644**

3.2 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.3400e-003	0.0454	0.0347	1.4000e-004	3.1700e-003	6.1000e-004	3.7800e-003	8.7000e-004	5.6000e-004	1.4300e-003		13.4699	13.4699	9.0000e-005		13.4718
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	0.0731	0.0858	0.9307	2.3900e-003	0.1889	1.3700e-003	0.1903	0.0501	1.2700e-003	0.0514		192.0540	192.0540	9.2600e-003		192.2485
Total	**0.0764**	**0.1312**	**0.9654**	**2.5300e-003**	**0.1921**	**1.9800e-003**	**0.1941**	**0.0510**	**1.8300e-003**	**0.0528**		**205.5239**	**205.5239**	**9.3500e-003**		**205.7203**

3.3 Grading - 2017

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					6.1745	0.0000	6.1745	3.3281	0.0000	3.3281			0.0000			0.0000
Off-Road	5.2966	51.2325	38.2461	0.0514		3.0131	3.0131		2.8213	2.8213		5,135.5489	5,135.5489	1.2032		5,160.8153
Total	**5.2966**	**51.2325**	**38.2461**	**0.0514**	**6.1745**	**3.0131**	**9.1877**	**3.3281**	**2.8213**	**6.1494**		**5,135.5489**	**5,135.5489**	**1.2032**		**5,160.8153**

3.3 Grading - 2017

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	0.8345	11.3584	8.6717	0.0339	0.7921	0.1530	0.9450	0.2169	0.1407	0.3576		3,367.4625	3,367.4625	0.0233		3,367.9520
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	0.0953	0.1118	1.2139	3.1200e-003	0.2464	1.7900e-003	0.2482	0.0654	1.6500e-003	0.0670		250.5052	250.5052	0.0121		250.7589
Total	**0.9298**	**11.4703**	**9.8856**	**0.0371**	**1.0385**	**0.1547**	**1.1932**	**0.2823**	**0.1423**	**0.4246**		**3,617.9678**	**3,617.9678**	**0.0354**		**3,618.7109**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2877	0.0000	2.2877	1.2331	0.0000	1.2331			0.0000			0.0000
Off-Road	5.2966	51.2325	38.2461	0.0514		3.0131	3.0131		2.8213	2.8213	0.0000	5,135.5489	5,135.5489	1.2032		5,160.8153
Total	**5.2966**	**51.2325**	**38.2461**	**0.0514**	**2.2877**	**3.0131**	**5.3008**	**1.2331**	**2.8213**	**4.0543**	**0.0000**	**5,135.5489**	**5,135.5489**	**1.2032**		**5,160.8153**

3.3 Grading - 2017

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	0.8345	11.3584	8.6717	0.0339	0.7921	0.1530	0.9450	0.2169	0.1407	0.3576		3,367.4625	3,367.4625	0.0233		3,367.9520
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	0.0953	0.1118	1.2139	3.1200e-003	0.2464	1.7900e-003	0.2482	0.0654	1.6500e-003	0.0670		250.5052	250.5052	0.0121		250.7589
Total	**0.9298**	**11.4703**	**9.8856**	**0.0371**	**1.0385**	**0.1547**	**1.1932**	**0.2823**	**0.1423**	**0.4246**		**3,617.9678**	**3,617.9678**	**0.0354**		**3,618.7109**

3.4 Drainage Utilities Subgrade - 2017

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	7.9051	71.3498	53.1807	0.0727		4.3683	4.3683		4.0994	4.0994		7,215.8487	7,215.8487	1.6985		7,251.5165
Total	**7.9051**	**71.3498**	**53.1807**	**0.0727**	**6.5523**	**4.3683**	**10.9207**	**3.3675**	**4.0994**	**7.4669**		**7,215.8487**	**7,215.8487**	**1.6985**		**7,251.5165**

3.4 Drainage Utilities Subgrade - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.8000e-004	5.1300e-003	3.9100e-003	2.0000e-005	4.9000e-004	7.0000e-005	5.6000e-004	1.3000e-004	6.0000e-005	1.9000e-004		1.5197	1.5197	1.0000e-005		1.5199
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	0.1271	0.1491	1.6186	4.1600e-003	0.3286	2.3900e-003	0.3310	0.0872	2.2000e-003	0.0894		334.0070	334.0070	0.0161		334.3452
Total	**0.1275**	**0.1543**	**1.6225**	**4.1800e-003**	**0.3291**	**2.4600e-003**	**0.3315**	**0.0873**	**2.2600e-003**	**0.0896**		**335.5267**	**335.5267**	**0.0161**		**335.8651**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4276	0.0000	2.4276	1.2477	0.0000	1.2477			0.0000			0.0000
Off-Road	7.9051	71.3498	53.1807	0.0727		4.3683	4.3683		4.0994	4.0994	0.0000	7,215.8487	7,215.8487	1.6985		7,251.5165
Total	**7.9051**	**71.3498**	**53.1807**	**0.0727**	**2.4276**	**4.3683**	**6.7960**	**1.2477**	**4.0994**	**5.3471**	**0.0000**	**7,215.8487**	**7,215.8487**	**1.6985**		**7,251.5165**

3.4 Drainage Utilities Subgrade - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.8000e-004	5.1300e-003	3.9100e-003	2.0000e-005	4.9000e-004	7.0000e-005	5.6000e-004	1.3000e-004	6.0000e-005	1.9000e-004		1.5197	1.5197	1.0000e-005		1.5199
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	0.1271	0.1491	1.6186	4.1600e-003	0.3286	2.3900e-003	0.3310	0.0872	2.2000e-003	0.0894		334.0070	334.0070	0.0161		334.3452
Total	**0.1275**	**0.1543**	**1.6225**	**4.1800e-003**	**0.3291**	**2.4600e-003**	**0.3315**	**0.0873**	**2.2600e-003**	**0.0896**		**335.5267**	**335.5267**	**0.0161**		**335.8651**

3.4 Drainage Utilities Subgrade - 2018

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	6.8939	62.2231	51.3204	0.0727		3.7148	3.7148		3.4883	3.4883		7,135.7105	7,135.7105	1.6747		7,170.8801
Total	**6.8939**	**62.2231**	**51.3204**	**0.0727**	**6.5523**	**3.7148**	**10.2672**	**3.3675**	**3.4883**	**6.8558**		**7,135.7105**	**7,135.7105**	**1.6747**		**7,170.8801**

3.4 Drainage Utilities Subgrade - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.7000e-004	4.6300e-003	3.8100e-003	2.0000e-005	9.0000e-004	7.0000e-005	9.7000e-004	2.3000e-004	6.0000e-005	2.9000e-004		1.4936	1.4936	1.0000e-005		1.4939
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	0.1159	0.1361	1.4692	4.1600e-003	0.3286	2.3400e-003	0.3309	0.0872	2.1700e-003	0.0893		321.4785	321.4785	0.0150		321.7931
Total	**0.1162**	**0.1407**	**1.4730**	**4.1800e-003**	**0.3295**	**2.4100e-003**	**0.3319**	**0.0874**	**2.2300e-003**	**0.0896**		**322.9722**	**322.9722**	**0.0150**		**323.2870**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4276	0.0000	2.4276	1.2477	0.0000	1.2477			0.0000			0.0000
Off-Road	6.8939	62.2231	51.3204	0.0727		3.7148	3.7148		3.4883	3.4883	0.0000	7,135.7105	7,135.7105	1.6747		7,170.8801
Total	**6.8939**	**62.2231**	**51.3204**	**0.0727**	**2.4276**	**3.7148**	**6.1425**	**1.2477**	**3.4883**	**4.7359**	**0.0000**	**7,135.7105**	**7,135.7105**	**1.6747**		**7,170.8801**

3.4 Drainage Utilities Subgrade - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.7000e-004	4.6300e-003	3.8100e-003	2.0000e-005	9.0000e-004	7.0000e-005	9.7000e-004	2.3000e-004	6.0000e-005	2.9000e-004		1.4936	1.4936	1.0000e-005		1.4939
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	0.1159	0.1361	1.4692	4.1600e-003	0.3286	2.3400e-003	0.3309	0.0872	2.1700e-003	0.0893		321.4785	321.4785	0.0150		321.7931
Total	**0.1162**	**0.1407**	**1.4730**	**4.1800e-003**	**0.3295**	**2.4100e-003**	**0.3319**	**0.0874**	**2.2300e-003**	**0.0896**		**322.9722**	**322.9722**	**0.0150**		**323.2870**

3.5 Building Construction - 2017

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	5.7733	48.0763	33.1083	0.0536		3.1034	3.1034		2.9831	2.9831		5,196.3124	5,196.3124	0.9987		5,217.2842
Total	**5.7733**	**48.0763**	**33.1083**	**0.0536**		**3.1034**	**3.1034**		**2.9831**	**2.9831**		**5,196.3124**	**5,196.3124**	**0.9987**		**5,217.2842**

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.8000e-004	5.1300e-003	3.9100e-003	2.0000e-005	4.9000e-004	7.0000e-005	5.6000e-004	1.3000e-004	6.0000e-005	1.9000e-004		1.5197	1.5197	1.0000e-005		1.5199
Vendor	0.0383	0.3390	0.4177	9.5000e-004	0.0266	4.9800e-003	0.0315	7.5800e-003	4.5800e-003	0.0122		93.8232	93.8232	7.0000e-004		93.8378
Worker	0.0286	0.0336	0.3642	9.4000e-004	0.0739	5.4000e-004	0.0745	0.0196	5.0000e-004	0.0201		75.1516	75.1516	3.6200e-003		75.2277
Total	**0.0672**	**0.3777**	**0.7857**	**1.9100e-003**	**0.1010**	**5.5900e-003**	**0.1066**	**0.0273**	**5.1400e-003**	**0.0325**		**170.4944**	**170.4944**	**4.3300e-003**		**170.5854**

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	5.7733	48.0763	33.1083	0.0536		3.1034	3.1034		2.9831	2.9831	0.0000	5,196.3124	5,196.3124	0.9987		5,217.2842
Total	**5.7733**	**48.0763**	**33.1083**	**0.0536**		**3.1034**	**3.1034**		**2.9831**	**2.9831**	**0.0000**	**5,196.3124**	**5,196.3124**	**0.9987**		**5,217.2842**

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.8000e-004	5.1300e-003	3.9100e-003	2.0000e-005	4.9000e-004	7.0000e-005	5.6000e-004	1.3000e-004	6.0000e-005	1.9000e-004		1.5197	1.5197	1.0000e-005		1.5199
Vendor	0.0383	0.3390	0.4177	9.5000e-004	0.0266	4.9800e-003	0.0315	7.5800e-003	4.5800e-003	0.0122		93.8232	93.8232	7.0000e-004		93.8378
Worker	0.0286	0.0336	0.3642	9.4000e-004	0.0739	5.4000e-004	0.0745	0.0196	5.0000e-004	0.0201		75.1516	75.1516	3.6200e-003		75.2277
Total	**0.0672**	**0.3777**	**0.7857**	**1.9100e-003**	**0.1010**	**5.5900e-003**	**0.1066**	**0.0273**	**5.1400e-003**	**0.0325**		**170.4944**	**170.4944**	**4.3300e-003**		**170.5854**

3.5 Building Construction - 2018

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	5.0585	42.8969	32.1558	0.0536		2.6429	2.6429		2.5432	2.5432		5,158.9654	5,158.9654	0.9662		5,179.2564
Total	**5.0585**	**42.8969**	**32.1558**	**0.0536**		**2.6429**	**2.6429**		**2.5432**	**2.5432**		**5,158.9654**	**5,158.9654**	**0.9662**		**5,179.2564**

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.7000e-004	4.6300e-003	3.8100e-003	2.0000e-005	9.0000e-004	7.0000e-005	9.7000e-004	2.3000e-004	6.0000e-005	2.9000e-004		1.4936	1.4936	1.0000e-005		1.4939
Vendor	0.0360	0.3062	0.3980	9.5000e-004	0.0266	4.6200e-003	0.0312	7.5700e-003	4.2500e-003	0.0118		92.2121	92.2121	6.8000e-004		92.2264
Worker	0.0261	0.0306	0.3306	9.4000e-004	0.0739	5.3000e-004	0.0745	0.0196	4.9000e-004	0.0201		72.3327	72.3327	3.3700e-003		72.4035
Total	**0.0624**	**0.3415**	**0.7324**	**1.9100e-003**	**0.1014**	**5.2200e-003**	**0.1066**	**0.0274**	**4.8000e-003**	**0.0322**		**166.0384**	**166.0384**	**4.0600e-003**		**166.1237**

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	5.0585	42.8969	32.1558	0.0536		2.6429	2.6429		2.5432	2.5432	0.0000	5,158.9654	5,158.9654	0.9662		5,179.2564
Total	**5.0585**	**42.8969**	**32.1558**	**0.0536**		**2.6429**	**2.6429**		**2.5432**	**2.5432**	**0.0000**	**5,158.9654**	**5,158.9654**	**0.9662**		**5,179.2564**

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.7000e-004	4.6300e-003	3.8100e-003	2.0000e-005	9.0000e-004	7.0000e-005	9.7000e-004	2.3000e-004	6.0000e-005	2.9000e-004		1.4936	1.4936	1.0000e-005		1.4939
Vendor	0.0360	0.3062	0.3980	9.5000e-004	0.0266	4.6200e-003	0.0312	7.5700e-003	4.2500e-003	0.0118		92.2121	92.2121	6.8000e-004		92.2264
Worker	0.0261	0.0306	0.3306	9.4000e-004	0.0739	5.3000e-004	0.0745	0.0196	4.9000e-004	0.0201		72.3327	72.3327	3.3700e-003		72.4035
Total	**0.0624**	**0.3415**	**0.7324**	**1.9100e-003**	**0.1014**	**5.2200e-003**	**0.1066**	**0.0274**	**4.8000e-003**	**0.0322**		**166.0384**	**166.0384**	**4.0600e-003**		**166.1237**

3.6 Architectural Coating - 2018

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	7.9664					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**8.2650**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.6 Architectural Coating - 2018

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	5.7900e-003	6.8000e-003	0.0735	2.1000e-004	0.0164	1.2000e-004	0.0166	4.3600e-003	1.1000e-004	4.4700e-003		16.0739	16.0739	7.5000e-004		16.0897
Total	**5.7900e-003**	**6.8000e-003**	**0.0735**	**2.1000e-004**	**0.0164**	**1.2000e-004**	**0.0166**	**4.3600e-003**	**1.1000e-004**	**4.4700e-003**		**16.0739**	**16.0739**	**7.5000e-004**		**16.0897**

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	7.9664					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**8.2650**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.6 Architectural Coating - 2018

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	5.7900e-003	6.8000e-003	0.0735	2.1000e-004	0.0164	1.2000e-004	0.0166	4.3600e-003	1.1000e-004	4.4700e-003		16.0739	16.0739	7.5000e-004		16.0897
Total	**5.7900e-003**	**6.8000e-003**	**0.0735**	**2.1000e-004**	**0.0164**	**1.2000e-004**	**0.0166**	**4.3600e-003**	**1.1000e-004**	**4.4700e-003**		**16.0739**	**16.0739**	**7.5000e-004**		**16.0897**

3.7 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8443	28.3701	21.1608	0.0358		1.6196	1.6196		1.5129	1.5129		3,545.3947	3,545.3947	0.9498		3,565.3396
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.8443**	**28.3701**	**21.1608**	**0.0358**		**1.6196**	**1.6196**		**1.5129**	**1.5129**		**3,545.3947**	**3,545.3947**	**0.9498**		**3,565.3396**

3.7 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.2400e-003	0.0410	0.0337	1.4000e-004	3.1700e-003	6.0000e-004	3.7700e-003	8.7000e-004	5.6000e-004	1.4200e-003		13.2391	13.2391	9.0000e-005		13.2410
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	0.0724	0.0851	0.9183	2.6000e-003	0.2054	1.4600e-003	0.2068	0.0545	1.3600e-003	0.0558		200.9241	200.9241	9.3600e-003		201.1207
Total	**0.0757**	**0.1261**	**0.9520**	**2.7400e-003**	**0.2085**	**2.0600e-003**	**0.2106**	**0.0553**	**1.9200e-003**	**0.0573**		**214.1631**	**214.1631**	**9.4500e-003**		**214.3617**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8443	28.3701	21.1608	0.0358		1.6196	1.6196		1.5129	1.5129	0.0000	3,545.3947	3,545.3947	0.9498		3,565.3396
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.8443**	**28.3701**	**21.1608**	**0.0358**		**1.6196**	**1.6196**		**1.5129**	**1.5129**	**0.0000**	**3,545.3947**	**3,545.3947**	**0.9498**		**3,565.3396**

3.7 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.2400e-003	0.0410	0.0337	1.4000e-004	3.1700e-003	6.0000e-004	3.7700e-003	8.7000e-004	5.6000e-004	1.4200e-003		13.2391	13.2391	9.0000e-005		13.2410
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	0.0724	0.0851	0.9183	2.6000e-003	0.2054	1.4600e-003	0.2068	0.0545	1.3600e-003	0.0558		200.9241	200.9241	9.3600e-003		201.1207
Total	**0.0757**	**0.1261**	**0.9520**	**2.7400e-003**	**0.2085**	**2.0600e-003**	**0.2106**	**0.0553**	**1.9200e-003**	**0.0573**		**214.1631**	**214.1631**	**9.4500e-003**		**214.3617**

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	0.1109	0.2502	1.1575	3.0200e-003	0.2039	3.5300e-003	0.2074	0.0544	3.2500e-003	0.0577		246.7011	246.7011	9.5200e-003		246.9009
Unmitigated	0.1109	0.2502	1.1575	3.0200e-003	0.2039	3.5300e-003	0.2074	0.0544	3.2500e-003	0.0577		246.7011	246.7011	9.5200e-003		246.9009

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	33.00	33.00	33.00	96,344	96,344
Total	33.00	33.00	33.00	96,344	96,344

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
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

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	lb/day										lb/day					
NaturalGas Mitigated	3.7000e-003	0.0337	0.0283	2.0000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003		40.4048	40.4048	7.7000e-004	7.4000e-004	40.6507
NaturalGas Unmitigated	4.3600e-003	0.0396	0.0333	2.4000e-004		3.0100e-003	3.0100e-003		3.0100e-003	3.0100e-003		47.5101	47.5101	9.1000e-004	8.7000e-004	47.7992

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	403.836	4.3600e-003	0.0396	0.0333	2.4000e-004		3.0100e-003	3.0100e-003		3.0100e-003	3.0100e-003		47.5101	47.5101	9.1000e-004	8.7000e-004	47.7992
Total		**4.3600e-003**	**0.0396**	**0.0333**	**2.4000e-004**		**3.0100e-003**	**3.0100e-003**		**3.0100e-003**	**3.0100e-003**		**47.5101**	**47.5101**	**9.1000e-004**	**8.7000e-004**	**47.7992**

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	0.343441	3.7000e-003	0.0337	0.0283	2.0000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003		40.4048	40.4048	7.7000e-004	7.4000e-004	40.6507
Total		**3.7000e-003**	**0.0337**	**0.0283**	**2.0000e-004**		**2.5600e-003**	**2.5600e-003**		**2.5600e-003**	**2.5600e-003**		**40.4048**	**40.4048**	**7.7000e-004**	**7.4000e-004**	**40.6507**

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	0.5059	2.0000e-005	2.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.0900e-003
Unmitigated	0.5059	2.0000e-005	2.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.0900e-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	0.0349					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4708					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2000e-004	2.0000e-005	2.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.0900e-003
Total	**0.5059**	**2.0000e-005**	**2.2800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.8100e-003**	**4.8100e-003**	**1.0000e-005**		**5.0900e-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	0.0349					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4708					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2000e-004	2.0000e-005	2.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.0900e-003
Total	**0.5059**	**2.0000e-005**	**2.2800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.8100e-003**	**4.8100e-003**	**1.0000e-005**		**5.0900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

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	22.00	1000sqft	5.00	22,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2018
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

Construction Phase - See Project Assumptions

Off-road Equipment - See Project Assumptions

Off-road Equipment - See Project Assumptions

Off-road Equipment - See Project Assumptions

Off-road Equipment - See Project Assumptions

Grading - See Project Assumptions

Trips and VMT - See Project Assumptions

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	33000	0
tblConstructionPhase	NumDays	18.00	64.00

tblConstructionPhase	NumDays	230.00	195.00
tblConstructionPhase	NumDays	8.00	22.00
tblConstructionPhase	NumDays	8.00	195.00
tblConstructionPhase	NumDays	18.00	22.00
tblConstructionPhase	NumDays	5.00	22.00
tblConstructionPhase	PhaseEndDate	6/28/2018	5/1/2018
tblConstructionPhase	PhaseEndDate	12/28/2018	4/1/2018
tblConstructionPhase	PhaseEndDate	8/1/2017	7/1/2017
tblConstructionPhase	PhaseEndDate	3/30/2018	4/1/2018
tblConstructionPhase	PhaseEndDate	5/31/2018	5/1/2018
tblConstructionPhase	PhaseEndDate	6/30/2017	7/1/2017
tblConstructionPhase	PhaseStartDate	4/2/2018	2/1/2018
tblConstructionPhase	PhaseStartDate	4/2/2018	7/1/2017
tblConstructionPhase	PhaseStartDate	7/2/2017	6/1/2017
tblConstructionPhase	PhaseStartDate	7/2/2017	7/1/2017
tblConstructionPhase	PhaseStartDate	5/2/2018	4/1/2018
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	AcresOfGrading	11.00	2.50
tblGrading	AcresOfGrading	11.00	2.50
tblGrading	MaterialExported	0.00	5,000.00
tblGrading	MaterialExported	0.00	5,000.00
tblLandUse	LotAcreage	0.51	5.00
tblOffRoadEquipment	HorsePower	78.00	255.00
tblOffRoadEquipment	HorsePower	78.00	162.00

tblOffRoadEquipment	HorsePower	78.00	162.00
tblOffRoadEquipment	HorsePower	205.00	174.00
tblOffRoadEquipment	HorsePower	81.00	174.00
tblOffRoadEquipment	HorsePower	226.00	97.00
tblOffRoadEquipment	HorsePower	8.00	255.00
tblOffRoadEquipment	HorsePower	8.00	255.00
tblOffRoadEquipment	LoadFactor	0.48	0.40
tblOffRoadEquipment	LoadFactor	0.48	0.38
tblOffRoadEquipment	LoadFactor	0.48	0.38
tblOffRoadEquipment	LoadFactor	0.50	0.41
tblOffRoadEquipment	LoadFactor	0.73	0.41
tblOffRoadEquipment	LoadFactor	0.29	0.37
tblOffRoadEquipment	LoadFactor	0.43	0.40
tblOffRoadEquipment	LoadFactor	0.43	0.40
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripNumber	625.00	4.00
tblTripsAndVMT	HaulingTripNumber	625.00	1,000.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00

tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	25.00	23.00
tblTripsAndVMT	WorkerTripNumber	33.00	30.00
tblTripsAndVMT	WorkerTripNumber	45.00	40.00

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					
2017	24.7868	226.1872	169.5978	0.2656	20.5621	13.0633	33.6253	10.4715	12.3263	22.7977	0.0000	26,210.9943	26,210.9943	4.8390	0.0000	26,312.6129
2018	23.3394	136.1511	109.7730	0.1736	7.2082	8.1377	15.3458	3.5420	7.7040	11.2460	0.0000	16,802.7773	16,802.7773	3.6468	0.0000	16,879.3593
Total	**48.1262**	**362.3383**	**279.3708**	**0.4391**	**27.7703**	**21.2009**	**48.9712**	**14.0135**	**20.0303**	**34.0437**	**0.0000**	**43,013.7715**	**43,013.7715**	**8.4857**	**0.0000**	**43,191.9722**

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					
2017	24.7868	226.1872	169.5978	0.2656	8.6637	13.0633	21.7269	4.1616	12.3263	16.4878	0.0000	26,210.9942	26,210.9942	4.8390	0.0000	26,312.6129
2018	23.3394	136.1511	109.7730	0.1736	3.0835	8.1377	11.2212	1.4222	7.7040	9.1262	0.0000	16,802.7773	16,802.7773	3.6468	0.0000	16,879.3593
Total	**48.1262**	**362.3383**	**279.3708**	**0.4391**	**11.7471**	**21.2009**	**32.9481**	**5.5838**	**20.0303**	**25.6140**	**0.0000**	**43,013.7715**	**43,013.7715**	**8.4857**	**0.0000**	**43,191.9722**

	ROG	NOx	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**	**57.70**	**0.00**	**32.72**	**60.15**	**0.00**	**24.76**	**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	0.5059	2.0000e-005	2.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.0900e-003
Energy	4.3600e-003	0.0396	0.0333	2.4000e-004		3.0100e-003	3.0100e-003		3.0100e-003	3.0100e-003		47.5101	47.5101	9.1000e-004	8.7000e-004	47.7992
Mobile	0.1177	0.2658	1.2093	2.8700e-003	0.2039	3.5400e-003	0.2074	0.0544	3.2600e-003	0.0577		234.8419	234.8419	9.5200e-003		235.0419
Total	**0.6280**	**0.3054**	**1.2449**	**3.1100e-003**	**0.2039**	**6.5600e-003**	**0.2104**	**0.0544**	**6.2800e-003**	**0.0607**		**282.3568**	**282.3568**	**0.0104**	**8.7000e-004**	**282.8462**

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	0.5059	2.0000e-005	2.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.0900e-003
Energy	3.7000e-003	0.0337	0.0283	2.0000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003		40.4048	40.4048	7.7000e-004	7.4000e-004	40.6507
Mobile	0.1177	0.2658	1.2093	2.8700e-003	0.2039	3.5400e-003	0.2074	0.0544	3.2600e-003	0.0577		234.8419	234.8419	9.5200e-003		235.0419
Total	**0.6273**	**0.2995**	**1.2399**	**3.0700e-003**	**0.2039**	**6.1100e-003**	**0.2100**	**0.0544**	**5.8300e-003**	**0.0603**		**275.2516**	**275.2516**	**0.0103**	**7.4000e-004**	**275.6977**

	ROG	NOx	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	0.11	1.94	0.40	1.29	0.00	6.86	0.21	0.00	7.17	0.74	0.00	2.52	2.52	1.34	14.94	2.53

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	6/1/2017	7/1/2017	5	22	
2	Grading	Grading	6/1/2017	7/1/2017	5	22	
3	Drainage Utilities Subgrade	Grading	7/1/2017	4/1/2018	5	195	
4	Building Construction	Building Construction	7/1/2017	4/1/2018	5	195	
5	Architectural Coating	Architectural Coating	2/1/2018	5/1/2018	5	64	
6	Paving	Paving	4/1/2018	5/1/2018	5	22	

Acres of Grading (Site Preparation Phase): 2.5

Acres of Grading (Grading Phase): 2.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 33,000; Non-Residential Outdoor: 11,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Air Compressors	1	8.00	255	0.40
Site Preparation	Concrete/Industrial Saws	1	4.00	81	0.73
Site Preparation	Generator Sets	1	8.00	84	0.74
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Plate Compactors	1	8.00	8	0.43

Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Skid Steer Loaders	1	4.00	64	0.37
Site Preparation	Sweepers/Scrubbers	1	4.00	64	0.46
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Air Compressors	1	8.00	162	0.38
Grading	Concrete/Industrial Saws	1	4.00	174	0.41
Grading	Excavators	1	8.00	162	0.38
Grading	Forklifts	1	8.00	89	0.20
Grading	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Grading	Plate Compactors	1	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Skid Steer Loaders	1	8.00	64	0.37
Grading	Sweepers/Scrubbers	1	4.00	64	0.46
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Drainage Utilities Subgrade	Air Compressors	2	8.00	162	0.38
Drainage Utilities Subgrade	Bore/Drill Rigs	1	8.00	174	0.41
Drainage Utilities Subgrade	Cranes	1	8.00	97	0.37
Drainage Utilities Subgrade	Excavators	1	8.00	162	0.38
Drainage Utilities Subgrade	Forklifts	1	8.00	89	0.20
Drainage Utilities Subgrade	Generator Sets	1	8.00	84	0.74
Drainage Utilities Subgrade	Graders	1	8.00	174	0.41
Drainage Utilities Subgrade	Plate Compactors	1	8.00	255	0.40
Drainage Utilities Subgrade	Pumps	1	4.00	84	0.74
Drainage Utilities Subgrade	Rubber Tired Dozers	1	8.00	255	0.40
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	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Drainage Utilities Subgrade	Trenchers	1	8.00	80	0.50
Drainage Utilities Subgrade	Welders	1	8.00	46	0.45
Building Construction	Air Compressors	3	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	2	8.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
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
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Forklifts	1	8.00	89	0.20
Paving	Graders	1	8.00	174	0.41
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Pumps	1	8.00	84	0.74
Paving	Rollers	1	8.00	80	0.38
Paving	Skid Steer Loaders	1	8.00	64	0.37
Paving	Surfacing Equipment	1	8.00	253	0.30
Paving	Sweepers/Scrubbers	1	4.00	64	0.46

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
Site Preparation	10	23.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	13	30.00	0.00	1,000.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Drainage Utilities Subgrade	18	40.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	9.00	4.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	10	25.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2017

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					6.1745	0.0000	6.1745	3.3281	0.0000	3.3281			0.0000			0.0000
Off-Road	4.4950	42.9732	29.1792	0.0428		2.4132	2.4132		2.2704	2.2704		4,394.3280	4,394.3280	0.8732		4,412.6644
Total	**4.4950**	**42.9732**	**29.1792**	**0.0428**	**6.1745**	**2.4132**	**8.5877**	**3.3281**	**2.2704**	**5.5985**		**4,394.3280**	**4,394.3280**	**0.8732**		**4,412.6644**

3.2 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.7000e-003	0.0469	0.0451	1.4000e-004	3.1700e-003	6.1000e-004	3.7800e-003	8.7000e-004	5.6000e-004	1.4300e-003		13.4382	13.4382	9.0000e-005		13.4402
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	0.0772	0.0962	0.8997	2.2500e-003	0.1889	1.3700e-003	0.1903	0.0501	1.2700e-003	0.0514		180.3541	180.3541	9.2600e-003		180.5485
Total	**0.0809**	**0.1431**	**0.9448**	**2.3900e-003**	**0.1921**	**1.9800e-003**	**0.1941**	**0.0510**	**1.8300e-003**	**0.0528**		**193.7923**	**193.7923**	**9.3500e-003**		**193.9887**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2877	0.0000	2.2877	1.2331	0.0000	1.2331			0.0000			0.0000
Off-Road	4.4950	42.9732	29.1792	0.0428		2.4132	2.4132		2.2704	2.2704	0.0000	4,394.3280	4,394.3280	0.8732		4,412.6644
Total	**4.4950**	**42.9732**	**29.1792**	**0.0428**	**2.2877**	**2.4132**	**4.7008**	**1.2331**	**2.2704**	**3.5035**	**0.0000**	**4,394.3280**	**4,394.3280**	**0.8732**		**4,412.6644**

3.2 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.7000e-003	0.0469	0.0451	1.4000e-004	3.1700e-003	6.1000e-004	3.7800e-003	8.7000e-004	5.6000e-004	1.4300e-003		13.4382	13.4382	9.0000e-005		13.4402
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	0.0772	0.0962	0.8997	2.2500e-003	0.1889	1.3700e-003	0.1903	0.0501	1.2700e-003	0.0514		180.3541	180.3541	9.2600e-003		180.5485
Total	**0.0809**	**0.1431**	**0.9448**	**2.3900e-003**	**0.1921**	**1.9800e-003**	**0.1941**	**0.0510**	**1.8300e-003**	**0.0528**		**193.7923**	**193.7923**	**9.3500e-003**		**193.9887**

3.3 Grading - 2017

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					6.1745	0.0000	6.1745	3.3281	0.0000	3.3281			0.0000			0.0000
Off-Road	5.2966	51.2325	38.2461	0.0514		3.0131	3.0131		2.8213	2.8213		5,135.5489	5,135.5489	1.2032		5,160.8153
Total	**5.2966**	**51.2325**	**38.2461**	**0.0514**	**6.1745**	**3.0131**	**9.1877**	**3.3281**	**2.8213**	**6.1494**		**5,135.5489**	**5,135.5489**	**1.2032**		**5,160.8153**

3.3 Grading - 2017

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	0.9258	11.7242	11.2710	0.0339	0.7921	0.1534	0.9454	0.2169	0.1411	0.3580		3,359.5532	3,359.5532	0.0236		3,360.0495
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	0.1007	0.1255	1.1735	2.9300e-003	0.2464	1.7900e-003	0.2482	0.0654	1.6500e-003	0.0670		235.2444	235.2444	0.0121		235.4981
Total	**1.0265**	**11.8497**	**12.4445**	**0.0368**	**1.0385**	**0.1552**	**1.1937**	**0.2823**	**0.1427**	**0.4250**		**3,594.7977**	**3,594.7977**	**0.0357**		**3,595.5476**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2877	0.0000	2.2877	1.2331	0.0000	1.2331			0.0000			0.0000
Off-Road	5.2966	51.2325	38.2461	0.0514		3.0131	3.0131		2.8213	2.8213	0.0000	5,135.5489	5,135.5489	1.2032		5,160.8153
Total	**5.2966**	**51.2325**	**38.2461**	**0.0514**	**2.2877**	**3.0131**	**5.3008**	**1.2331**	**2.8213**	**4.0543**	**0.0000**	**5,135.5489**	**5,135.5489**	**1.2032**		**5,160.8153**

3.3 Grading - 2017

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	0.9258	11.7242	11.2710	0.0339	0.7921	0.1534	0.9454	0.2169	0.1411	0.3580		3,359.5532	3,359.5532	0.0236		3,360.0495
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	0.1007	0.1255	1.1735	2.9300e-003	0.2464	1.7900e-003	0.2482	0.0654	1.6500e-003	0.0670		235.2444	235.2444	0.0121		235.4981
Total	**1.0265**	**11.8497**	**12.4445**	**0.0368**	**1.0385**	**0.1552**	**1.1937**	**0.2823**	**0.1427**	**0.4250**		**3,594.7977**	**3,594.7977**	**0.0357**		**3,595.5476**

3.4 Drainage Utilities Subgrade - 2017

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	7.9051	71.3498	53.1807	0.0727		4.3683	4.3683		4.0994	4.0994		7,215.8487	7,215.8487	1.6985		7,251.5165
Total	**7.9051**	**71.3498**	**53.1807**	**0.0727**	**6.5523**	**4.3683**	**10.9207**	**3.3675**	**4.0994**	**7.4669**		**7,215.8487**	**7,215.8487**	**1.6985**		**7,251.5165**

3.4 Drainage Utilities Subgrade - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.2000e-004	5.2900e-003	5.0900e-003	2.0000e-005	4.9000e-004	7.0000e-005	5.6000e-004	1.3000e-004	6.0000e-005	1.9000e-004		1.5161	1.5161	1.0000e-005		1.5163
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	0.1343	0.1673	1.5647	3.9100e-003	0.3286	2.3900e-003	0.3310	0.0872	2.2000e-003	0.0894		313.6593	313.6593	0.0161		313.9975
Total	**0.1347**	**0.1726**	**1.5698**	**3.9300e-003**	**0.3291**	**2.4600e-003**	**0.3315**	**0.0873**	**2.2600e-003**	**0.0896**		**315.1754**	**315.1754**	**0.0161**		**315.5138**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4276	0.0000	2.4276	1.2477	0.0000	1.2477			0.0000			0.0000
Off-Road	7.9051	71.3498	53.1807	0.0727		4.3683	4.3683		4.0994	4.0994	0.0000	7,215.8487	7,215.8487	1.6985		7,251.5165
Total	**7.9051**	**71.3498**	**53.1807**	**0.0727**	**2.4276**	**4.3683**	**6.7960**	**1.2477**	**4.0994**	**5.3471**	**0.0000**	**7,215.8487**	**7,215.8487**	**1.6985**		**7,251.5165**

3.4 Drainage Utilities Subgrade - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.2000e-004	5.2900e-003	5.0900e-003	2.0000e-005	4.9000e-004	7.0000e-005	5.6000e-004	1.3000e-004	6.0000e-005	1.9000e-004		1.5161	1.5161	1.0000e-005		1.5163
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	0.1343	0.1673	1.5647	3.9100e-003	0.3286	2.3900e-003	0.3310	0.0872	2.2000e-003	0.0894		313.6593	313.6593	0.0161		313.9975
Total	**0.1347**	**0.1726**	**1.5698**	**3.9300e-003**	**0.3291**	**2.4600e-003**	**0.3315**	**0.0873**	**2.2600e-003**	**0.0896**		**315.1754**	**315.1754**	**0.0161**		**315.5138**

3.4 Drainage Utilities Subgrade - 2018

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	6.8939	62.2231	51.3204	0.0727		3.7148	3.7148		3.4883	3.4883		7,135.7105	7,135.7105	1.6747		7,170.8801
Total	**6.8939**	**62.2231**	**51.3204**	**0.0727**	**6.5523**	**3.7148**	**10.2672**	**3.3675**	**3.4883**	**6.8558**		**7,135.7105**	**7,135.7105**	**1.6747**		**7,170.8801**

3.4 Drainage Utilities Subgrade - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.0000e-004	4.7700e-003	4.9500e-003	2.0000e-005	9.0000e-004	7.0000e-005	9.7000e-004	2.3000e-004	6.0000e-005	2.9000e-004		1.4901	1.4901	1.0000e-005		1.4904
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	0.1220	0.1527	1.4131	3.9100e-003	0.3286	2.3400e-003	0.3309	0.0872	2.1700e-003	0.0893		301.8784	301.8784	0.0150		302.1929
Total	**0.1224**	**0.1575**	**1.4180**	**3.9300e-003**	**0.3295**	**2.4100e-003**	**0.3319**	**0.0874**	**2.2300e-003**	**0.0896**		**303.3685**	**303.3685**	**0.0150**		**303.6833**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4276	0.0000	2.4276	1.2477	0.0000	1.2477			0.0000			0.0000
Off-Road	6.8939	62.2231	51.3204	0.0727		3.7148	3.7148		3.4883	3.4883	0.0000	7,135.7105	7,135.7105	1.6747		7,170.8801
Total	**6.8939**	**62.2231**	**51.3204**	**0.0727**	**2.4276**	**3.7148**	**6.1425**	**1.2477**	**3.4883**	**4.7359**	**0.0000**	**7,135.7105**	**7,135.7105**	**1.6747**		**7,170.8801**

3.4 Drainage Utilities Subgrade - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.0000e-004	4.7700e-003	4.9500e-003	2.0000e-005	9.0000e-004	7.0000e-005	9.7000e-004	2.3000e-004	6.0000e-005	2.9000e-004		1.4901	1.4901	1.0000e-005		1.4904
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	0.1220	0.1527	1.4131	3.9100e-003	0.3286	2.3400e-003	0.3309	0.0872	2.1700e-003	0.0893		301.8784	301.8784	0.0150		302.1929
Total	**0.1224**	**0.1575**	**1.4180**	**3.9300e-003**	**0.3295**	**2.4100e-003**	**0.3319**	**0.0874**	**2.2300e-003**	**0.0896**		**303.3685**	**303.3685**	**0.0150**		**303.6833**

3.5 Building Construction - 2017

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	5.7733	48.0763	33.1083	0.0536		3.1034	3.1034		2.9831	2.9831		5,196.3124	5,196.3124	0.9987		5,217.2842
Total	**5.7733**	**48.0763**	**33.1083**	**0.0536**		**3.1034**	**3.1034**		**2.9831**	**2.9831**		**5,196.3124**	**5,196.3124**	**0.9987**		**5,217.2842**

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.2000e-004	5.2900e-003	5.0900e-003	2.0000e-005	4.9000e-004	7.0000e-005	5.6000e-004	1.3000e-004	6.0000e-005	1.9000e-004		1.5161	1.5161	1.0000e-005		1.5163
Vendor	0.0441	0.3470	0.5672	9.5000e-004	0.0266	5.0300e-003	0.0316	7.5800e-003	4.6200e-003	0.0122		93.1016	93.1016	7.2000e-004		93.1166
Worker	0.0302	0.0377	0.3521	8.8000e-004	0.0739	5.4000e-004	0.0745	0.0196	5.0000e-004	0.0201		70.5733	70.5733	3.6200e-003		70.6494
Total	**0.0747**	**0.3900**	**0.9243**	**1.8500e-003**	**0.1010**	**5.6400e-003**	**0.1066**	**0.0273**	**5.1800e-003**	**0.0325**		**165.1910**	**165.1910**	**4.3500e-003**		**165.2823**

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	5.7733	48.0763	33.1083	0.0536		3.1034	3.1034		2.9831	2.9831	0.0000	5,196.3124	5,196.3124	0.9987		5,217.2842
Total	**5.7733**	**48.0763**	**33.1083**	**0.0536**		**3.1034**	**3.1034**		**2.9831**	**2.9831**	**0.0000**	**5,196.3124**	**5,196.3124**	**0.9987**		**5,217.2842**

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.2000e-004	5.2900e-003	5.0900e-003	2.0000e-005	4.9000e-004	7.0000e-005	5.6000e-004	1.3000e-004	6.0000e-005	1.9000e-004		1.5161	1.5161	1.0000e-005		1.5163
Vendor	0.0441	0.3470	0.5672	9.5000e-004	0.0266	5.0300e-003	0.0316	7.5800e-003	4.6200e-003	0.0122		93.1016	93.1016	7.2000e-004		93.1166
Worker	0.0302	0.0377	0.3521	8.8000e-004	0.0739	5.4000e-004	0.0745	0.0196	5.0000e-004	0.0201		70.5733	70.5733	3.6200e-003		70.6494
Total	**0.0747**	**0.3900**	**0.9243**	**1.8500e-003**	**0.1010**	**5.6400e-003**	**0.1066**	**0.0273**	**5.1800e-003**	**0.0325**		**165.1910**	**165.1910**	**4.3500e-003**		**165.2823**

3.5 Building Construction - 2018

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	5.0585	42.8969	32.1558	0.0536		2.6429	2.6429		2.5432	2.5432		5,158.9654	5,158.9654	0.9662		5,179.2564
Total	**5.0585**	**42.8969**	**32.1558**	**0.0536**		**2.6429**	**2.6429**		**2.5432**	**2.5432**		**5,158.9654**	**5,158.9654**	**0.9662**		**5,179.2564**

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.0000e-004	4.7700e-003	4.9500e-003	2.0000e-005	9.0000e-004	7.0000e-005	9.7000e-004	2.3000e-004	6.0000e-005	2.9000e-004		1.4901	1.4901	1.0000e-005		1.4904
Vendor	0.0414	0.3133	0.5431	9.4000e-004	0.0266	4.6700e-003	0.0312	7.5700e-003	4.2900e-003	0.0119		91.5011	91.5011	7.0000e-004		91.5159
Worker	0.0275	0.0344	0.3179	8.8000e-004	0.0739	5.3000e-004	0.0745	0.0196	4.9000e-004	0.0201		67.9226	67.9226	3.3700e-003		67.9934
Total	**0.0692**	**0.3524**	**0.8659**	**1.8400e-003**	**0.1014**	**5.2700e-003**	**0.1066**	**0.0274**	**4.8400e-003**	**0.0323**		**160.9139**	**160.9139**	**4.0800e-003**		**160.9996**

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	5.0585	42.8969	32.1558	0.0536		2.6429	2.6429		2.5432	2.5432	0.0000	5,158.9654	5,158.9654	0.9662		5,179.2564
Total	**5.0585**	**42.8969**	**32.1558**	**0.0536**		**2.6429**	**2.6429**		**2.5432**	**2.5432**	**0.0000**	**5,158.9654**	**5,158.9654**	**0.9662**		**5,179.2564**

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.0000e-004	4.7700e-003	4.9500e-003	2.0000e-005	9.0000e-004	7.0000e-005	9.7000e-004	2.3000e-004	6.0000e-005	2.9000e-004		1.4901	1.4901	1.0000e-005		1.4904
Vendor	0.0414	0.3133	0.5431	9.4000e-004	0.0266	4.6700e-003	0.0312	7.5700e-003	4.2900e-003	0.0119		91.5011	91.5011	7.0000e-004		91.5159
Worker	0.0275	0.0344	0.3179	8.8000e-004	0.0739	5.3000e-004	0.0745	0.0196	4.9000e-004	0.0201		67.9226	67.9226	3.3700e-003		67.9934
Total	**0.0692**	**0.3524**	**0.8659**	**1.8400e-003**	**0.1014**	**5.2700e-003**	**0.1066**	**0.0274**	**4.8400e-003**	**0.0323**		**160.9139**	**160.9139**	**4.0800e-003**		**160.9996**

3.6 Architectural Coating - 2018

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	7.9664					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**8.2650**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.6 Architectural Coating - 2018

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	6.1000e-003	7.6300e-003	0.0707	2.0000e-004	0.0164	1.2000e-004	0.0166	4.3600e-003	1.1000e-004	4.4700e-003		15.0939	15.0939	7.5000e-004		15.1097
Total	**6.1000e-003**	**7.6300e-003**	**0.0707**	**2.0000e-004**	**0.0164**	**1.2000e-004**	**0.0166**	**4.3600e-003**	**1.1000e-004**	**4.4700e-003**		**15.0939**	**15.0939**	**7.5000e-004**		**15.1097**

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	7.9664					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**8.2650**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.6 Architectural Coating - 2018

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	6.1000e-003	7.6300e-003	0.0707	2.0000e-004	0.0164	1.2000e-004	0.0166	4.3600e-003	1.1000e-004	4.4700e-003		15.0939	15.0939	7.5000e-004		15.1097
Total	**6.1000e-003**	**7.6300e-003**	**0.0707**	**2.0000e-004**	**0.0164**	**1.2000e-004**	**0.0166**	**4.3600e-003**	**1.1000e-004**	**4.4700e-003**		**15.0939**	**15.0939**	**7.5000e-004**		**15.1097**

3.7 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8443	28.3701	21.1608	0.0358		1.6196	1.6196		1.5129	1.5129		3,545.3947	3,545.3947	0.9498		3,565.3396
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.8443**	**28.3701**	**21.1608**	**0.0358**		**1.6196**	**1.6196**		**1.5129**	**1.5129**		**3,545.3947**	**3,545.3947**	**0.9498**		**3,565.3396**

3.7 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.5800e-003	0.0423	0.0439	1.4000e-004	3.1700e-003	6.1000e-004	3.7700e-003	8.7000e-004	5.6000e-004	1.4200e-003		13.2079	13.2079	9.0000e-005		13.2099
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	0.0763	0.0954	0.8832	2.4400e-003	0.2054	1.4600e-003	0.2068	0.0545	1.3600e-003	0.0558		188.6740	188.6740	9.3600e-003		188.8706
Total	**0.0799**	**0.1378**	**0.9271**	**2.5800e-003**	**0.2085**	**2.0700e-003**	**0.2106**	**0.0553**	**1.9200e-003**	**0.0573**		**201.8819**	**201.8819**	**9.4500e-003**		**202.0805**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8443	28.3701	21.1608	0.0358		1.6196	1.6196		1.5129	1.5129	0.0000	3,545.3947	3,545.3947	0.9498		3,565.3396
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.8443**	**28.3701**	**21.1608**	**0.0358**		**1.6196**	**1.6196**		**1.5129**	**1.5129**	**0.0000**	**3,545.3947**	**3,545.3947**	**0.9498**		**3,565.3396**

3.7 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.5800e-003	0.0423	0.0439	1.4000e-004	3.1700e-003	6.1000e-004	3.7700e-003	8.7000e-004	5.6000e-004	1.4200e-003		13.2079	13.2079	9.0000e-005		13.2099
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	0.0763	0.0954	0.8832	2.4400e-003	0.2054	1.4600e-003	0.2068	0.0545	1.3600e-003	0.0558		188.6740	188.6740	9.3600e-003		188.8706
Total	**0.0799**	**0.1378**	**0.9271**	**2.5800e-003**	**0.2085**	**2.0700e-003**	**0.2106**	**0.0553**	**1.9200e-003**	**0.0573**		**201.8819**	**201.8819**	**9.4500e-003**		**202.0805**

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	0.1177	0.2658	1.2093	2.8700e-003	0.2039	3.5400e-003	0.2074	0.0544	3.2600e-003	0.0577		234.8419	234.8419	9.5200e-003		235.0419
Unmitigated	0.1177	0.2658	1.2093	2.8700e-003	0.2039	3.5400e-003	0.2074	0.0544	3.2600e-003	0.0577		234.8419	234.8419	9.5200e-003		235.0419

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	33.00	33.00	33.00	96,344	96,344
Total	33.00	33.00	33.00	96,344	96,344

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
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

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	lb/day										lb/day					
NaturalGas Mitigated	3.7000e-003	0.0337	0.0283	2.0000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003		40.4048	40.4048	7.7000e-004	7.4000e-004	40.6507
NaturalGas Unmitigated	4.3600e-003	0.0396	0.0333	2.4000e-004		3.0100e-003	3.0100e-003		3.0100e-003	3.0100e-003		47.5101	47.5101	9.1000e-004	8.7000e-004	47.7992

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	403.836	4.3600e-003	0.0396	0.0333	2.4000e-004		3.0100e-003	3.0100e-003		3.0100e-003	3.0100e-003		47.5101	47.5101	9.1000e-004	8.7000e-004	47.7992
Total		**4.3600e-003**	**0.0396**	**0.0333**	**2.4000e-004**		**3.0100e-003**	**3.0100e-003**		**3.0100e-003**	**3.0100e-003**		**47.5101**	**47.5101**	**9.1000e-004**	**8.7000e-004**	**47.7992**

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	0.343441	3.7000e-003	0.0337	0.0283	2.0000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003		40.4048	40.4048	7.7000e-004	7.4000e-004	40.6507
Total		**3.7000e-003**	**0.0337**	**0.0283**	**2.0000e-004**		**2.5600e-003**	**2.5600e-003**		**2.5600e-003**	**2.5600e-003**		**40.4048**	**40.4048**	**7.7000e-004**	**7.4000e-004**	**40.6507**

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	0.5059	2.0000e-005	2.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.0900e-003
Unmitigated	0.5059	2.0000e-005	2.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.0900e-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	0.0349					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4708					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2000e-004	2.0000e-005	2.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.0900e-003
Total	**0.5059**	**2.0000e-005**	**2.2800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.8100e-003**	**4.8100e-003**	**1.0000e-005**		**5.0900e-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	0.0349					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4708					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2000e-004	2.0000e-005	2.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.0900e-003
Total	**0.5059**	**2.0000e-005**	**2.2800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.8100e-003**	**4.8100e-003**	**1.0000e-005**		**5.0900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

APPENDIX B

Biological Resources Assessment Report

ESA

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October 20, 2016

John T. Bekmanis
Black and Veatch
300 Rancheros Drive, Suite 250
San Marcos, CA 92069

Subject: Biological Technical Letter Report for the Phase I Agricultural Reuse and Salt Reduction Project, City of Escondido, San Diego County, California

Dear Mr. Bekmanis:

This Biological Technical Letter Report for the Membrane Filtration/Reverse Osmosis (MFRO) Facility for Agriculture (proposed project) located at 1201 East Washington Avenue (project site) documents the existing biological conditions on the project site, a discussion of the sensitive biological resources with a potential to occur, an analysis of potential impacts to biological resources as a result of project implementation, and recommendations to avoid or minimize impacts below a level of significance. Methodology used for this report includes a review of available literature and databases, and a field survey conducted within and adjacent to the project site.

Project Location

The project site is generally located east of Interstate 15, in the City of Escondido (City), approximately 15 miles from the coast in northern San Diego County (County) (**Figure 1**). The project site totals approximately 4.50 acres and is bordered to the north by East Washington Avenue and a mix of commercial and residential development, to the west by North Ash Street which includes the Washington Square Shopping Center and other commercial uses, to the south by the concrete-lined Escondido Creek Flood Control Channel, and to the east by The Springs of Escondido, a retirement community (**Figure 2**). The majority of Escondido is developed with urban infrastructure; the project site itself is centrally located within the City, surrounded by development and urban infrastructure.

The project 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 northwestern San Diego County (SANDAG, 2003). The City has prepared a draft subarea plan under the MHCP, 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 (City of Escondido, 2001a). A public review draft of the subarea plan was released in 2001. The Project site is not located within the City's MHCP focused planning areas, which are lands proposed to be dedicated for open space and habitat conservation.

Project Background

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. The 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 proposes to construct and operate the MFRO Facility to provide water for agricultural use. The MFRO Facility would provide advanced treatment for Title 22 quality reuse water produced at the HARRF. The facility would utilize membrane filtration (i.e., 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.

The project would also assist in off-loading the City's ocean outfall by reducing the amount of water discharged to the Ocean from the HAARF. The existing land outfall is nearing flow capacity. The MFRO Facility would treat and distribute the recycled water to agricultural users and reusable water to homes. Thereby, redirecting water via reuse and reducing the flow to the existing outfall.

Project Description

The MFRO Facility would provide advanced treatment for Title 22 quality reuse water produced at the HARRF. The facility would utilize membrane filtration (i.e., 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 commercial/industrial-like buildings, the MFRO Process Building, to house the MFRO equipment, pumps, electrical rooms, control rooms, and meeting rooms that includes a restroom, kitchenette, and janitor closet. The Chemical Building would house the chemical storage and transfer pumps. Because the project site is located within a commercially zoned area, a Conditional Use Permit would be required 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.

The MFRO 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 MFRO Facility would be designed to accommodate installation of additional equipment in the future that would provide an additional 1.0 mgd of production capacity. Each component is further described below.

Influent Pipeline

A newly constructed 18,720 feet long 24-inch diameter pipeline would convey the HARRF Title 22 recycled water to the MFRO Facility. The project would connect to the existing influent pipeline located adjacent to the

Escondido Creek concrete-lined Flood Control Channel along the southern side of the project site (Recycled Water Easterly Main Extension Project). Exposed influent piping would be located adjacent to the surge tank. The piping would include the influent supply pipeline for the MF Influent Tank, the storm flow bypass pipeline to the Product Water Tank, and the Title 22 recycled water bypass and RO permeate pipelines to the Product Water Tank. The Title 22 recycled water bypass and RO permeate pipelines would blend to provide the desired water quality for the agriculture users. Each pipe train would include an isolation valve, motor operated valve, flow meter, combination air valves, and a pressure reducing valve.

Facility Buildings

The process building would be approximately 21,660 square feet with dimensions of approximately 190 feet long by 114 feet wide. The building would be divided into an equipment room to house the MFRO equipment, electrical room, control room, and administration meeting room. Two restrooms would also be provided. All pumps would be located indoors to provide appropriate noise attenuation and to address potential noise concerns. Piping within the building, where the mechanical piping leaves a process to be conveyed to another process, would be located in a grating covered concrete pipe trench.

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 following chemicals, listed in **Table-1**, would be used for the proposed project:

TABLE 1
CHEMICAL STORAGE

Chemical	Hazard Rating	Number / Storage Type	Volume (gallons)	Maximum Allowable Quantity	Maximum Allowable Quantity Exceeded?	Days of Storage (avg/max)	Number of Pumps/Pump Type
Sodium Hypochlorite (Disinfectant)	Health Hazard – Corrosive	1 Vertical, Cylindrical, FRP Tank	5,700	500 gallons	Yes	45/27	3(2 duty, 1 standby) / 0.2 to 5.6 gph, peristaltic
Liquid Ammonium Sulfate (Disinfectant)	None	1 Vertical, Cylindrical, FRP Tank	850	None	No	31/14	2(1 duty, 1 standby) / 0.03 to 1.48 gph, peristaltic
Sulfuric Acid (pH Control)[1]	Physical – Class 2 Water Reactive	1 Vertical, Cylindrical, Lined Steel Tank	3,200	50 pounds (3.2 gallons of 93% sulfuric acid)	Yes[2]	56/27	2(1 duty, 1 standby) / 0.3 to 5 gph, motorized diaphragm
Sodium Bisulfite (pH Control)	Health Hazard – Corrosive	1 Vertical, Cylindrical, FRP Tank	1,000	500 gallons	No	30/30	2 (1 duty, 1 standby) / 0.3 to 1.4 gph, peristaltic
Antiscalant	None	1 Vertical, Cylindrical, FRP Tank	400	None	No	58/35	2(1 duty, 1 standby) / 0.02 to 0.5 gph, motorized diaphragm
Sodium Hydroxide (Membrane	Health Hazard – Corrosive	1 Vertical, Cylindrical, Carbon Steel	5,500	500 gallons	Yes	35/26	2(1 duty, 1 standby) / 0.4 to 8.8 gph,

Chemical	Hazard Rating	Number / Storage Type	Volume (gallons)	Maximum Allowable Quantity	Maximum Allowable Quantity Exceeded?	Days of Storage (avg/max)	Number of Pumps/Pump Type
cleaning and neutralization and pH and alkalinity control)		Tank					motorized diaphragm
Calcium Chloride (Increase hardness)	None	1 Vertical, Flat bottom FRP Tank	8,000	None	No	35/35	2 (1 duty, 1 standby) / 9.5 gph, peristaltic
Citric Acid (Membrane cleaning and neutralization)	None	1 tote	300	None	No	-	2 (1 duty, 1 standby)
Proprietary RO Base (Membrane cleaning)	Unknown	1 tote	300	Unknown	Unknown	-	2 (1 duty, 1 standby)

NOTES:
1. Storage of sulfuric acid in amounts greater than 25 tons (3,247 gallons of 93% sulfuric acid) requires a detached building.
2. Sulfuric acid storage amount exceeds the maximum allowable quantity, thus it is subject to the requirements in Chapter 50 of the IFC. However, the storage amount does not exceed 25 tons, thus a detached building is not required.
SOURCE: Black and Veatch, 2016.

The chemical areas in the Chemical Storage Building would be separated into acids and bases such that incompatible chemicals are kept separate. There would be two separate areas for the basic chemicals and two containment areas for the acidic chemicals. These areas would be oriented such that a noncombustible partition could be installed to keep them separate. The sulfuric acid would be stored in the Chemical Storage Building in a dedicated room. Table-1 lists the chemical hazard rating and the maximum allowable storage quantity per the Fire Code.

Buildings and structures would be approximately 31 feet to top of roof ridgeline. Tanks would be located on the southwestern portion of the site with maximum heights of 30 feet. Buildings and other onsite facilities would be setback from the property line per General Commercial Development Standard setback criteria. The proposed buildings would have stucco, aluminum window framing, and standing seam metal roof.

MF/UF Influent Tank

A 300,000 gallon feed tank (50-feet diameter, 25-feet tall, with the potential to be partially buried 10 feet below finished grade) 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.

Surge Tank

Surge mitigation improvements would include a surge tank with supporting compressed air system. The surge tank would control surge pressures in the 24-inch high service pump discharge transmission pipeline. The steel pressure tank would be approximately 2,150 cubic feet. It would be located outdoors adjacent to the Interprocess

Storage Tank. The air compressors would be located in the Chemical Storage Building and would use food-grade lubrication.

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 160,000 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 40-feet in diameter and 20-feet tall, with the potential to be partially buried 10 feet below finished grade.

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 train 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 shut down 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 inside the Process Building:

- 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 pre-stressed 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 diameter and 30-feet tall, with the potential to be partially buried 10 feet below finished grade. The product water tank would provide a total useable storage volume of approximately 820,000 gallons.

Onsite Pipeline Corridor

Pipelines entering the project site from the channel or south side include the HARRF reuse influent pipeline, brine/reject waste return pipeline, agriculture supply pipeline, storm drain, and fiber optic conduit. Potable water, electric and gas would enter from East Washington Avenue. All process piping between buildings would be buried within a trench. Chemical feed dual wall (double containment) piping between the buildings would be located in a grating covered concrete pipe trench.

Brine Waste Pipeline

MFRO treatment process waste streams include MF/UF backwash, RO concentrate, and RO clean in place (CIP) that would be collected and conveyed back to the HARRF outfall through an existing 16-inch brine pipeline.

Storm Drain

An existing 69 inch storm drain is located in North Ash Street with a 24 inch branch to a curb inlet at the corner of North Ash Street and East Washington Avenue. The Escondido Creek concrete-lined Flood Control Channel drainage channel is also located south of the project site. The project would include an onsite storm water pond 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. The project would include one connection to the Escondido Creek Flood Control Channel drainage channel to convey water from the stormwater pond.

Tank Overflow/Drain Pipelines

A second connection would be for the tank overflow/drain pipelines. Each tank would have an overflow and drain pipeline, and the pipelines would combine together into a single pipeline for connection to the Escondido Creek Flood Control Channel.

Sanitary Sewer

Waste streams including strainer backwash, MF/UF CIP neutralized waste and RO flush waste, as well as sanitary sewer waste that would be discharged to a proposed onsite waste equalization wetwell prior to discharge to the sanitary sewer and conveyed to the HARRF for treatment. The proposed sewer system would convey wastewater flows to the existing 27-inch pipe located on the north side of the channel. 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 City's Hogback Reservoir located on a hilltop east of the City limits in unincorporated San Diego County south of Mountain View Drive 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. The engine generator would provide standby power to necessary electrical and controls equipment, security systems, influent control valves, Product Water Pump Station, RO flush systems, and electrical rooms HVAC systems when the electric utility is not available. The engine-generator package would be 60 feet long, 13 feet wide and 18 feet high. The engine-generator enclosure is designed to meet the City's Municipal Code sound thresholds at the property line. The exhaust particulate filter/silencer would be sized to meet San Diego County Air Pollutions Control District (SDCAPCD). The exhaust particulate filter/silencer would be regenerative and provide the required sound requirements at property lines for the receiving land use. The engine-generator would only be operated during a loss of power. However, it would be exercised on a monthly basis during business hours.

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 at the property line for the receiving land use. As described above, the engine-generator would only be used in an emergency in the event electricity is not provided to the site, and once a month for exercise recommended by the manufacturer. The engine-generator enclosure is designed to meet the City's Municipal Code sound thresholds at the property line.

Site Access

Facility site access would be provided from two driveways along East Washington Avenue as shown on the site plan. Two secured entrance gates would be provided. The gates would be setback approximately 20-feet for turn-off parking.

Security

Wall and Fencing

The proposed project would include security walls and fencing. The existing chain link fence along the property line would be knocked down and replaced with 6-foot high steel fencing with vertical bars and top pickets. The ornamental fencing would be placed along the southern boundary and along North Ash Street and East Washington Avenue. The existing wooden fence between the project site and residential property to the east would be demolished and replaced with a new 6-foot concrete masonry unit (CMU) block wall.

Security System

A security system would be provided including secured plan entrances and strategically placed fixed-view security cameras. The plant entrances would be equipped with a security camera and an electric gate requiring an access code and/or personnel badge scanner for entry. Cameras would also be installed near the rooflines of the MFRO Process and Chemical Storage Buildings to monitor the entrance to the opposing structures. Additional fixed-view security cameras would be placed on the south side of the MFRO Process Building where permanent outdoor equipment may be monitored.

Landscaping

The proposed project may remove existing trees onsite and along North Ash Street and East Washington Avenue. New perimeter ornamental landscaping would buffer and minimize views the proposed facility components and consist of low maintenance, low demand and fast-growing plantings including trees. 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 the landscape design.

Lighting

The proposed project would include dark bronze pole-mounted and building-mounted light-emitting diode (LED) lights in the facility. All pole-mounted lights would be 25 feet above grade. The outdoor lighting design would restrict any direct distribution of light beyond the site boundaries. Lighting would be in conformance with Title 24, of the California Code of Regulations and the City's Lighting Ordinance (Chapter 33, Article 35, Sec. 33-713).

Project Construction

Project construction is anticipated to be approximately 11 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-four maximum daily truck trips are anticipated for exporting soil. Soil hauling would occur over approximately one month. 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 disposed of at an appropriate permitted disposal site depending on the type of material. 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 site preparation and grading, 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

Multiple tanks and vaults would be constructed on site. Tank excavations would be limited to a depth of 12 feet below finished grade. The maximum width for tank excavation would be approximately 92 feet in diameter. Groundwater is approximately 15 feet below finished grade. If groundwater is encountered during construction, dewatering would be required. Groundwater would be disposed of to the existing City sewer for treatment.

Building Foundations

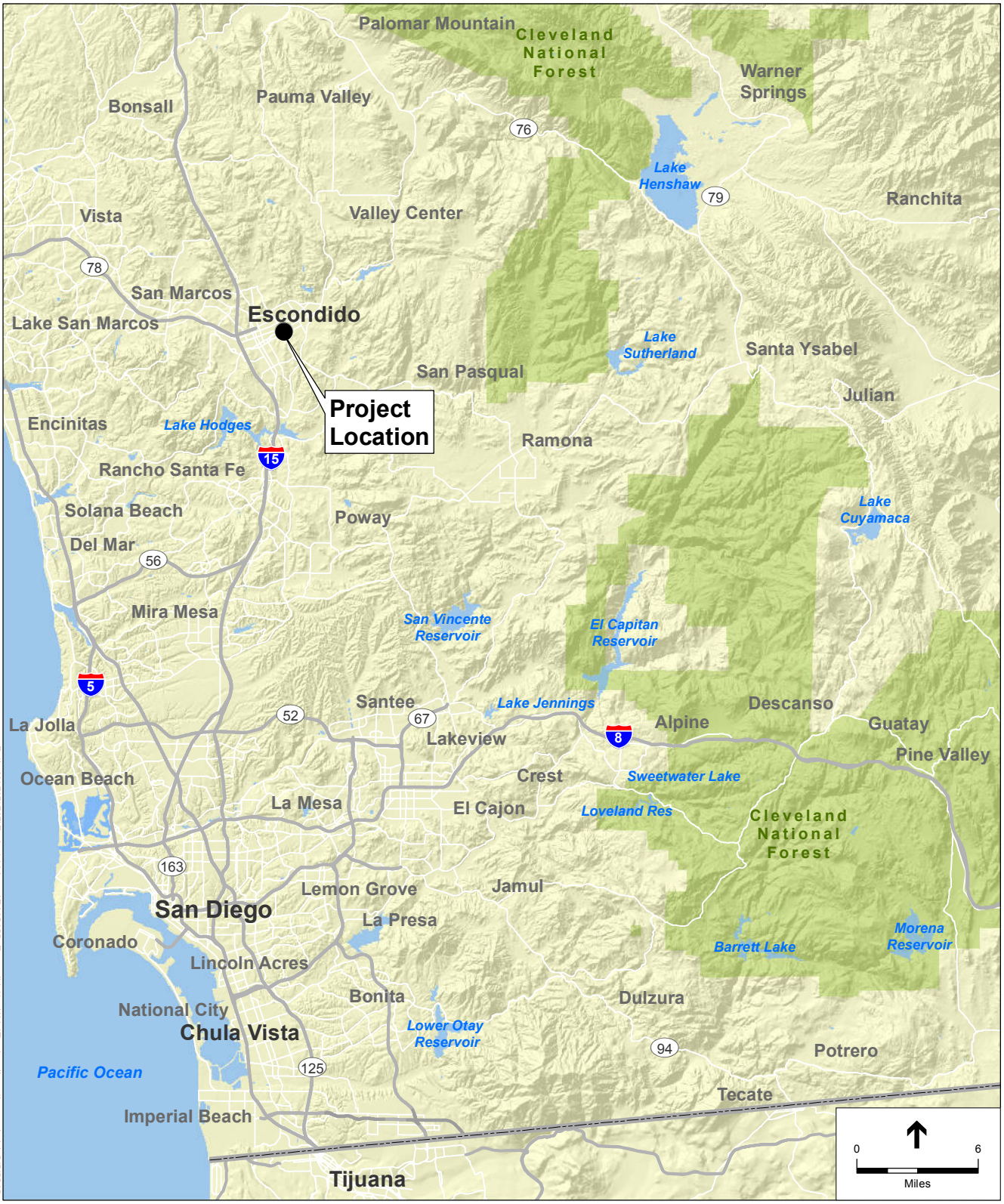
Slabs on grade would be supported with a six-inch layer of untreated aggregate base overlain by a ten-millimeter thick impermeable plastic membrane. The tank and building foundations would be supported on three-feet of geogrid reinforced soil (geogrid spaced at 12-inch intervals in the soil). Onsite soils could be used for fill, compacted to 90% of its maximum dry density.

Traffic Control Plan

A Traffic Control Plan (TCP) would be developed with both the CALTRANS Manual of Traffic Control Devices for Construction and Maintenance Work Zones and the Standard Specifications for Public Works Construction, latest edition. The TCP would describe work hours, haul routes, work area delineation, traffic control and flagging. The plan would aim to limit lane closures during peak traffic hours to the extent possible. To facilitate pedestrian safety, roads would be restored to normal operation by covering trenches with steel plates outside of allowed working hours or when work is not in progress. Prior to construction, the City would coordinate with facility owners and/or administrators of sensitive land uses such as police and fire stations, hospitals, and schools. The City would provide advance notification to facility owners and/or operators of the timing, location, and duration of construction activities and lane closures. All roads shall remain passable to emergency service vehicles at all times. Road work construction notification would be provided with “Road Work Ahead” warning signs and speed control to achieve required speed reductions for safe traffic flow through the work zone. The City would coordinate with the North County Transit District so the transit provider can temporarily relocate or reconfigure bus routes or bus stops in the work zone as it deems necessary. A contact person will be designated for responding to construction-related issues. The name and phone number of the liaison will be conspicuously posted at the construction site, and on all advanced notifications. This person will take steps to resolve complaints.

Project Operation and Maintenance Details

The proposed project would not require full-time employees onsite. Additional employees would be required for monthly routine facility maintenance, delivery, and removal of chemicals. In addition, nine chemical deliveries would be expected monthly for normal operation of the facility.



SOURCE: ESRI; SanGIS 2015

Escondido MFRO Facility Project. 140480.01

Figure 1

Regional Location

SOURCE: ESRI; SanGIS 2015; USGS 7.5' Topo Quad Valley Center; Escondido 1975, 1978

Escondido MFRO Facility Project. 140480.01

Figure 2

Project Vicinity Map

Methodology

Literature Review

Prior to conducting the field survey, ESA biologist Alanna Bennett conducted a database search and review of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) (CDFW, 2016) and California Native Plant Society (CNPS) Rare Plant Inventory (CNPS, 2016) for recorded occurrences of special-status plant and wildlife species within the Escondido, California 7.5-minute USGS topographic quadrangle and the eight surrounding USGS quadrangles (**Attachment A**). 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 was also reviewed (USFWS, 2016). 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.

Field Surveys

Field surveys were conducted by ESA biologist Alanna Bennett on August 3, 2016 from the hours of 8:00 AM to 11:00 PM. Field surveys conducted include vegetation mapping, assessment for potential wetlands, and habitat suitability assessment for special-status species. Weather conditions during the survey consisted of an average temperature of 82 degrees Fahrenheit, winds of 3 to 6 miles per hour, and mostly sunny skies. The survey consisted of walking the entire project site to characterize and map vegetation communities within the project site, and within a 100-foot buffer of the project site. Vegetation communities were classified in accordance with the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986, and Oberbauer, update 2008); *The Jepson Manual* (2012) was referenced for the identification of plant species and suitable habitats. All areas within and adjacent to the project site were assessed for their potential to support special-status plant or wildlife species. The potential for special-status species to occur within or adjacent to the proposed project was based on the presence of suitable habitat (including soils and vegetation), previously recorded occurrences, topography and elevation, and existing land uses. Representative photographs of the survey area are included in **Attachment B**.

Regulatory Framework

Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 Code of Federal Regulations [CFR] Section 17.3). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR Section 17.3). Actions that result in take can result in civil or criminal penalties. See Section 1.6.6 for a discussion of the MSCP that addresses endangered and threatened species within the City of San Diego. Projects that are implemented consistent with City of San Diego Land Development Code Biology

Guidelines (Biology Guidelines) would be allowed to "take" endangered species with the City's authorization and approval (City of San Diego, 2011a).

Clean Water Act

Pursuant to Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) is authorized to regulate any activity that would result in the discharge of dredged or fill material into jurisdictional waters of the United States, which include those waters listed in 33 CFR Part 328 (Definitions). USACE, with oversight by the U.S. Environmental Protection Agency (USEPA), has the principal authority to issue CWA Section 404 Permits.

Pursuant to Section 401 of the CWA, the Regional Water Quality Control Board (RWQCB), Region 9, certifies that any discharge into jurisdictional waters of the United States will comply with state water quality standards. The RWQCB, as delegated by USEPA, has the principal authority to issue a CWA Section 401 water quality certification or waiver.

Migratory Bird Treaty Act

The MBTA, first enacted in 1916, prohibits any person, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention…for the protection of migratory birds…or any part, nest, or egg of any such bird" (16 U.S. Code 703).

The list of migratory birds includes nearly all bird species native to the United States. The Migratory Bird Treaty Reform Act of 2004 further defines species protected under the MBTA and excludes all non-native species. The statute was extended in 1974 to include parts of birds, as well as eggs and nests. Thus, it is illegal under the MBTA to directly kill or destroy a nest of nearly any bird species, not just endangered species. Activities that result in removal or destruction of an active nest (a nest with eggs or young being attended by one or more adults) would violate the MBTA. Removal of unoccupied nests, or bird mortality resulting indirectly from a project, is not considered a violation of the MBTA.

Any activity, such as grading or grubbing for construction of the project site, that results in destruction of one or more active nests of native birds would entail a violation of the MBTA.

California Environmental Quality Act

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely on the guidance provided by the expanded Initial Study checklist contained in Appendix G of the State CEQA Guidelines. Appendix G provides examples of impacts that would typically be considered significant. Based on these guidelines, impacts to biological resources would be considered significant if the project would do any of the following:

- 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 CDFW or the USFWS.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means.
- 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.
- Conflict with the provisions of an adopted habitat conservation plan (HCP); Natural Community Conservation Plan; or other approved local, regional, or state HCP.

An evaluation of whether an impact on biological resources would be substantial must consider the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. The evaluation of impacts considers direct impacts, indirect impacts, and cumulative impacts and whether the impact is permanent or temporary.

California Fish and Game Code

The California Fish and Game Code (CFGC) regulates the taking or possession of birds, mammals, fish, amphibians, and reptiles, as well as natural resources such as wetlands and waters of the state. It includes the California Endangered Species Act (CESA) (Sections 2050–2115) and Streambed Alternation Agreement regulations (Sections 1600–1616). These sections are described further below and on the next page.

CFGC Sections 1600–1616 – Pursuant to Section 1600 et seq. of the CFGC, the California Department of Fish and Wildlife (CDFW) (formerly California Department of Fish and Game) regulates activities of an applicant's project that would substantially alter the flow, bed, channel, or banks of streams or lakes, unless certain conditions outlined by CDFW are met by the applicant. The limits of CDFW jurisdiction are defined in CFGC Section 1600 et seq. as the "bed, channel, or bank of any river, stream,[1] or lake designated by CDFW in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit."[2] However, in practice, CDFW usually extends its jurisdictional limit and assertion to the top of a bank of a stream, the bank of a lake, or outer edge of the riparian vegetation, whichever is wider.

In some cases, drainage ditches and retention ponds[3] can be potentially considered under the regulatory administration of CDFW. CDFW provides specific guidance concerning its regulatory administration in California Code of Regulations Title 14 Section 720 (Designation of Waters of Department Interest):

For the purpose of implementing Sections 1601 and 1603 of the Fish and Game Code, which requires submission to the Department of general plans sufficient to indicate the nature of a project for construction by or on behalf of any person, governmental agency, state or local, and any public utility, of any project which will divert, obstruct,

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1 Title 14 California Code of Regulations (CCR) 1.72 defines a stream as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation."

2 This also includes the habitat upon which they depend for continued viability (CFGC Division 5, Chapter 1, Section 45, and Division 2, Chapter 1, Section 711.2[a]).

3 Title 14 CCR 1.56 defines a lake as a feature that "includes lakes or man-made reservoirs."

or change the natural flow or bed of any river, stream, or lake designated by the Department, or will use material from the streambeds designated by the Department, all rivers, streams, lakes, and streambeds in the State of California, including all rivers, streams, and streambeds, *which may have intermittent flows of water*, are hereby designated for such purpose (italics added.)

CFGC Sections 2050–2115 – Any proposed impact to state-listed species within or adjacent to the project area would require a permit under CESA. CESA generally parallels the main provisions of FESA and is administered by CDFW. CESA prohibits take of wildlife and plants listed as threatened or endangered by the CFGC. "Take" is defined under the CFGC as any action or attempt to "hunt, pursue, catch, capture, or kill." Therefore, take under CESA does not include "the taking of habitat alone or the impacts of the taking."[4] Rather, the courts have affirmed that, under CESA, "taking involves mortality."

CESA allows exceptions to the take prohibition for take that occurs during otherwise lawful activities. The requirements of an application for an incidental take permit under CESA are described in Section 2081 of the CFGC. Incidental take of state-listed species may be authorized if an applicant submits an approved plan that minimizes and "fully mitigates" the impacts of this take. Therefore, any proposed impact to state-listed species within or adjacent to the project area would require an incidental take permit under CESA.

CFGC Section 2080.1 allows an applicant who has obtained a federal incidental take statement as part of a Biological Opinion pursuant to a FESA Section 7 consultation or an incidental take permit under FESA Section 10(a) to notify the CDFW Director in writing that the applicant has been issued an incidental take statement or permit pursuant to FESA and to submit a copy to the CDFW Director. The CDFW Director then has 30 days to determine whether the incidental take statement or permit is "consistent" with CESA in the form of a written "consistency determination." If the CDFW Director determines that the incidental take statement or permit is consistent with CESA, the applicant does not need to obtain separate take authorization from CDFW in the form of an incidental take permit under CFGC Section 2081(b) and (c). However, consistency determinations apply only in those situations where the affected species is listed under both FESA and CESA. If the species is listed under CESA only, an applicant must obtain an incidental take permit under CFGC Section 2081(b) and (c).

CFGC Section 3503 and 3512 – Under CFGC Division 4, Part 2, Chapter 1, Section 3503.5, "it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey), or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto," where "take" is defined under Division 0.5, Chapter 1, Section 86 as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." In addition, CFGC 3512 also prohibits take of birds and active nests. Construction activities that result in abandonment of an active bird nest in areas adjacent to the disturbance may violate sections of the CFGC.

Multiple Habitat Conservation Program

The Multiple Habitat Conservation Program (MHCP) 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. Its goal is to conserve approximately 19,000 acres of habitat, of which roughly 8,800 acres (46 percent) are

4 *Environmental Council of Sacramento v. City of Sacramento*, 142 Cal. App. 4th 1018 (2006).

already in public ownership and contribute toward the habitat preserve system for the protection of more than 80 rare, threatened, or endangered species.

The MHCP Subregional Plan and Final Environmental Impact Statement / Environmental Impact Report (EIS/EIR) were adopted and certified by the SANDAG Board of Directors on March 28, 2003. Subarea plans for the cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, and Vista are being prepared and must be adopted by each City Council and implementing agreements with the California Department of Fish and Game and U.S. Fish and Wildlife Service must be signed before incidental take permits can be issued. The City of Escondido draft Subarea Plan has not been approved therefore take authorization is not provided for covered species, however, the project is still required to demonstrate consistency with the overall MHCP requirements for impacts to biological resources.

City of Escondido

Implementation of the proposed project may require the removal of some trees located on the project site. Section 33-1066, -1068, and -1069 of Article 55 (Grading and Erosion Control) of the City's Zoning Code regulates impacts to historically significant and/or mature trees, with a focus on oak tree protection (City of Escondido, 2001b). "On developed and undeveloped lots two (2) acres or larger, a vegetation removal permit shall be obtained prior to clearing, pruning, or destroying vegetation, and prior to any encroachments by new construction or improvements that disturb the root system within the dripline of mature trees." Mature trees are defined as trees with a diameter at breast height of 8 inches or greater. Sec. 33-1068.C states that a tree survey of all mature trees is required whether the tree(s) is intended to be removed or preserved. Additionally, plans involving potential relocation, removal methods, and estimations on the health of and the significance of the impacts to the tree(s) are required in order to obtain a vegetation removal permit.

Existing Conditions

This section provides a discussion of existing conditions within the site, including a general characterization of the proposed project site, soils, vegetation communities and land cover types, non-special status plant species, non-special status wildlife species, and special-status resources. Special-status resources include sensitive natural communities, special-status plant and wildlife species[5], nesting birds, wildlife corridors, jurisdictional resources, and trees regulated by local policies and ordinances.

General Site Characteristics

The project site is located within a developed area in the City. Surrounding land uses consist of commercial and residential developments. The site occurs on flat land, at an elevation range of approximately 672 feet above mean sea level (AMSL) to 674 AMSL. The project site itself is largely disturbed, consisting of very little vegetation throughout most of the site; however, non-native grassland community types are located along the perimeter of the site. Evidence of recent mowing of vegetation is present throughout the site. Sparse ornamental trees are located along the northern, western, and eastern edges of the site, both within and just outside project boundaries. Escondido Creek Flood Control Channel, a concrete-lined channel with no riparian vegetation, is located to the south of the project site and parallels the southern border. Previous uses on the project site, such as

[5] "Special-status" species analyzed in this report include plants and animals that are listed and protected as "Endangered" or "Threatened" under CESA or FESA, as well as non-listed species that may be considered sufficiently rare or sensitive by CDFW, other recognized conservation organizations (e.g., San Diego County MHCP, CNPS) and/or by the Lead Agency with authority under CEQA to warrant conservation and protection.

vehicle use, equipment storage, and stockpiling, have significantly reduced the quality of the habitat on the project site.

Soils

Based on a review of the U.S. Department of Agriculture Soils Map for the area, the project site consists of sandy loam soils belonging to the Reiff soil series (NRCS, 2016) (**Figure 3**). Specific soil mapping units mapped on the project site consists entirely of Reiff fine sandy loam, 0 to 2 percent slopes. Reiff soils are deep, well-drained soils located in alluvial fans and flood plains. Thin silt and sand occur commonly in the profile, and gravel occurs less commonly. These soils typically occur on slopes ranging from 0 to 9 percent (NRCS, 2016). Based on the field assessment, the soils onsite are highly compacted and rocky due to previous disturbance. A layer of gravel has been added to the developed area near the northwest region of the site. No hydric soils or soils capable of supporting wetland species are present.

SOURCE: ESRI; SSURGO

Escondido MFRO Facility Project. 140480.01

Figure 3

Soils Map

SOURCE: ESRI 2014

Escondido MFRO Facility Project. 140480.01

Figure 4

Vegetation Communities

Vegetation Communities and Land Cover Types

The vegetation communities and land cover types (including the Holland code, dominant plants, and descriptions) within the project site and 100-foot buffer are depicted in **Figure 4** and **Table 2**, and discussed in further detail below.

TABLE 2
VEGETATION COMMUNITIES AND LAND COVER TYPES

Vegetation Community (Holland Code)	Project Site (acres)	100-foot buffer (acres)	Total
Riparian and Wetlands			
Non-Vegetated Channel (64200)	0.00	1.54	1.54
Uplands			
Non-Native Grassland (42200)	0.48	0.06	0.54
Non-Native Grassland: Broadleaf-Dominated (42210)	1.06	0.02	1.08
Other Cover Types			
Disturbed Habitat (11300)	2.86	0.01	2.87
Developed (12000)	0.10	3.62	3.72
Grand Total	**4.50**	**5.25**	**9.75**

Non-Native Grassland (42200)

Non-native grassland consists of dense to sparse annual grasses. Common indicator species include wild oat (*Avena* spp.), brome (*Bromus* spp.), and mustard (*Brassica* spp.). Typically, these communities dieback in the summer and early fall. Dominant species within the project site consist of wild oat (*Avena fatua*), red brome (*Bromus madritensis* ssp. *rubens*), Bermuda grass (*Cynodon dactylon*), and Russian thistle (*Salsola tragus*). This community accounts for 0.48 acre on the site and is located on the northwestern corner, western edge, and near the northeastern corner of the site; in addition to 0.06 acre within the 100-foot buffer along the western edge of the project site (Figure 4).

Non-Native Grassland: Broadleaf-Dominated (42210)

Broadleaf-dominated non-native grassland is a subset of non-native grassland, appropriate when non-native broadleaf species comprise 50 percent or more of the total vegetative cover. Characteristic species of this community include black mustard (*Brassica nigra*), short-pod mustard (*Hirschfeldia incana*), and thistle (*Centaurea* spp.). Within the project site, Russian thistle, short-pod mustard, plantain (*Plantago* spp.), and Lamb's quarters (*Chenopodium album*) were dominant within this community. Several non-native and landscaped trees are mapped within this community, along the northern project boundary. The tree species surrounding the site include Mexican fan palm (*Washingtonia robusta*); Brazilian pepper tree (*Schinus terebinthifolius*), magnolia (*Magnolia* sp.), Chinese elm (*Ulmus parvifolia*), and pine (*Pinus* sp). Non-native grassland: broadleaf-dominated is located on the northern, eastern, and southern edges of the site, totaling 1.06 acres. Additionally, 0.02 acre of this community is mapped within the 100-foot buffer along the northern edge of the project site.

Non-Vegetated Channel (64200)

Non-vegetated channel is mapped for the channelized Escondido Creek Flood Control Channel to the south of the project site, within the 100-foot buffer. The portion of Escondido Creek Flood Control Channel within the 100-foot buffer is concrete-lined with an associated levee containing disturbed bare ground and no associated riparian habitat. Surface water was observed in the non-vegetated channel during the time of the survey, and no habitat for wildlife species was observed. Escondido Creek Flood Control Channel is concrete-lined approximately 3 miles upstream and downstream from the project site, within the Escondido city limits. Non-vegetated channel is not mapped for any portions of the project site, but comprises 1.54 acres of the surrounding buffer.

Disturbed Habitat (11300)

Disturbed habitat consists of areas that have been previously disturbed from a number of human-related causes that have significantly altered and degraded the previous native habitat. Disturbed areas are typically devoid of vegetation except for non-native ruderal (weedy) species which are concentrated along the periphery of the site and scattered throughout. Soils in these areas are generally compacted due to previous uses on the site including vehicle and heavy machinery traffic, shipping container staging, stockpiling of dirt, and vehicle parking that have significantly degraded the habitat. This land cover type is the dominant cover type onsite, comprising 2.86 acres of the total 4.50-acre site. Additionally, 0.01 acre of disturbed habitat is mapped within the 100-foot buffer adjacent to the levee for Escondido Creek Flood Control Channel to the south. As shown on Figure 4, disturbed habitat is located throughout the central portion of the site. The majority of the disturbed habitat onsite consists of graded and compact bare ground. Sparse vegetation such as puncture vine (*Tribulus terrestris*) and Russian thistle (*Salsola tragus*) are scattered near the perimeter and a top layer of gravel occurs in the northwestern portion of this community, extending onto two driveways leading offsite, one on the northern border near the western end and one on the western border.

Developed (12000)

Developed land typically includes areas that have been constructed upon and do not contain any naturally occurring vegetation. These areas are generally characterized as graded land with asphalt and concrete placed upon it. The only vegetation observed within developed areas includes non-native landscaped trees that are on the boundary of the mapped non-native grassland: broadleaf-dominated community, and contain the same tree species. Developed land comprises 0.10 acre of the project site along the southern boundary of the project site and also accounts 3.62 acres of the surrounding buffer, including the residential development to the east, and Washington Street and Ash Avenue to the north and west, respectively.

Non-Special Status Plants

All plant species observed during the field survey were documented and are listed in Attachment C.

Non-Special Status Wildlife

Wildlife observed during the field reconnaissance included avian species such as house finch (*Carpodacus mexicanus*), killdeer (*Charadrius vociferus*), American crow (*Corvus brachyrhynchos*), California towhee (*Melozone crissalis*), and black phoebe (*Melozone crissalis*), as well as invertebrates such as common white (*Pontia protodice*), Japanese beetle (*Popillia japonica*), and common buckeye (*Junonia coenia*). Wildlife species detected onsite are generally those that are highly adapted to urban environments. A list of wildlife species observed during the field survey are listed in Attachment C.

Sensitive Natural Communities

Sensitive natural communities are vegetation communities that are considered rare in the region by regulatory agencies and are known to provide habitat for sensitive animal or plant species. Project-related impacts to these sensitive vegetation communities require restoration or compensatory mitigation per CEQA Guidelines and MHCP Guidelines. Disturbed habitat, developed land cover type, and non-native grassland types are present within both the project site and the 100-foot buffer, with non-vegetated channel only within the 100-foot buffer. Within the MHCP, conservation of non-native grassland, also known as annual grassland, is identified as critical to achieving MHCP preserve design goals in context to creating linkages between other areas of native vegetation. Within the project site and 100-foot buffer, the non-native grassland habitats are completely surrounded by developed land and disturbed habitat. Therefore the non-native grassland habitats do not function to connect native vegetation.

Special-Status Plants

Special-status plants were not detected during the field survey. Although the site visit was conducted outside of the blooming period for these species and a focused rare plant survey was not conducted, the project site is unlikely to support special-status plant species due to its general location within an entirely developed portion of the City, lack of suitable vegetation communities, observed surface soils, and high level of disturbance. Of the 87 special-status plant species that were evaluated for the potential to occur onsite, all were determined to have a low potential to occur (**Attachment D**). Because of the lack of suitable habitat onsite to support special-status plants, no special-status plants are expected to occur and rare plant surveys would not be required.

Special-Status Wildlife

Special-status wildlife species were not observed during the biological assessment. Due to the highly disturbed nature of the site, with no native habitats existing with the project boundaries or immediate vicinity, the potential for special-status wildlife to occur onsite is minimal. Of the 58 special-status wildlife species that were evaluated for the potential to occur onsite, all were determined to have a low potential to occur (Attachment D). Additionally, the site is isolated from natural areas and surrounded by development. The Escondido Creek Flood Control Channel to the south of the project site is channelized and separated by a fence, limiting the potential for connection to a potential movement corridor. Therefore, no special-status wildlife species are expected to occur and no focused protocol surveys for special-status wildlife species would be required.

Nesting Birds

The existing ornamental trees on the perimeter of the project site, both inside and adjacent to the project boundaries, provide suitable nesting habitat for avian species protected by the MBTA and California Fish and Game Code (CFGC) 3500. As noted previously, native avian species including California towhee, kill deer, and black phoebe were noted during the field survey and have a potential to nest on-site or in adjacent trees.

Wildlife Corridors

Wildlife movement corridors, also referred to as biological core and linkage areas, 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, due to the developed nature of the surrounding area. Additionally, the project site is currently surrounded by 6-foot high chain link and wood fencing, prohibiting movement through the site. It is possible migratory birds could use the trees on the periphery

of the site as a stopover or for nesting, as discussed above; however, the surrounding urban development limits the availability of resources to wildlife.

Jurisdictional Resources

Wetlands are defined under the federal Clean Water Act, as accepted by the U.S. Army Corps of Engineers and CDFW, 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. If potential wetlands or drainage features are onsite and may be impacted by the proposed project, a jurisdictional delineation would be required to confirm the presence of federal and state wetlands and waters within the project site. The field survey determined that no jurisdictional resources occur within the boundaries of the project site. Moreover, the parcel is flat and without drainage features, and is surrounded by development with no connectivity to jurisdictional resources. However, the Escondido Creek Flood Control Channel occurs to the south of the project site and within the 100-foot buffer. The channel is concrete-lined with no riparian vegetation and only dirt and concrete occur on the associated levees. Escondido Creek Flood Control Channel is channelized through the city limits of Escondido and connects with Lake Wohlford approximately 3 miles upstream and eventually drains to the Pacific Ocean approximately 14 miles downstream.

Trees Regulated by Local Policies and Ordinances

Several non-native and landscaped trees are mapped within along the northern project boundary and within the 100-foot buffer. The tree species surrounding the site include Mexican fan palm, Brazilian pepper tree, magnolia, Chinese elm, and pine. These species fall within the definition of mature trees protected by the City of Escondido Municipal Code. No other oaks, native species, or trees considered to be significantly aesthetic and ecological resources occur within the project site.

Discussion of Findings

The following section includes a discussion of impacts to biological resources within and adjacent to the project site as a result of project implementation. Biological resource issues include special-status plant and wildlife species, sensitive natural communities, nesting birds, and other biological resources considered sensitive under CEQA such as wildlife corridors, jurisdictional resources, local policies and ordinances, and habitat conservation plans. Measures to avoid or reduce potential project-related impacts to sensitive biological resources are provided in the Recommendations section.

Sensitive Natural Communities

Disturbed habitat and non-native grassland types are present within the project boundaries and immediate vicinity. Within the MHCP, conservation of non-native grassland, also known as annual grassland, is identified as critical to achieving MHCP preserve design goals and requires a mitigation ratio of 0.5:1. However, as noted previously, grasslands within the project site and 100-foot buffer do not provide linkages between other areas of native vegetation since the site is completely surrounded by urban development. Thus, impacts to non-native grassland types within the project site in the form of vegetation removal, would not be considered significant and would not require mitigation. Escondido Creek Flood Control Channel, a non-vegetated concrete-lined channel, occurs to the immediate south of the project site but since this channel lacks any associated habitat it is not considered a sensitive natural community. Therefore, no project impacts would occur to any sensitive natural community within or adjacent to the project site and no mitigation is required.

Special-Status Plants

No special-status plants were detected during the field survey and are not expected to occur; thus no impacts to special-status plants would occur.

Special-Status Wildlife

No special-status wildlife species were observed during the field survey and are not expected to occur; thus, no impacts to special-status wildlife would occur.

Nesting Birds

Nesting birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code 3500 may occur within and adjacent to the project site; direct removal of habitat or trees where nesting birds or nests are present, disruption of nesting activity as a result of construction noise and vibration during the breeding season (typically February 1 through August 31) would be considered significant. Avoidance measures are included in the Recommendations section to reduce potential project-related impacts to nesting birds.

Wildlife Corridors

Wildlife corridors do not occur within or adjacent to the project site. The channelized Escondido Creek Flood Control Channel to the south of the project site may facilitate the movement of wildlife species through the City of Escondido, however, no project activities would impede the use of the Escondido Creek Flood Control Channel and thus, no impacts to wildlife corridors are expected to occur.

Jurisdictional Resources

The Escondido Creek Flood Control Channel occurs along the southern boundary of the project site, and is a concrete-lined channelized feature that is potentially jurisdictional. Potential direct impacts to this feature may occur through the construction of a stormwater runoff pipe that would be constructed on the levee and drain into the Escondido Creek Flood Control Channel. Potential direct impacts may be associated with constructing within the Ordinary High Water Mark (OHWM) of the Escondido Creek Flood Control Channel and stormwater discharge into a potentially jurisdictional feature. The proposed storm water pipeline and tank overflow/drain pipelines would be constructed within the jurisdictional limits of the Escondido Creek Flood Control Channel to the south which would be considered a significant impact requiring regulatory agency permitting.

Potential indirect impacts to the channel may occur as a result of construction-generated dust, runoff, and sedimentation into the Escondido Creek Flood Control Channel. These impacts would be considered significant. Avoidance measures are included in the Recommendations section to reduce potential project-related impacts to the Escondido Creek Flood Control Channel.

Trees Regulated by Local Policies and Ordinances

Multiple mature trees, albeit non-native and ornamental, are located on the perimeter of the project site; some of these trees could be impacted by the proposed project. The City of Escondido General Plan "recognizes oak trees and other mature trees as significantly aesthetic and ecological resources," and requires permits when certain trees are to be removed within the City's boundaries (City of Escondido, 2012). However, no trees considered a significantly aesthetic and ecological resource occur on the project site or study area. Additionally, the project's removal of trees by the project would not be considered a significant impact that requires mitigation; however, replacement of removed trees would be required in accordance with the City's grading ordinance. The grading

permit issued by the City for the project would serve as authorization for tree removal on the project site because a vegetation removal permit would only be required where there is no associated project or grading permit issued.

Habitat Conservation Plans

The project site occurs within the MHCP. Although the subarea plan is in draft form, this project will implement the recommendations provided in the next section to avoid/minimize impacts to biological resources in accordance with the requirements of the MHCP.

Recommendations

Based on the results of the habitat assessment, this section provides a discussion of recommended measures to avoid/minimize any potential impact to sensitive biological resources from construction of the proposed project.

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 February 1 through August 31, to avoid take of nesting birds, eggs, chicks, or fledglings.

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 three days prior to the initiation of project construction activities. If a protected native bird is found, flagging, stakes, and/or construction fencing and noise attenuation shall be used to demarcate a suitable buffer zone dependent of sensitivity of the species and proximity of the nest to the construction area. Project construction personnel, including all contractors working onsite, will be instructed on the sensitivity of the area. The project proponent shall delay all project construction activities until September 1 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.

Should nesting birds be found, the qualified biological monitor shall be present onsite 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.

Jurisdictional Resources

The proposed storm water pipeline and tank overflow/drain pipelines would be constructed within the jurisdictional limits of Escondido Creek Flood Control Channel to the south. The proposed storm water pipeline and tank overflow/drain pipelines would be constructed within the jurisdictional limits of Escondido Creek Flood Control Channel to the south. All required permits would be obtained prior to the start of construction activities for the project. Compensatory mitigation implemented as part of the regulatory permit requirements would be implemented to reduce potential project-related impacts to potentially jurisdictional resources to a less than significant level.

A National Pollutant Discharge Elimination System (NPDES) Permit may also be required to address a new stormwater discharge into a potentially jurisdictional feature. The NPDES Permit would not be required if the project is able to use the existing stormwater pipeline on the site for the proposed project.

Additionally, the project would be considered a Priority Project for storm water purposes and would require the submittal of a Storm Water Management Plan (SWQMP). The SWQMP would spell out all of the require measures to address post construction impacts. The project would also be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) in compliance with the Construction General Permit and implement construction and post construction Best Management Practices (BMPs) in compliance with the City and RWQCB regulations.

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Attachments

A. CNDDB, CNPS, and IPaC Lists

B. Site Photographs

C. Species Compendium

D. Special-Status Species Table

ATTACHMENT A

CNDDB, CNPS, and IPaC Lists

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

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

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Acanthomintha ilicifolia San Diego thorn-mint	PDLAM01010	Threatened	Endangered	G1	S1	1B.1
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Adolphia californica California adolphia	PDRHA01010	None	None	G3	S2	2B.1
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S2S3	WL
Ambrosia pumila San Diego ambrosia	PDAST0C0M0	Endangered	None	G1	S1	1B.1
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos glandulosa ssp. crassifolia Del Mar manzanita	PDERI040E8	Endangered	None	G5T2	S2	1B.1
Arctostaphylos rainbowensis Rainbow manzanita	PDERI042T0	None	None	G2	S2	1B.1
Artemisia palmeri San Diego sagewort	PDAST0S160	None	None	G3G4	S3?	4.2
Artemisiospiza belli belli Bell's sage sparrow	ABPBX97021	None	None	G5T2T4	S2?	WL
Aspidoscelis hyperythra orangethroat whiptail	ARACJ02060	None	None	G5	S2S3	WL
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Astragalus oocarpus San Diego milk-vetch	PDFAB0F6B0	None	None	G2?	S2?	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Atriplex pacifica south coast saltscale	PDCHE041C0	None	None	G4	S2	1B.2
Atriplex parishii Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
Baccharis vanessae Encinitas baccharis	PDAST0W0P0	Threatened	Endangered	G1	S1	1B.1
Berberis nevinii Nevin's barberry	PDBER060A0	Endangered	Endangered	G1	S1	1B.1
Bloomeria clevelandii San Diego goldenstar	PMLIL1H010	None	None	G2	S2	1B.1
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Branchinecta sandiegonensis San Diego fairy shrimp	ICBRA03060	Endangered	None	G2	S2	
Brodiaea filifolia thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
Brodiaea orcuttii Orcutt's brodiaea	PMLIL0C0B0	None	None	G2	S2	1B.1
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California macrophylla round-leaved filaree	PDGER01070	None	None	G3?	S3?	1B.2
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	ABPBG02095	None	None	G5T3Q	S3	SSC
Caulanthus simulans Payson's jewelflower	PDBRA0M0H0	None	None	G4	S4	4.2
Ceanothus verrucosus wart-stemmed ceanothus	PDRHA041J0	None	None	G3	S2	2B.2
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Centromadia pungens ssp. laevis smooth tarplant	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
Chaenactis glabriuscula var. orcuttiana Orcutt's pincushion	PDAST20095	None	None	G5T1T2	S1	1B.1
Chaetodipus californicus femoralis Dulzura pocket mouse	AMAFD05021	None	None	G5T3	S3	SSC
Chaetodipus fallax fallax northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	SSC
Charadrius alexandrinus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
Charina trivirgata rosy boa	ARADA01020	None	None	G4G5	S3S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Chorizanthe orcuttiana Orcutt's spineflower	PDPGN040G0	Endangered	Endangered	G1	S1	1B.1
Clarkia delicata delicate clarkia	PDONA050D0	None	None	G3	S3	1B.2
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Comarostaphylis diversifolia ssp. diversifolia summer holly	PDERI0B011	None	None	G3T2	S2	1B.2
Corethrogyne filaginifolia var. linifolia Del Mar Mesa sand aster	PDAST2M027	None	None	G4T1T2Q	S1S2	1B.1
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
Delphinium hesperium ssp. cuyamacae Cuyamaca larkspur	PDRAN0B0U1	None	Rare	G4T2	S2	1B.2
Dipodomys stephensi Stephens' kangaroo rat	AMAFD03100	Endangered	Threatened	G2	S2	
Dudleya variegata variegated dudleya	PDCRA040R0	None	None	G2	S2	1B.2
Dudleya viscida sticky dudleya	PDCRA040T0	None	None	G2	S2	1B.2
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Ensatina klauberi large-blotched salamander	AAAAD04013	None	None	G2G3	S3	WL
Ericameria palmeri var. palmeri Palmer's goldenbush	PDAST3L0C1	None	None	G4T2?	S2	1B.1
Eryngium aristulatum var. parishii San Diego button-celery	PDAPI0Z042	Endangered	Endangered	G5T1	S1	1B.1
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Ferocactus viridescens San Diego barrel cactus	PDCAC08060	None	None	G3?	S2S3	2B.1
Gila orcuttii arroyo chub	AFCJB13120	None	None	G2	S2	SSC
Harpagonella palmeri Palmer's grapplinghook	PDBOR0H010	None	None	G4	S3	4.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Hazardia orcuttii Orcutt's hazardia	PDAST4H070	None	Threatened	G1	S1	1B.1
Heterotheca sessiliflora ssp. sessiliflora beach goldenaster	PDAST4V0K2	None	None	G4T2T3	S1	1B.1
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Horkelia truncata Ramona horkelia	PDROS0W0G0	None	None	G3	S3	1B.3
Hulsea californica San Diego sunflower	PDAST4Z030	None	None	G3	S3	1B.3
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Isocoma menziesii var. decumbens decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
Iva hayesiana San Diego marsh-elder	PDAST580A0	None	None	G3?	S2	2B.2
Ixobrychus exilis least bittern	ABNGA02010	None	None	G5	S2	SSC
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G5	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Leptosyne maritima sea dahlia	PDAST2L0L0	None	None	G2	S1	2B.2
Lepus californicus bennettii San Diego black-tailed jackrabbit	AMAEB03051	None	None	G5T3T4	S3S4	SSC
Lilium parryi lemon lily	PMLIL1A0J0	None	None	G3	S3	1B.2
Linanthus orcuttii Orcutt's linanthus	PDPLM090X0	None	None	G3	S2	1B.3
Maritime Succulent Scrub Maritime Succulent Scrub	CTT32400CA	None	None	G2	S1.1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Monardella hypoleuca ssp. intermedia intermediate monardella	PDLAM180A4	None	None	G4T2T3	S2S3	1B.3
Monardella hypoleuca ssp. lanata felt-leaved monardella	PDLAM180A2	None	None	G4T3	S3	1B.2
Monardella macrantha ssp. hallii Hall's monardella	PDLAM180E1	None	None	G5T3	S3	1B.3
Monardella nana ssp. leptosiphon San Felipe monardella	PDLAM180F2	None	None	G4G5T2Q	S2	1B.2
Myosurus minimus ssp. apus little mousetail	PDRAN0H031	None	None	G5T2Q	S2	3.1
Myotis ciliolabrum western small-footed myotis	AMACC01140	None	None	G5	S3	
Myotis evotis long-eared myotis	AMACC01070	None	None	G5	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Navarretia fossalis spreading navarretia	PDPLM0C080	Threatened	None	G2	S2	1B.1
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nolina cismontana chaparral nolina	PMAGA080E0	None	None	G3	S3	1B.2
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G4	S3	SSC
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Passerculus sandwichensis beldingi Belding's savannah sparrow	ABPBX99015	None	Endangered	G5T3	S3	
Perognathus longimembris pacificus Pacific pocket mouse	AMAFD01042	Endangered	None	G5T1	S1	SSC
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Plegadis chihi white-faced ibis	ABNGE02020	None	None	G5	S3S4	WL
Plestiodon skiltonianus interparietalis Coronado Island skink	ARACH01114	None	None	G5T2T3Q	S1S2	WL
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
Pyrgus ruralis lagunae Laguna Mountains skipper	IILEP38021	Endangered	None	G5T1	S1	
Quercus dumosa Nuttall's scrub oak	PDFAG050D0	None	None	G3	S3	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rallus longirostris levipes light-footed clapper rail	ABNME05014	Endangered	Endangered	G5T1T2	S1	FP
Rana muscosa southern mountain yellow-legged frog	AAABH01330	Endangered	Endangered	G1	S1	WL
Salvadora hexalepis virgultea coast patch-nosed snake	ARADB30033	None	None	G5T4	S2S3	SSC
Salvia munzii Munz's sage	PDLAM1S140	None	None	G2	S2	2B.2
San Diego Mesa Claypan Vernal Pool San Diego Mesa Claypan Vernal Pool	CTT44322CA	None	None	G2	S2.1	
Scutellaria bolanderi ssp. austromontana southern mountains skullcap	PDLAM1U0A1	None	None	G4T3	S3	1B.2
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Coastal Salt Marsh Southern Coastal Salt Marsh	CTT52120CA	None	None	G2	S2.1	
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Maritime Chaparral Southern Maritime Chaparral	CTT37C30CA	None	None	G1	S1.1	
Southern Riparian Forest Southern Riparian Forest	CTT61300CA	None	None	G4	S4	
Southern Riparian Scrub Southern Riparian Scrub	CTT63300CA	None	None	G3	S3.2	
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Southern Willow Scrub Southern Willow Scrub	CTT63320CA	None	None	G3	S2.1	
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Stemodia durantifolia purple stemodia	PDSCR1U010	None	None	G5	S2	2B.1
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
Streptocephalus woottoni Riverside fairy shrimp	ICBRA07010	Endangered	None	G1G2	S1S2	
Symphyotrichum defoliatum San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Tetracoccus dioicus	PDEUP1C010	None	None	G3?	S2	1B.2
Parry's tetracoccus						
Thamnophis hammondii	ARADB36160	None	None	G4	S3S4	SSC
two-striped gartersnake						
Tryonia imitator	IMGASJ7040	None	None	G2	S2	
mimic tryonia (=California brackishwater snail)						
Vireo bellii pusillus	ABPBW01114	Endangered	Endangered	G5T2	S2	
least Bell's vireo						

Record Count: 127

CNPS California Native Plant Rare and Endangered Plant Inventory

Plant List

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

Search Criteria

Found in 9 Quads around 33117B1

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	S2?	G2?
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	1B.2	S1S2	G3
Atriplex pacifica	South Coast saltscale	Chenopodiaceae	annual herb	1B.2	S2	G4
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	S2	G2
Brodiaea orcuttii	Orcutt's brodiaea	Themidaceae	perennial bulbiferous herb	1B.1	S2	G2
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.2	S3?	G3?
Calochortus dunnii	Dunn's mariposa lily	Liliaceae	perennial bulbiferous herb	1B.2	S2S3	G2G3
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	3	S4	G4
Caulanthus simulans	Payson's jewelflower	Brassicaceae	annual herb	4.2	S4	G4
Ceanothus verrucosus		Rhamnaceae		2B.2	S2	G3

	wart-stemmed ceanothus		perennial evergreen shrub			
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	G4T1Q
Corethrogyne filaginifolia var. linifolia	Del Mar Mesa sand aster	Asteraceae	perennial herb	1B.1	S1S2	G4T1T2Q
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	S2	G2Q
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	S2	G4T2?
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	S2S3	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	S3	G3
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
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	1B.1	S2	G4T2
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	G2
Lilium parryi	lemon lily	Liliaceae	perennial bulbiferous herb	1B.2	S3	G3
Linanthus orcuttii	Orcutt's linanthus	Polemoniaceae	annual herb	1B.3	S2	G3
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	S2	G2
Nolina cismontana	chaparral nolina	Ruscaceae	perennial evergreen shrub	1B.2	S3	G3
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
Pinus torreyana ssp. torreyana	Torrey pine	Pinaceae	perennial evergreen tree	1B.2	S1	G1T1
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
Salvia munzii	Munz's sage	Lamiaceae	perennial evergreen shrub	2B.2	S2	G2
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap	Lamiaceae	perennial rhizomatous herb	1B.2	S3	G4T3
Selaginella cinerascens	ashy spike-moss	Selaginellaceae	perennial rhizomatous herb	4.1	S3	G3G4
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	S2	G5T2
Xanthisma junceum	rush-like bristleweed	Asteraceae	perennial herb	4.3	S4	G5

Suggested Citation

CNPS, Rare Plant Program. 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed 02 August 2016].

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Phase I Agricultural Reuse and Salt Reduction Project

IPaC Trust Resources Report

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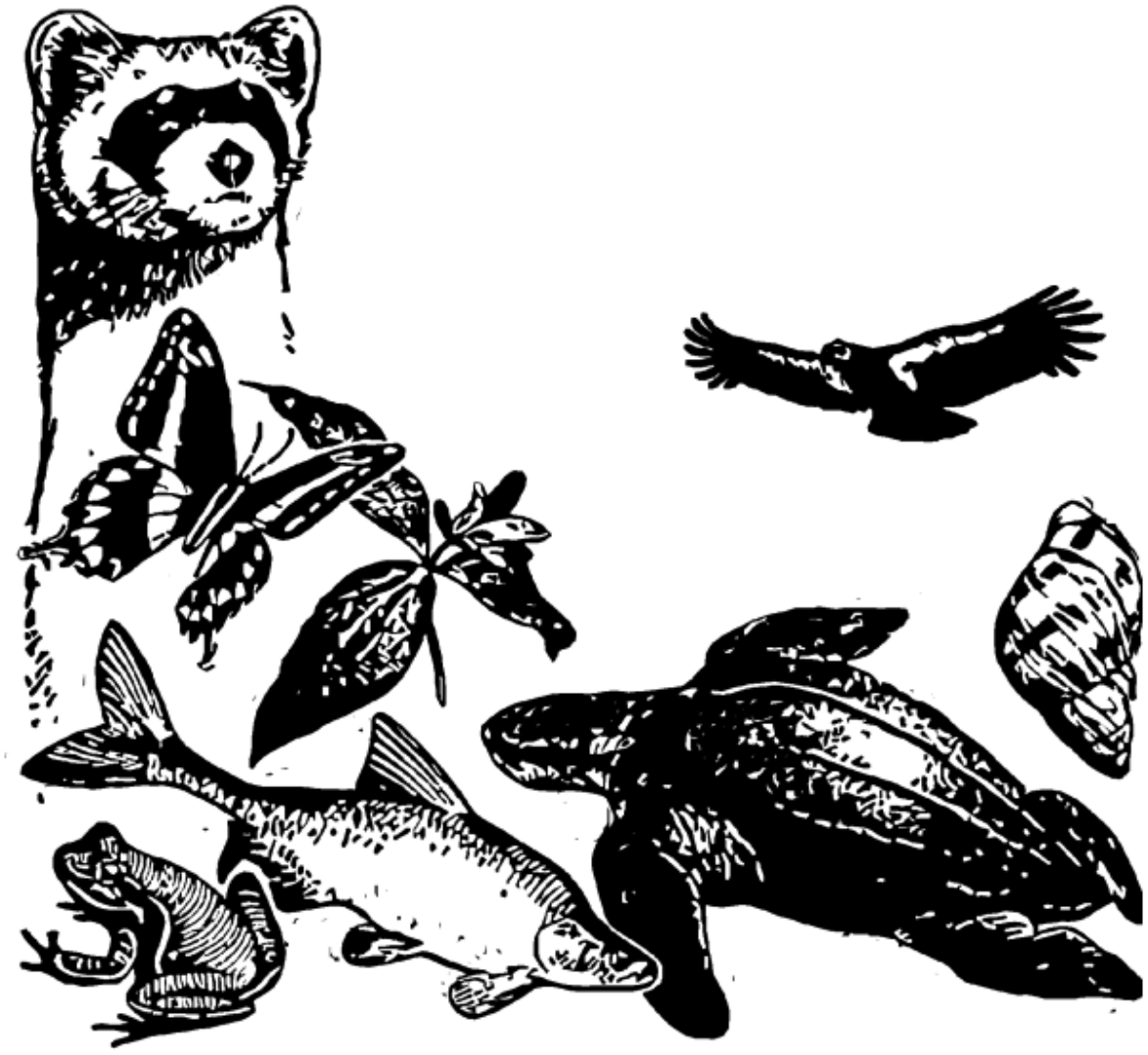
This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



IPaC - Information for Planning and Conservation (https://ecos.fws.gov/ipac/): A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

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U.S. Fish & Wildlife Service

IPaC Trust Resources Report

NAME

Phase I Agricultural Reuse and Salt Reduction Project

LOCATION

San Diego County, California

DESCRIPTION

City of Escondido

IPAC LINK

https://ecos.fws.gov/ipac/project/MVOQQ-4JBAZ-FYVLV-INHXI-7JKWTQ

U.S. Fish & Wildlife Service Contact Information

Trust resources in this location 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 are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Birds

Coastal California Gnatcatcher Polioptila californica californica — Threatened

CRITICAL HABITAT
There is **final** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B08X

Least Bell's Vireo Vireo bellii pusillus — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B067

Southwestern Willow Flycatcher Empidonax traillii extimus — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B094

Flowering Plants

San Diego Ambrosia Ambrosia pumila — Endangered

CRITICAL HABITAT

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

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

San Diego Thornmint Acanthomintha ilicifolia — Threatened

CRITICAL HABITAT

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

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

Willowy Monardella Monardella viminea — Endangered

CRITICAL HABITAT

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

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

Critical Habitats

There are no critical habitats in this location

Migratory Birds

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

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

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
  http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data
  http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The following species of migratory birds could potentially be affected by activities in this location:

Allen's Hummingbird Selasphorus sasin — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0LI

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

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

Bell's Vireo Vireo bellii — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JX

Black-chinned Sparrow Spizella atrogularis — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IR

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

Burrowing Owl Athene cunicularia — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0NC

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

Costa's Hummingbird Calypte costae — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JE

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

Green-tailed Towhee Pipilo chlorurus — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IO

Lawrence's Goldfinch Carduelis lawrencei — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J8

Least Bittern Ixobrychus exilis
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B092

Lesser Yellowlegs Tringa flavipes — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MD

Lewis's Woodpecker Melanerpes lewis — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ

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

Marbled Godwit Limosa fedoa — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JL

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

Nuttall's Woodpecker Picoides nuttallii — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HT

Oak Titmouse Baeolophus inornatus — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MJ

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

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

Red-crowned Parrot Amazona viridigenalis — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0GO

Rufous-crowned Sparrow Aimophila ruficeps — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MX

Short-billed Dowitcher Limnodromus griseus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JK

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

Western Grebe aechmophorus occidentalis — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EA

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

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

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 in this location

ATTACHMENT B

Site Photographs

Attachment B. Site Photographs

The northwestern corner of the site looking southeast

The northwestern corner of the site looking west

The northwestern corner of the site looking south

The southeastern corner of the site looking north

The northeast corner of the site looking south

The southern border of the site looking west

The southern border of the site looking east; concrete channel can be seen on the right

The southwestern corner of the site looking north

ATTACHMENT C

Species Compendium

Attachment C. Plant Species Compendium

Class	Family (scientific)	Family (common)	Scientific Name	Common Name	Special Status
MONOCOTS					
	ARECACEAE	**Palm Family**	*Washingtonia robusta*	Mexican fan palm*	
	POACEAE	**Grass Family**	*Avena barbata*	Slender wild oat*	
			Avena fatua	Wild oat*	
			Bromus diandrus	Ripgut grass*	
			Bromus madritensis ssp. *rubens*	Compact brome*	
			Cynodon dactylon	Bermuda grass*	
			Festuca myuros	Rat-Tail Fescue*	
			Lamarckia aurea	Golden-top*	
			Melica imperfecta	Little California melica	
			Melinis repens ssp. *repens*	Natal grass*	
			Pennisetum setaceum	African fountain grass*	
EUDICOTS					
	ANACARDIACEAE	**Sumac Family**	*Schinus terebinthifolius*	Brazilian pepper tree*	
	ASTERACEAE	**Aster Family**	*Erigeron canadensis*	Horseweed	
			Heterotheca grandiflora	Telegraph weed	
			Lactuca serriola	Bitter lettuce*	
	BRASSICACEAE	**Mustard Family**	*Hirschfeldia incana*	Short-pod mustard*	
	CHENOPODIACEAE	**Goosefoot Family**	*Atriplex semibaccata*	Australian saltbush*	
			Chenopodium album	Lamb's quarters*	
			Salsola tragus	Russian thistle*	
	EUPHORBIACEAE	**Spurge Family**	*Croton setiger*	Doveweed	
			Euphorbia maculata	Spotted spurge*	
	FABACEAE	**Pea Family**	*Acmispon americanus*	Spanish lotus	
	HAMAMELIDACEAE	**Witch-Hazel Family**	*Liquidambar styraciflua*	Sweetgum*	
	LYTHRACEAE	**Loosestrife Family**	*Lythrum hyssopifolia*	Grass poly*	
	MAGNOLIACEAE	**Magnolia Famiy**	*Magnolia* sp.	Magnolia sp.*	
	MYRSINACEAE	**Myrsine Family**	*Lysimachia arvensis*	Scarlet pimpernel*	

Class	Family (scientific)	Family (common)	Scientific Name	Common Name	Special Status
	PLANTAGINACEAE	**Plantain Family**	*Plantago lanceolata*	English Plantain*	
			Plantago sp.	Plantain**	
	SOLANACEAE	**Nightshade Family**	*Datura wrightii*	Western jimson weed	
			Solanum americanum	White nightshade*	
	TROPAEOLACEAE	**Nasturtium Family**	*Tropaeolum majus*	Garden nasturtium*	
	ULMACEAE	**Elm Family**	*Ulmus parvifolia*	Chinese elm*	
	ZYGOPHYLLACEAE	**Caltrop Family**	*Tribulus terrestris*	Puncture vine*	
GYMNOSPERM					
	CUPRESSACEAE	**Cypress Family**	*Cupressus sempervirens*	Italian cypress*	
	PINACEAE	**Pine Family**	*Pinus* sp.	Pine*	

*denotes non-native species

**Species not confirmed. Status (native/non-native) not confirmed

Legend

*= Non-native or invasive species

Special Status:

Federal:

FE = Endangered

FT = Threatened

State:

SE = Endangered

ST =Threatened

CRPR (California Rare Plant Rank)

1A. Presumed extinct in California

1B. Rare or Endangered in California and elsewhere

2. Rare or Endangered in California, more common elsewhere

3. Plants for which we need more information - Review list

4. Plants of limited distribution - Watch list

Threat Ranks

.1 - Seriously endangered in California

Attachment C. Wildlife Species Compendium

Scientific Name	Common Name	Special Status
INVERTEBRATES		
Pontia Protodice	Common white	
Popillia japonica	Japanese beetle	
Precis coenia	Buckeye	
VERTEBRATES		
Birds		
Carpodacus mexicanus	House Finch	
Charadrius vociferus	Killdeer	
Corvus brachyrhynchos	American Crow	
Melozone crissalis	California Towhee	
Sayornis nigricans	Black phoebe	

Legend

*= Non-native or invasive species

Special Status:

Federal:

FE = Endangered

FT = Threatened

State:

SE = Endangered

ST =Threatened

CSC = California Species of Special Concern

CFP = California Fully Protected Species

ATTACHMENT D

Special-Status Species Table

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.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present 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 herb 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 within the project site.
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.
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.

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

Species	Status[1]	Habitat	Potential for Occurrence[2]
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.
San Diego goldenstar *Bloomeria clevelandii*	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.
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.

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

Species	Status[1]	Habitat	Potential for Occurrence[2]
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.	**Low.** Suitable habitat for this annual herb is not present 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.
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.

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

Species	Status[1]	Habitat	Potential for Occurrence[2]
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 and the project site is not within the elevation range of the species.
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 is present in the coastal scrub habitat within the project site; however, no clay soils are present.
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.
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 is present in the coastal scrub habitat within the project site; however, the conditions on the project site are generally described as xeric. .
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 is present in the coastal scrub habitat within the project site; however, the site lacks clay soils.

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 hazardia *Hazardia orcuttii*	FC, ST, CRPR 1B.1	Clay soils within chaparral, coastal scrub. 80-85 m elevation.	**Low.** Suitable habitat is present in the coastal scrub habitat within the project site; however, the site lacks clay soils.
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.
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 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.
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	CRPR 1B.1	Coastal salt marshes and swamps, playas, and vernal pools. 1-1,220 m elevation.	**Low.** Suitable habitat for this annual 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.

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

Species	Status[1]	Habitat	Potential for Occurrence[2]
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.
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.** Coastal scrub habitat is present within the project site and this species is known to occur in coastal scrub habitat; however, the site lacks clay soils to support this species.
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.

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

Species	Status[1]	Habitat	Potential for Occurrence[2]
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.
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.
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. 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 near the coast. 5-300 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Torrey Pines *Pinus torreyana* ssp. *torreyana*	CRPR 1B.2	Sandstone soils within closed-cone coniferous forest and chaparral. 30-160 m elevation.	**Low.** Suitable habitat for this perennial evergreen tree 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.

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Species	Status[1]	Habitat	Potential for Occurrence[2]
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.
Munz's sage *Salvia munzii*	CRPR 2B.2	Chaparral and coastal scrub. 115-1,065 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present within the project site.
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.
Ashy spike-moss *Selaginella cinerascens*	CRPR 4.1	Chaparral and coastal scrub. 20-640 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present within the project site.
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.

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Species	Status[1]	Habitat	Potential for Occurrence[2]
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			
Crotch bumble bee Bombus crotchii		Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	**Low.** Suitable habitat for this annual herb is not present within the project site.
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.
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 because there are no vernal pools present.
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.

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Species	Status[1]	Habitat	Potential for Occurrence[2]
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**. Suitable habitat for this species is not present within the project site.
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.
Southern Western pond turtle *Actinemys pallida*	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.
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.

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Species	Status[1]	Habitat	Potential for Occurrence[2]
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.
Birds			
Cooper's hawk *Accipiter cooperi*	WL	Open, uninterrupted or marginal woodland. Nests primarily in riparian deciduous trees and live oaks.	**Low**. Suitable habitat for this species is not present within the project site.
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.** The project site does not contain the open flat areas preferred by this species. 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 due to the lack of stands of cactus.
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.
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.

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

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Species	Status[1]	Habitat	Potential for Occurrence[2]
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 roosting 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 with friable soils for digging and often associated with washes.	**Low.** The project site is outside the geographic range of this species.
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.
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**. Suitable habitat for this species is not present within 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.

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Species	Status[1]	Habitat	Potential for Occurrence[2]
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 not present in small patches. This species required large areas to range.

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)

APPENDIX C

Phase I Cultural Resources Study

Non Confidential – For Public Review

City of Escondido MF/RO Facility for Agriculture Project

Phase I Cultural Resources Study

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

October 2016

ESA

Non Confidential – For Public Review

City of Escondido MF/RO Facility for Agriculture Project

Phase I Cultural Resources Study

October 2016

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

Prepared by:
ESA
626 Wilshire Blvd., Suite 1100
Los Angeles, CA 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. 4.57 acres

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140480.00

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Executive Summary

City of Escondido MF/RO 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 Membrane Filtration/Reverse Osmosis (MF/RO) Facility (proposed project). The proposed project would include the construction of an MF/RO 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 3.5 miles southeast of the proposed project. The treatment process would produce a high-quality water supply low in total dissolved solids (TDS) and chlorides to local avocado growers. 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) of 1966, as amended. This Phase I cultural resources study has been prepared in support of the IS/MND in compliance with CEQA and Section 106 of the NHPA. The City is the lead agency responsible for compliance with CEQA.

The 4.57-acre project area is located within the City of Escondido, in northwest San Diego County. Specifically, the proposed project is located within Assessor's Parcel Number (APN) 230-141-0100, southeast of the intersection of East Washington Avenue and North Ash Street in an un-sectioned portion of the Valley Center 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle.

A historic architectural/archaeological Area of Potential Effects (APE) was established for the proposed project according to Section 106 of the NHPA in coordination with the City. The horizontal APE encompasses the 4.57-acre project footprint, which includes the entirety of APN 230-141-0100. The vertical APE includes the anticipated maximum depth of ground disturbance of 20 feet and the maximum height of 35 feet above ground surface.

A records search for the proposed project was conducted on August 8, 2016 at the California Historical Resources Information System (CHRIS) South Coastal Information Center (SCIC) housed at San Diego State University. The records search included a review of all recorded cultural resources and previous investigations within a ½-mile radius of the APE. The records search indicates that a total of 11 cultural resources studies have been conducted within ½ mile of

the APE. Of these 11 studies, two included portions of the APE. Approximately 45 percent of the ½-mile records search radius has been included in previous cultural resources surveys. The entire APE appears to have been included in previous cultural resources surveys. The records search indicates that 27 resources have been previously recorded within ½ mile of the APE. All 27 cultural resources are historic-period built resources primarily consisting of private residences. One resource, a structure known as the Escondido Mutual Water District (EMWD) warehouse/shop building (1201 East Washington Avenue), was documented within the APE in 2004. The resource was recommended ineligible for listing in the California Register of Historical Resources (California Register); however, it was found to be eligible for listing in the City's local register. The resource was demolished in 2006 and is no longer present within the APE. The SCIC records search indicates that no archaeological resources have been previously documented within the APE or a ½-mile radius.

A Sacred Lands File (SLF) search for the proposed project was requested from the California Native American Heritage Commission (NAHC) on August 2, 2016. The results provided by the NAHC on August 3, 2016 state that "sites" have been identified within the APE, and that the Iipay Nation of Santa Ysabel should be contacted regarding the sites. No additional details regarding the sites were provided. ESA conducted follow-up correspondence with all individuals and groups indicated by the NAHC as having affiliation with the APE in order to solicit information on Native American cultural resources in the vicinity of the APE. ESA sent outreach letters via certified mail on August 16, 2016 and conducted follow-up phone calls were conducted on August 19, 2016. To date, ESA has received five responses. In a letter dated August 22, 2016, Ms. Shasta Gaughen, Tribal Historic Preservation Officer for the Pala Band of Mission Indians, stated that the proposed project is outside of Pala's Traditional Use Area (TUA) and deferred to groups located in closer proximity to the proposed project. Similarly, in an e-mail dated August 23, 2016, Ms. Hannah Feeney, Archaeological and Archives Technician for the Agua Caliente Band of Cahuilla Indians, indicated that the proposed project is located outside of the Agua Caliente's TUA and deferred to groups located closer to the proposed project. During a phone call on August 19, 2016, Ms. Lisa Contreras, Vice-Chairperson for the Inaja Band of Mission Indians, stated that she has no questions or comments regarding the proposed project. During a phone call on August 19, 2016, Mr. Joseph Ontiveros, Cultural Resources Department Representative for the Soboba Band of Luiseño Indians (Soboba), stated that Soboba defers to groups in closer proximity to the proposed project. In an e-mail dated September 22, 2016, Vincent Whipple, Cultural Resources Manager for the Rincon Band of Mission Indians (Rincon), stated that the proposed project is located within Rincon's area of cultural interest and requested that he be kept up to date regarding cultural resources identified within the APE.

In addition to ESA's Native American outreach, the City sent letters via e-mail on August 22, 2016 to the San Luis Rey Band of Mission Indians (San Luis Rey), Rincon, and Soboba, inviting the three Tribes to consult with the City pursuant to PRC 21080.3.1 (AB 52). To date, one written response has been received from Vincent Whipple. In an e-mail dated September 22, 2016, Mr. Whipple requested that a Luiseño tribal monitor be present during all proposed project-related ground disturbance. In addition, on August 11, 2016, City staff informally met with Carmen (Cami) Mojado, Cultural Resources Manager for the San Luis Rey and Merri Lopez-Keifer, Chief Legal Counsel for the San Luis Rey. Ms. Mojado and Ms. Lopez-Keifer indicated that they would

not need additional consultation provided that recommended mitigation measures provided by San Luis Rey were incorporated into the IS/MND. In a follow-up phone call conducted by City staff on October 5, 2016, Ms. Mojado reiterated that additional consultation would not be required if the City incorporated the mitigation measures provided by San Luis Rey into the IS/MND.

A desktop geoarchaeological review of APE was conducted for the proposed project and indicates that the soils underlying the APE are deep and that there is the potential for alluvial deposits from Escondido Creek to have buried and preserved archaeological resources within the APE. Throughout prehistory Escondido Creek would have supported plant and animal resources, periodically provided water, and would have served to attract people to the area on a seasonal basis. Archaeological remains of human activities would have the potential to have become buried and preserved by alluvium. As such, the APE is considered to have a high sensitivity for buried archaeological resources.

A cultural resources survey of the APE was conducted on August 15, 2016. The survey was aimed at identifying surface evidence of archaeological materials and historic-period built features. The entire APE was subject to a systematic pedestrian survey with transects spaced at no greater than 10-meter intervals (approximately 30 feet). The APE consists of flat topography and appears to be heavily disturbed as indicated by the presence of gravels and recently graded or excavated dirt. Compacted gravel covers much of the western half of the APE; the eastern half consists of soils that appear to have been recently excavated or graded. The perimeter of the APE is covered in patches of non-native grasses. The lack of vegetation within the APE resulted in ground surface visibility that ranged from 90-100 percent; however, the compacted gravel obscured the ground surface in the western portion of the APE resulting in 0 percent visibility. No indication of the EMWD shop/warehouse building was observed. No cultural resources were identified as a result of the survey.

One cultural resource, the EMWD shop/warehouse (1201 Washington Avenue) was identified as having been previously documented within the APE; however, the building was demolished in 2006 and no evidence of it remains in the APE. No known resources are currently within the APE. As such, the proposed project would result in **No Historic Properties Affected** under Section 106 of the NHPA and no impact to known historical resources or unique archaeological resources.

The results of this study indicate that the proposed project APE should be considered highly sensitive for the presence of buried unknown archaeological resources. The geoarchaeological review concluded that Escondido Creek would have supported plant and animal resources, periodically provided water, and would have served to attract people on a seasonal basis, and that archaeological remains of human activities would have the potential to have become buried and preserved by alluvium. There may also be historic-era foundations or refuse deposits related to the previous building that was located onsite. Additionally, the SLF results provided by the NAHC indicate the presence of "sites" within the APE. Project-related ground disturbance, which will extend to a depth of 20 feet below the ground surface, has the potential to uncover unknown buried archaeological resources. Impacts to archaeological resources that qualify as historic properties under Section 106 of the NHPA, or historical or unique archaeological resources under CEQA could result in an adverse effect or significant impact. Therefore, ESA recommends construction worker cultural resources training, archaeological and Native American monitoring, and cease work and treatment measures in the case of inadvertent discoveries. In addition, the San Luis Rey Band of Mission Indians provided the City with recommended mitigation measures, and they are provided in the *Summary and Recommendations* section at the close of this report.

City of Escondido MF/RO 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 Membrane Filtration/Reverse Osmosis (MF/RO) Facility (proposed project). The proposed project would include the construction of an MF/RO 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 3.5 miles southeast of the proposed 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 MF/RO 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 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) of 1966, as amended. This Phase I cultural resources study has been prepared in support of the IS/MND in compliance with CEQA and Section 106 of the NHPA. The City is the lead agency responsible for compliance with CEQA.

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; and Chris Lockwood, Ph.D., R.P.A, geoarchaeologist. Resumes of key personnel are provided in **Appendix A**.

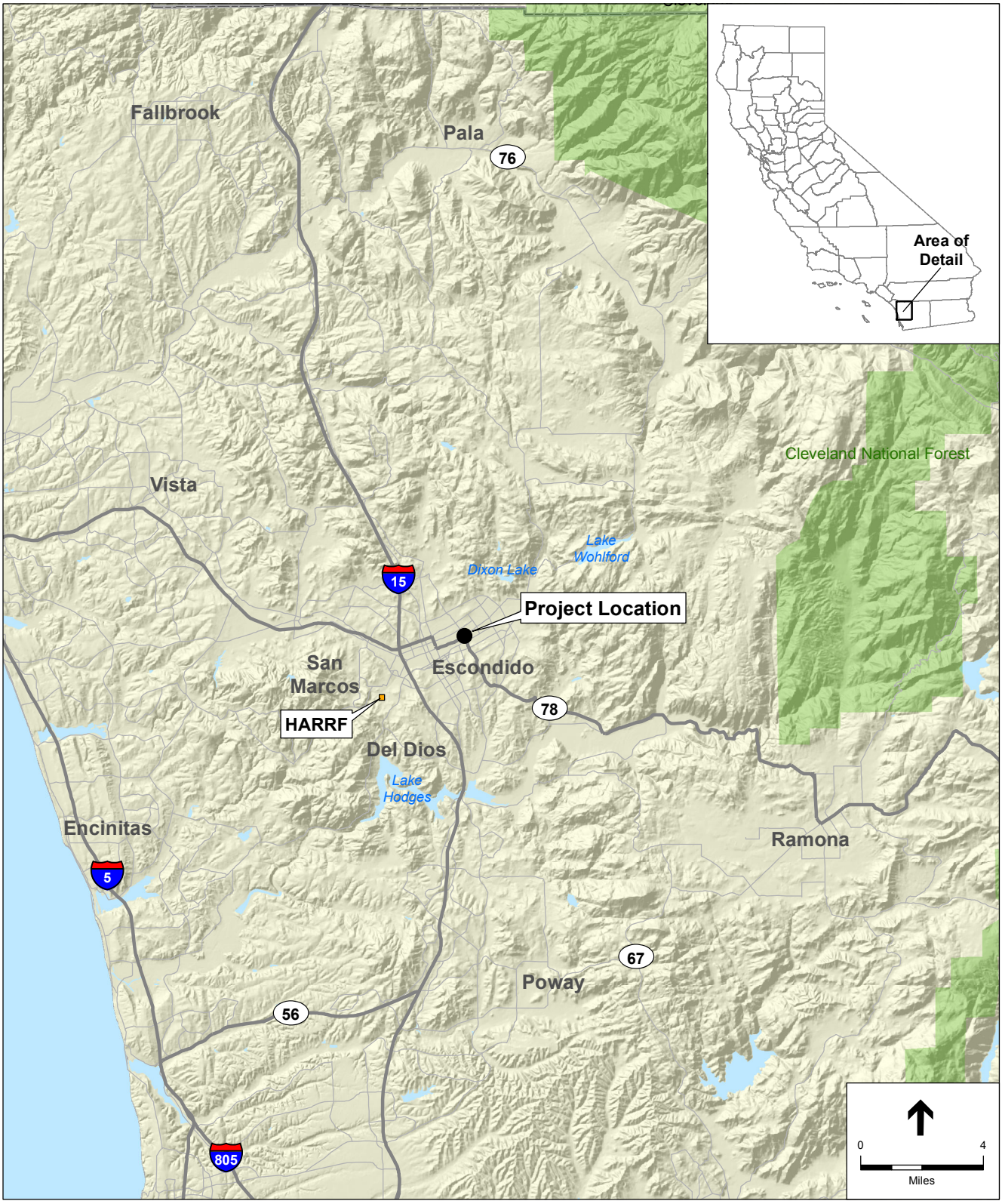
Project Location

The 4.57-acre project site is located within the City of Escondido, in northwest San Diego County (**Figure 1**). Specifically, the proposed project is located within Assessor's Parcel Number (APN) 230-141-0100, southeast of the intersection of East Washington Avenue and North Ash Street in an un-sectioned portion of the Valley Center 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle (**Figure 2**).

Project Description

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., UF membranes) and 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 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 commercial/industrial-like buildings, the MF/RO Process Building, to house the MF/RO equipment, pumps, electrical rooms, control rooms, and meeting rooms that includes a restroom, kitchenette, and janitor closet. The Chemical Building would house the chemical storage and transfer pumps. Because the project site is located within a commercially zoned area, a Conditional Use Permit would be required 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.

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. Each component is further described below.

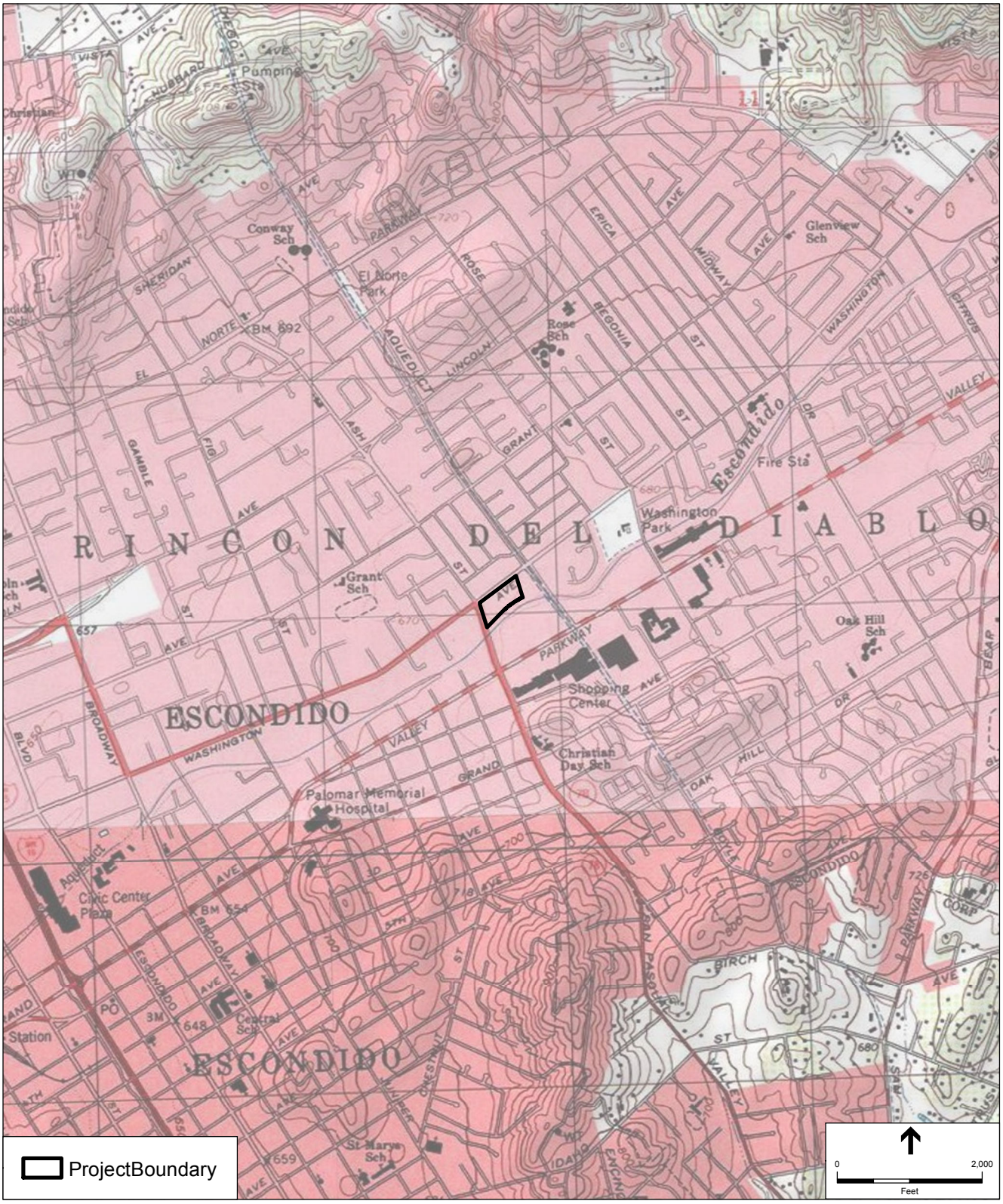


SOURCE: ESRI.

Escondido MFRO for Agriculture Project . 140480.00

Figure 1

Regional Location



TOPOQUAD: Valley Center and Escondido USGS 7.5-minute Topo Quads

Escondido MFRO for Agriculture Project. 140480.00

Figure 2

Project Location

Project Components

Influent Pipeline

A newly constructed 18,720 feet long 24-inch diameter pipeline would convey HARRF Title 22 recycled water to the MF/RO Facility. The project would connect to the existing influent pipeline located adjacent to the Escondido Creek Channel along the southern side of the project site (Recycled Water Easterly Main Extension Project). Exposed influent piping would be located adjacent to the surge tank. The piping would include the influent supply pipeline for the MF Influent Tank, the storm flow bypass pipeline to the Product Water Tank, and the Title 22 recycled water bypass and RO permeate pipelines to the Product Water Tank. The Title 22 recycled water bypass and RO permeate pipelines would blend to provide the desited water quality for the agriculture users. Each pipe train would include an isolation valve, motor operated valve, flow meter, combination air valves, and a pressure reducing valve.

Facility Buildings

The MF/RO Process Building would be approximately 21,660 square feet with dimensions of approximately 190 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, and administration meeting room. Two restrooms would also be provided. All pumps would be located indoors to provide appropriate noise attenuation and to address potential noise concerns. Piping within the building, where the mechanical piping leaves a process to be conveyed to another process, would be located in a grating covered concrete pipe trench.

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 chemical areas in the Chemical Storage Building would be separated into acids and bases such that incompatible chemicals are kept separate. There would be two separate areas for the basic chemicals and two containment areas for the acidic chemicals. These areas would be oriented such that a noncombustible partition could be installed to keep them separate. The sulfuric acid would be stored in the Chemical Storage Building in a dedicated room.

Buildings and structures would be approximately 35 feet to top of roof ridgeline. Tanks would be located on the southwestern portion of the site with maximum heights of 30 feet. Buildings and other onsite facilities would be setback from the property line per General Commercial Development Standard setback criteria. The proposed buildings would have stucco, aluminum window framing, and Spanish roof tile.

MF/UF Influent Tank

A 300,000 gallon feed tank (50 feet in diameter by 25 feet tall, with the potential to be partially buried 10 feet below finished grade) 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.

Surge Tank

Surge mitigation improvements would include a surge tank with supporting compressed air system. The surge tank would control surge pressures in the 24-inch high service pump discharge transmission pipeline. The steel pressure tank would be approximately 2,150 cubic feet. It would be located outdoors adjacent to the Interprocess Storage Tank. The air compressors would be located in the Chemical Storage Building and would use food-grade lubrication

Feed Pump Station

The MF/RO 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 160,000 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 40 feet in diameter and 20 feet tall, with the potential to be partially buried 10 feet below finished grade.

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 3-6 months to once per year.

RO Flush System

When an RO train is shut down 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 inside the MF/RO Process Building:

- 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 pre-stressed concrete tank would be installed onsite for blend and storage purposes. The overall tank dimensions would be 72 feet in diameter and 30 feet tall, with the potential to be partially buried 10 feet below finished grade. The product water tank would provide a total useable storage volume of approximately 820,000 gallons.

Onsite Pipeline Corridor

Pipelines entering the project site from the channel or south side include the HARRF reuse influent pipeline, brine/reject waste return pipeline, agriculture supply pipeline, storm drain, and fiber optic conduit. Potable water, electric and gas would enter from East Washington Avenue.

All process piping between buildings would be buried within a trench. Chemical feed piping between the buildings would be located in a grating covered concrete pipe trench.

Brine Waste Pipeline

MF/RO treatment process waste streams include MF/UF backwash, RO concentrate, and RO CIP that would be collected and conveyed back to the HARRF outfall through an existing 16-inch brine pipeline.

Storm Drain

An existing 69-inch storm drain is located in North Ash Street with a 24-inch branch to a curb inlet at the corner of North Ash Street and East Washington Avenue. The Escondido Creek Flood Control drainage channel is also located south of the project site. The project would include an onsite storm water pond 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. The project would include one connection to the Escondido Creek Flood Control drainage channel to convey water from the stormwater pond.

Tank Overflow/Drain Pipelines

A second connection would be for the tank overflow/drain pipelines. Each tank would have an overflow and drain pipeline, and the pipelines would combine together into a single pipeline for connection to the Escondido Creek Flood Control drainage channel.

Sanitary Sewer

Waste streams including strainer backwash, MF/UF CIP neutralized waste and RO flush waste, as well as sanitary sewer waste that would be discharged to a proposed onsite waste equalization wetwell prior to discharge to the sanitary sewer and conveyed to the HARRF for treatment. The proposed sewer system would convey wastewater flows to the existing 27-inch pipe located on the north side of the channel. 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 City's Hogback Reservoir located on a hilltop east of the City limits in unincorporated San Diego County south of Mountain View Drive 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.

Wall and Fencing

The proposed project would include security walls and fencing. The existing chain link fence along the property line would be replaced with 6-foot-high steel fencing with vertical bars and top pickets. The ornamental fencing would be placed along the southern boundary and along North

Ash Street and East Washington Avenue. The existing wooden fence between the project site and residential property to the east would be demolished and replaced with a new 6-foot concrete masonry unit (CMU) block wall.

Landscaping

The proposed project may remove existing trees onsite and along North Ash Street and East Washington Avenue. New perimeter ornamental landscaping would buffer and minimize views the proposed facility components and consist of low maintenance, low demand and fast-growing plantings including trees. 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 the landscape design.

Project Construction

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

Multiple tanks and vaults would be constructed on site. Tank excavations would be limited to a depth of 12 feet below finished grade. The maximum width for tank excavation would be approximately 92 feet in diameter. Groundwater is approximately 15 feet below finished grade. If groundwater is encountered during construction, dewatering would be required. Groundwater would be disposed of to the existing City sewer for treatment.

Building Foundations

Slabs on grade would be supported with a 6-inch layer of untreated aggregate base overlain by a 10-millimeter thick impermeable plastic membrane. The tank and building foundations would be supported on 3 feet of geogrid reinforced soil (geogrid spaced at 12 inch intervals in the soil). Onsite soils could be used for fill, compacted to 90 percent of its maximum dry density.

Area of Potential Effects

A historic architectural/archaeological Area of Potential Effects (APE) was established for the proposed project according to Section 106 of the NHPA in coordination with the City (**Figure 3**). 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 4.57-acre project footprint, which includes the entirety of APN 230-141-0100. The vertical APE includes the anticipated maximum depth of ground disturbance of 20 feet below ground surface and the maximum height of the facility buildings of 35 feet above ground surface.

Source: ESRI

Escondido MFRO for Agriculture Project. 140480.00

Figure 3

Area of Potential Effects

Regulatory Framework

Federal

Section 106 of the National Historic Preservation Act

Archaeological resources are protected through the NHPA of 1966, as amended (54 United States Code of Laws [USC] 300101 et seq.), 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 Public Resources Code Section 21080.3.1

California PRC Section 21080.3.1, as amended by Assembly Bill (AB) 52 requires lead agencies to consider the effects of projects on tribal cultural resources and to conduct consultation with federally and nonfederally recognized Native American Tribes early in the environmental planning process, and applies specifically to projects for which a Notice of Preparation (NOP) or a notice of Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015.

The goal of PRC Section 21080.3.1 is to include California Tribes in determining whether a project may result in a significant impact to tribal cultural resources that may be undocumented or known only to the Tribe and its members. A project that may cause a substantial adverse change in the significance of a tribal cultural resource (sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe) is a project that may have a significant effect on the environment. PRC Section 21080.3.1 defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources (PRC Section 21074 (a)(1)).

PRC Section 21080.3.1 requires that prior to determining whether a Negative Declaration, MND, or Environmental Impact Report (EIR) is prepared for a project, the lead agency must consult with California Native American Tribes, defined as those identified on the contact list maintained by the NAHC, who are traditionally and culturally affiliated with the geographic area of the proposed project, and who have requested such consultation in writing. The following is what the scope of consultation may include according to PRC Section 21080.3.2(a):

- The type of environmental review necessary
- The significance of tribal cultural resources
- The significance of the project's impacts on the tribal cultural resources
- Project alternatives or the appropriate measures for preservation
- Recommended mitigation measures

PRC Section 21080.3.1 outlines the required procedures concerning consultation (PRC §21080.3.1(d) and (e)) including the initiation and conclusion of consultation. Consultation should be initiated by a lead agency within 14 days of determining that an application for a project is complete or that a decision by a public agency to undertake a project. The lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American Tribes that have requested notice. At the very least the notice should consist of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American Tribe has 30 days to request consultation pursuant to this section. The lead agency shall begin the consultation process within 30 days of receiving a California Native American Tribe's request for consultation. According to PRC

Section 21080.3.2(b), consultation is considered concluded when either the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

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)

Setting

Environmental Setting

The APE is located in an approximately 4.57-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 4.25 miles northeast of the APE, to the lower end of San Elijo Canyon, located approximately 7.25 miles southwest of the APE (Carlsbad Watershed Network, 2004). The APE lies within the center portion of the middle basin, a broad and flat area occupied by urban development associated with the City (Carlsbad Watershed Network, 2004). Prior to urban development, the 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.

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 coasts 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 diverse environments 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 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 4.25 miles northeast of the proposed project (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.

Archival Research

SCIC Records Search

A records search for the proposed project was conducted on August 8, 2016 at the CHRIS SCIC housed at San Diego State University (**Confidential Appendix B**). The records search included a review of all recorded cultural resources and previous investigations within a ½-mile radius of the APE. The records search included a review of California Points of Historical Interest, California Historical Landmarks, the California Register, the National Register, and the California State Historic Resources Inventory listings.

Previous Cultural Resources Investigations

The records search indicates that 11 cultural resources studies have been conducted within ½ mile of the APE (**Table 1**). Of these 11 studies, two included portions of the APE. Approximately 45 percent of the ½-mile records search radius has been included in previous cultural resources surveys. The entire APE appears to have been included in previous cultural resources surveys.

TABLE 1
PREVIOUS CULTURAL RESOURCES STUDIES WITHIN ½ MILE OF THE APE

Author	Report # (SD-)	Title	Year
Beard, Vicki R.	12443	*A Cultural Resources Survey for the Crossings at Elder Place Housing Project Escondido, San Diego County, California*	2009
Chace, Paul G.	00429	*An Archaeological and Historical Survey of the Lincoln Ash Interim Facility in the City of Escondido, California*	1977
Corum, Joyce M.	00478	*An Archaeological Survey Report for a Proposed Interstate 15 Crossing Rancho Bernardo*	1978
Donald A. Cotton Associates	14394	*Survey Report on Historic/Cultural Resources, City of Escondido*	1983
Keller Environmental Associates	08596	*Appendices - Reclaimed Water Distribution System Project: Draft Environmental Impact Report*	1992
Kyle, Carolyn	09077	*Cultural Resource Assessment of Cingular Wireless Facility SD729-03, City of Escondido, San Diego County, California*	2002
Levine, Hedy	14692	*Interior Renovations Escondido Medical Family Office, 255 North Ash Street, Escondido, San Diego County, California*	2012
McGinnis, Patrick	09457	*1325 E. Grand Avenue: Historical Evaluation*	2004
Pigniolo, Andrew R. and John Dietler	13261*	*An Archaeological Survey of the Ash Street Bicycle Undercrossing Project, City of Escondido, California*	2011
Price, Harry J.	09763*	*Historic Building survey of the Escondido Mutual Water District Shop/Warehouse, 1201 East Washing Avenue, Escondido*	2004
Wilson, Stacie	14328	*Letter Report: ETS 20872 Cultural Resources Monitoring for TL6956 Undergrounding Trench Excavation, city of Escondido, California*	2013

*Indicates study overlapping APE

Previously Recorded Cultural Resources

The records search indicates that 27 resources have been previously recorded within ½ mile of the APE (**Table 2**). All 27 resources are historic-period built resources primarily consisting of private residences. One resource, a structure known as the Escondido Mutual Water District (EMWD) warehouse/shop building (1201 East Washington Avenue), was documented within the APE in 2004. The resource was recommended ineligible for listing in the California Register of Historical Resources (California Register); however, it was found to be eligible for listing in the City's local register. The resource was demolished in 2006 and is no longer present within the APE. The SCIC records search indicates that no archaeological resources have been previously documented within the APE or a ½-mile radius.

TABLE 2
PREVIOUSLY RECORDED RESOURCES WITHIN ½ MILE OF THE APE

Primary # (P-37-)	Trinomial (CA-SDI-)	Other Designation	Description	Distance from APE
018685	-	427 North Beech Street	Historic-period built resource consisting of a residence constructed in 1935	0.18 miles
-	-	321 North Cedar Street	Historic-period built resource consisting of a residence constructed in 1940	0.29 miles
012874	-	128 North Cedar Street	Historic-period built resource consisting of a residence constructed in 1920	0.39 miles
-	-	810 East Grand Avenue	Historic-period built resource consisting of a residence constructed in 1920	0.50 miles
-	-	818 East Grand Avenue	Historic-period built resource consisting of a residence constructed in 1920	0.49 miles
-	-	827 East Grand Avenue	Historic-period built resource consisting of a residence constructed in 1925	0.50 miles
-	-	936 East Grand Avenue	Historic-period built resource consisting of a residence constructed in 1940	0.41 miles
-	-	942 East Grand Avenue	Historic-period built resource consisting of a residence constructed in 1920	0.42 miles
-	-	958 East Grand Avenue	Historic-period built resource consisting of a residence constructed in 1920	0.40 miles
-	-	1002 East Grand Avenue	Historic-period built resource consisting of a residence constructed in 1938	0.38 miles
-	-	1127 East Grand Avenue	Historic-period built resource consisting of a residence constructed in 1920	0.39 miles
-	-	1225 East Grand Avenue	Historic-period built resource consisting of a residence constructed in 1910	0.40 miles
-	-	1294 East Grand Avenue	Historic-period built resource consisting of a residence constructed in 1888	0.38 miles
-	-	829 East Ohio Avenue	Historic-period built resource consisting of a residence constructed in 1890	0.45 miles
-	-	1143 East Ohio Avenue	Historic-period built resource consisting of a residence constructed in 1930	0.28 miles
-	-	1018 East Pennsylvania Avenue	Historic-period built resources consisting of a residence constructed in 1935	0.28 miles
-	-	1035 East Pennsylvania Avenue	Historic-period built resource consisting of a residence constructed in 1935	0.29 miles
-	-	1101 East Pennsylvania Avenue	Historic-period built resource consisting of a residence constructed in 1920	0.26 miles
-	-	430 North Rose Street	Historic-period built resource consisting of the Human Services Center building	0.37 miles
017766	-	954 East Second Avenue	Historic-period built resource consisting of a residence constructed in 1910	0.47 miles
017767	-	1017 East Second Avenue	Historic-period built resource consisting of a residence known as the Alley House constructed in 1920	0.49 miles
-	-	1561 East Valley Parkway	Historic-period built resource consisting of a structure constructed in 1925	0.33 miles
-	-	1016 East Valley Parkway	Historic-period built resource consisting of a residence constructed in 1930	0.22 miles
-	-	1004 East Valley Parkway	Historic-period built resource consisting the Christos Café constructed in 1935	0.25 miles
-	-	1157 East Valley Parkway	Historic-period built resource consisting of a residence constructed in 1920	0.15 miles

Primary # (P-37-)	Trinomial (CA-SDI-)	Other Designation	Description	Distance from APE
-	-	1201 East Washington Avenue	Historic-period built resource consisting of the EMWD maintenance building constructed in 1940 (demolished 2006)	within
-	-	1289 East Washington Avenue	Historic-period built resource consisting of the Mutual Orange Distributors building constructed in 1930	175 feet

Historical Map and Aerial Review

Historic maps and aerial photographs were examined in order to provide historical information about the APE and to contribute to an assessment of the APE's archaeological sensitivity. Available maps include: 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 APE from 1947, 1967, 1980, 1989, 2005, and 2009 were also examined (historicaerials.com, 2016). In addition, Sanborn Fire Insurance maps from 1892, 1896, 1907, 1911, 1927, and 1949 were reviewed; however, the maps did not include the APE or its immediate vicinity.

The 1893 and 1901 Escondido 15-minute topographic maps, as well as the 1901 San Luis Rey 30-minute topographic map, show the APE as being located in the very northeast portion of Escondido, north of Escondido Creek. A number of generally northwest-southeast and northeast-southwest trending roads are indicated in the immediate vicinity of the APE, though very few structures are depicted. The 1948 Valley Center 7.5-minute topographic map depicts the APE as being bounded by Escondido Creek to the south, Washington Avenue to the north, and Ash Street to the west. A number of structures are indicated in the immediate vicinity of the APE, and a structure, likely the EMWD shop/warehouse building, is located within the APE. The 1968 Valley Center 7.5-minute topographic map shows a greater density of structures and streets in the immediate vicinity of the APE, indicating the growth of Escondido.

The 1947 aerial photograph shows the EMWD shop/warehouse building encompassing the northwest quadrant of the APE. The portion of the APE surrounding the building appears to consist of a compacted dirt or gravel parking lot. The remainder of the APE appears to be largely vegetated and undisturbed. A number of buildings, likely residences, are depicted immediately north and west of the APE on the northern and western sides of Washington Avenue and Ash Street, respectively. However, development of the area appears to be very sparse and a number of empty lots and orchards are depicted. The 1967 aerial photograph shows that the remainder of the APE has been developed as indicated by a lack of vegetation and the possible paving of the eastern half. Residential development in the immediate vicinity of the APE has increased dramatically as indicated by a number of new subdivisions and roads. The 1980 aerial photograph shows that little has changed within the APE, though residential and commercial development surrounds the entire APE. Additionally, Escondido Creek, located immediately south of the APE, appears to have been channelized. The 1989 and 2005 photographs show an apartment building immediately east of the APE. The 2009 aerial photograph shows that the EMWD shop/warehouse building is no longer present, and the APE appears to be largely devoid of vegetation

In sum, the historic map and aerial photograph review indicates that the immediate vicinity around the APE in the first half of the 20th century remained largely rural. However, by the 1960s it appears that residential and commercial development increased dramatically, and by the 1980s the APE was surrounded by subdivisions. Although the immediate vicinity around the APE was largely developed in the latter half of the 20th century, the APE remained static with the only development consisting of the construction of the EMWD shop/warehouse in the 1940s and its demolition in 2006.

Native American Outreach

A Sacred Lands File (SLF) search for the proposed project was requested from the NAHC on August 2, 2016. The results provided by the NAHC on August 3, 2016 state that "sites" have been identified within the APE, and that the Iipay Nation of Santa Ysabel should be contacted regarding the sites. No additional details regarding the sites were provided. The letter also included an attached list of Native American contacts. ESA conducted follow-up correspondence with all individuals and groups indicated by the NAHC as having affiliation with the APE in order to solicit information on Native American cultural resources in the vicinity of the APE. Documentation pertaining to Native American outreach is attached as **Appendix C**.

ESA sent outreach letters via certified mail on August 16, 2016. The letters described the proposed project and included a map depicting the location of the APE. Recipients were requested to reply with any information concerning Native American cultural resources that might be affected by the proposed project. Follow-up phone calls were conducted on August 19, 2016. **Table 3** provides a summary of ESA's outreach efforts.

TABLE 3
SUMMARY OF ESA'S NATIVE AMERICAN OUTREACH

Contact	Tribe/Organization	Date Letter Mailed	Date of Follow-up Contact	Response
Jeff Grubbe, Chairperson	Agua Caliente Band of Cahuilla Indians	8/16/2016	8/19/2016	Ms. Feeney indicated that the Aqua Caliente defer to tribes in closer proximity to the Project
Patricia Garcia-Plotkin, Tribal Historic Preservation Officer	Agua Caliente Band of Cahuilla Indians	8/16/2016	8/19/2016	SW with tribal receptionist and left message for Patricia Garcia-Plotkin, Tribal Historic Preservation Officer. No response to date
Clifford LaChappa, Chairperson	Barona Group of the Capitan Grande	8/16/2016	8/19/2016	Left message with Mr. LaChappa's assistant. No response to date
Ralph Goff, Chairperson	Campo Band of Mission Indians	8/16/2016	8/19/2016	Left VM. No response to date
Robert Pinto, Chairperson	Ewiiaapaayp Tribal Office	8/16/2016	8/19/2016	Phone number provided is no longer in service
Michal Garcia, Vice Chairperson	Ewiiaapaayp Tribal Office	8/16/2016	8/19/2016	Phone number provided is no longer in service
Virgil Perez, Chairperson	Iipay Nation of Santa Ysabel	8/16/2016	8/19/2016	Left VM inquiring about sites indicated by the NAHC. No response to date
Rebecca Osuna, Chairperson	Inaja Band of Mission Indians	8/16/2016	8/19/2016	SW Vice Chairperson, Lisa Contreras. Ms. Contreras stated that she has no questions or comments regarding the Project
Erica Pinto, Chairperson	Jamul Indian Village	8/16/2016	8/19/2016	Left VM. No response to date

Contact	Tribe/Organization	Date Letter Mailed	Date of Follow-up Contact	Response
Carmen Lucas	Kwaaymii Laguna Band of Mission Indians	8/16/2016	8/19/2016	Left VM. No response to date
Thomas Rodriguez, Chairperson	La Jolla Band of Luiseño Indians	8/16/2016	8/19/2016	Left VM. No response to date
Gwendolyn Parada, Chairperson	La Posta Band of Mission Indians	8/16/2016	8/19/2016	Left VM. No response to date
Javaughn Miller, Tribal Aministrator	La Posta Band of Mission Indians	8/16/2016	8/19/2016	Left VM. No response to date
Angela Elliott Santos, Chairperson	Manzanita Band of Kumeyaay Nation	8/16/2016	8/19/2016	Left VM. No response to date
Virgil Oyos, Chairperson	Mesa Grand Band of Mission Indians	8/16/2016	8/19/2016	Left VM. No response to date
Shasta Gaughen, Tribal Historic Preservation Officer	Pala Band of Mission Indians	8/16/2016	8/19/2016	Ms. Gaughen indicated that Pala defers to tribes in closer proximity to the Project
Temet Auilar, Chairperson	Pauma Band of Luiseño Indians	8/16/2016	8/19/2016	Mr. Aguilar's voice mailbox was full and VM could not be left.
Mark Macarro, Chairperson	Pechanga Band of Mission Indians	8/16/2016	8/19/2016	Left a message with Mr. Macarro's assistant. No response to date
Bo Mazzetti, Chairperson	Rincon Band of Mission Indians	8/16/2016	8/19/2016	Left VM. Vincent Whipple, cultural resources manager, responded via e-mail on September 22, 2016.
Jim McPherson, Tribal Historic Preservation Officer	Rincon Band of Mission Indians	8/16/2016	8/19/2016	Left VM. No response to date. Vincent Whipple, cultural resources manager, responded via e-mail on September 22, 2016.
Tribal Council	San Luis Rey Band of Mission Indians	8/16/2016	8/19/2016	SW Carmen Mojado of the Cultural Resources Department. Ms. Mojado stated that she would call back with any information. No response to date.
Allen E. Lawson, Chairperson	San Pasqual Band of Mission Indians	8/16/2016	8/19/2016	Left VM. No response to date
Joseph Ontiveros, Cultural Resources Department	Soboba Band of Luiseño Indians	8/16/2016	8/19/2016	SW Mr. Ontiveros. Soboba Band defers to tribes in closer proximity to the Project
Carrie Garcia, Cultural Resources Manager	Soboba Band of Luiseño Indians	8/16/2016	8/19/2016	As indicated by Mr. Ontiveros, the Soboba Band defers to groups closer to the Project
Cody J. Martinez, Chairperson	Sycuan Band of the Kumeyaay Nation	8/16/2016	8/19/2016	Left VM. No Response to date
Robert J. Welch, Chairperson	Viejas Band of Kumeyaay Indians	8/16/2016	8/19/2016	Left VM. No Response to date

SW = spoke with; VM = voice mail

To date, ESA has received five responses. In a letter dated August 22, 2016, Ms. Shasta Gaughen, Tribal Historic Preservation Officer for the Pala Band of Mission Indians, stated that the proposed project is outside of Pala's Traditional Use Area (TUA) and deferred to groups located in closer proximity to the proposed project. Similarly, in an e-mail dated August 23, 2016, Ms. Hannah Feeney, Archaeological and Archives Technician for the Agua Caliente Band of Cahuilla Indians, indicated that the proposed project is located outside of the Agua Caliente's TUA and deferred to groups located closer to the proposed project. During a phone call on August 19, 2016, Ms. Lisa Contreras, Vice-Chairperson for the Inaja Band of Mission Indians, stated that she has no questions or comments regarding the proposed project. During a phone call on August 19, 2016, Mr. Joseph Ontiveros, Cultural Resources Department Representative for the

Soboba Band of Luiseño Indians (Soboba), stated that Soboba defers to groups in closer proximity to the proposed project. In an e-mail dated September 22, 2016, Vincent Whipple, Cultural Resources Manager for the Rincon Band of Mission Indians (Rincon), stated that the proposed project is located within Rincon's area of cultural interest and requested that he be kept up to date regarding cultural resources identified within the APE.

In addition to ESA's Native American outreach, the City conducted additional formal and informal consultation with several Native American tribes. On August 23, 2016 the City sent letters via e-mail to the San Luis Rey Band of Mission Indians (San Luis Rey), Rincon, and Soboba, inviting the three Tribes to consult with the City pursuant to PRC 21080.3.1 (AB 52). To date, one response has been received from Vincent Whipple. In an e-mail dated September 22, 2016, Mr. Whipple requested that a Luiseño tribal monitor be present during all proposed project-related ground disturbance.

City staff also met informally with Carmen (Cami) Mojado, Cultural Resources Manager for the San Luis Rey and Merri Lopez-Keifer, Chief Legal Counsel for the San Luis Rey on August 11, 2016. City staff provided Ms. Mojado and Ms. Lopez-Keifer background on the proposed project and informed them that the City would be sending out letters initiating formal government-to-government consultation pursuant to PRC 21080.3.1 (AB 52). Ms. Mojado and Ms. Lopez-Keifer indicated that they would not need additional consultation provided that recommended mitigation measures provided by San Luis Rey were incorporated into the IS/MND. In a follow-up phone call conducted by City staff on October 5, 2016, Ms. Mojado reiterated that additional consultation would not be required if the City incorporated the mitigation measures provided by San Luis Rey into the IS/MND.

Geoarchaeological Review

A desktop geoarchaeological review was conducted by ESA geoarchaeologist, Chris Lockwood, Ph.D., R.P.A. The following paragraphs present the results of Dr. Lockwood's research.

Geology

The APE is located within the Peninsular Ranges geomorphic province, which is dominated granitic bedrock from the Mesozoic-period (252-66 million years ago) (Tan and Kennedy, 1999). The APE is on the floodplain of Escondido Creek. The creek has been channelized in the vicinity of the APE, but naturally would have transported sediments eroded from the mountains to the east and deposited them to form a westward-trending alluvial fan. A review of historic aerial photos and maps show that the channel remained in essentially the same location and form from 1893 until at least 1967; the stream was stabilized and channelized sometime between 1967 and 1980. The APE is underlain by old alluvial floodplain deposits (*Qoa*), which date to the middle to late Pleistocene (Kennedy et al., 2007). However, it is likely that areas of recent alluvial deposits are present as well.

Soils

Soils within the APE are mapped as Reiff fine sandy loam (NRCS, 2016). The Reiff series consists of very deep, well drained soils formed in coarse- to medium-textured alluvial parent material weathered from mixed sources. Reiff soils are on flood plains and alluvial fans. The typical soil pedon consists of:

- 0-3 inches: Very fine sandy loam (Ap horizon)
- 3-16 inches: Loam (A horizon)
- 16-24 inches: Fine sandy loam (AC horizon)
- 24-43 inches: Fine sandy loam (C1 horizon)
- 43-60 inches: Fine sandy loam (C2 horizon)

The absence of a soil B-horizon may be due to the soil parent material having a young age. It may also be due in part to the effects of historic agriculture, which would have acted to obscure any soil weathering front. Regardless, there appears to be potential for alluvial deposits from Escondido Creek to have buried and preserved archaeological resources.

Potential for Buried Resources

The APE is considered to have a high sensitivity for buried archaeological resources. Escondido Creek would have supported plant and animal resources, periodically provided water, and would have served to attract people on a seasonal basis. Archaeological remains of human activities would have the potential to have become buried and preserved by alluvium.

Cultural Resources Survey

Methods

A cultural resources survey of the APE was conducted by ESA archaeologist Michael Vader, B.A., on August 15, 2016. The survey was aimed at identifying surface evidence of archaeological materials and historic-period built features. The entire APE was subject to a systematic pedestrian survey with transects spaced at no greater than 10-meter intervals (approximately 30 feet).

Survey Results

The APE consist of flat terrain and appears to have been heavily disturbed as indicated by the presence of gravels and recently graded or excavated dirt (**Figure 4**). Compacted gravel covers much of the western half of the APE; the eastern half consists of soils that appear to have been recently excavated or graded (**Figure 5**). The perimeter of the APE is covered in patches of non-native grasses (**Figure 6**). The lack of vegetation within the APE resulted in ground surface visibility that ranged from 90-100 percent; however, the compacted gravel in the western portion of the APE obscured the ground surface resulting in 0 percent visibility. No indication of the

EMWD shop/warehouse building was observed. No cultural resources were identified as a result of the survey.

Source: ESRI

Escondido MFRO for Agriculture Project. 140480.00

Figure 4

Survey Conditions

Overview of compacted gravel in eastern portion of APE (view to north)

Overview of graded/excavated dirt in western portion of APE (view to NE)

SOURCE: ESA, 2016

Escondido MFRO for Agriculture Project 140480.00

Figure 5
Survey Photos

Overview of non-native grasses along perimeter of APE (view to north)

SOURCE: ESA, 2016

Escondido MFRO for Agriculture Project 140480.00

Figure 6
Survey Photos

Summary and Recommendations

Known Resources

One cultural resource, the EMWD shop/warehouse (1201 Washington Avenue) was identified as having been previously documented within the APE; however, the building was demolished in 2006 and no evidence of it remains in the APE. No known resources are currently within the APE. As such, the proposed project would result in **No Historic Properties Affected** under Section 106 of the NHPA and no impact to known historical resources or unique archaeological resources.

Unknown Resources

The results of this study indicate that the proposed project APE should be considered highly sensitive for the presence of buried unknown archaeological resources. The geoarchaeological review concluded that Escondido Creek would have supported plant and animal resources, periodically provided water, and would have served to attract people on a seasonal basis, and that archaeological remains of human activities would have the potential to have become buried and preserved by alluvium. There may also be historic-era foundations or refuse deposits related to the previous building that was located onsite. Additionally, the SLF results provided by the NAHC indicate the presence of "sites" within the APE.

Project-related ground disturbance, which will extend to a depth of 20 feet below the ground surface, has the potential to uncover unknown buried archaeological resources. Impacts to archaeological resources that qualify as historic properties under Section 106 of the NHPA, or historical or unique archaeological resources under CEQA could result in an adverse effect or significant impact. ESA provides the following recommendations to ensure that the proposed 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:

- Construction worker cultural resources sensitivity training should be conducted prior to the start of project-related ground disturbing activities by a qualified archaeologist meeting the Secretary of the Interior's Standards for archaeology (U.S. Department of the Interior, 2008). The City should ensure that all construction staff are made available to attend the training and that documentation demonstrating attendance is retained.
- Archaeological and Native American monitoring should be conducted during ground-disturbing activities to assess subsurface conditions. Monitoring activities may be modified or discontinued at the recommendation of the qualified archaeologist in coordination with the Native American monitor and the City.
- Cease work and treatment measures should be implemented in the event that archaeological resources or human remains are encountered. If human remains are discovered, they should be treated in accordance with California Health and Safety Code Section 7050.5 and PRC 5097.98.

In addition, the San Luis Rey provided the following list of recommended mitigation measures during the August 11, 2016 meeting with the City for incorporation into the IS/MND:

1. The City of Escondido Planning Division shall 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 implementing the project. The purposes of the agreement are (1) to provide the clear expectations regarding tribal cultural resources, and (2) to formalize protocols and procedures between the City 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 City shall provide written verification to the City that a qualified archaeologist meeting the Secretary of the Interiors Standards for archaeology (U.S Department of the Interior, 2008), 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 within the project 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 MLD, 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 in the project area 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, RPA

Director, Southern California Cultural Resources Group

EDUCATION

M.A., Archaeology, California State University, Northridge

B.A., Anthropology, California State University, Northridge

AA, Humanities, Los Angeles Pierce College

20 YEARS EXPERIENCE

SPECIALIZED EXPERIENCE

Treatment of Historic and Prehistoric Human Remains

Archaeological Monitoring

Complex Shell Midden Sites

Groundstone Analysis

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists (RPA), #12805

Society for California Archaeology (SCA)

Society for American Archaeology (SAA)

QUALIFICATIONS

Exceeds Secretary of Interior Standards

CA State BLM Permitted

Monica has successfully completed dozens of cultural resources projects throughout California and the greater southwest, where she assists clients in navigating cultural resources compliance issues in the context of CEQA, NEPA, and Section 106. Monica has extensive experience with archaeological resources, historic buildings and infrastructure, landscapes, and Tribal resources, including Traditional Cultural Properties. Monica manages a staff of cultural resources specialists throughout the region who conduct Phase 1 archaeological/paleontological and historic architectural surveys, construction monitoring, Native American consultation, archaeological testing and treatment, historic resource significance evaluations, and large-scale data recovery programs. She maintains excellent relationships with agency staff and Tribal representatives. Additionally, Monica manages a general compliance monitoring team who support clients and agencies in ensuring the daily in-field compliance of overall project mitigation measures.

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, Path 46 Clearance Surveys, San Bernardino, CA. *Field Director.* ESA has been tasked by Los Angeles Department of Water and Power (LADWP) to conduct required surveys for the Path 46 Transmission Line Clearances Project. The project's objective is to restore required code clearances to the transmission conductors, which will be accomplished by grading the ground surface underneath the transmission lines to achieve required height consistency. The work is being conducted in compliance with BLM guidelines and federal laws and statutes. Biological, archaeological, and paleontological resource surveys are currently being conducted for the 77

proposed grading areas, staging areas, and roads. Reports will be written documenting the results of the surveys and providing recommendations on the areas for access, staging areas, and soil distribution that would have the least amount of impacts on natural resources. Monica is providing support to LADWP in their coordination with the BLM, including providing oversight of map preparation, field surveys, and preparation of pre-field research designs and post-field technical reports.

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 were incorporated into the EIR. The project includes installation of an approximately 35-mile recycled water pipeline from the Santa Clarita Valley to east Los Angeles.

Ballona Wetlands Restoration EIS/EIR, Los Angeles County, CA. *Cultural Resources Project Director.* As part of the development of the restoration plan for the Ballona Wetlands, the ESA project team characterized existing conditions that included water and sediment sampling and analysis. The water and sediment quality sampling was performed to develop and evaluate potential restoration alternatives, and to develop a conceptual plan. The ESA project team compiled existing data on and conducted additional sampling for water and sediment to assess potential effects on the proposed wetland restoration habitat from the use of urban runoff and tidal in-flow from Ballona Creek. These data were used to complete a baseline report and restoration alternatives assessment. Monica is assisting the CSCC in fulfilling Army Corps of Engineers requirements under Section 106 of the National Historic Preservation Act. In addition, she is coordinating with Tribal members and is overseeing a team of resource specialists who are compiling cultural resources technical in preparation of the EIR's Cultural Resources section.

Bureau of Land Management, Soda Mountain Solar Project, San Bernardino County, CA. *Cultural Resources Director*. ESA prepared a joint EIS/EIR for a 358-megawatt (MW) photovoltaic (PV) solar power plant and related infrastructure on approximately 4,397 acres of public land administered by the BLM near the town of Baker and the Mojave National Preserve. The project includes a substation, switchyard, operations and maintenance buildings, and interconnection to a Los Angeles Department of Water and Power 500 kV transmission line. If BLM approves the requested ROW grant, it will be necessary for the BLM to amend the California Desert Conservation Area Plan to identify the ROW area as appropriate for the proposed solar energy development use. ESA also provided support to BLM related to cultural resources and Section 106 of the NHPA. Monica provided technical and compliance oversight for third-party review of cultural resources studies and for the cultural resources section of the joint EIS/EIR.

Los Angeles Department of Water and Power Moapa Road Repair Cultural and Biological Resources Assessment, Clark County, NV. *Project Director.* The Los Angeles Department of Water and Power (LADWP) is seeking to conduct roadway

repairs following flash flooding to several locations of LADWP transmission line access roads on Bureau of Land Management (BLM) lands. ESA conducted cultural and biological resources assessments to identify sensitive resources within the project area. Monica provided general oversight of the project and led the coordination with the BLM Las Vegas Field Office.

Santa Susana Field Laboratory, Ventura County, CA. *Cultural Resources Project Director.* The Santa Susana Field Laboratory is a former rocket engine test, nuclear, and liquid metals research facility located on a 2,849- acre portion of the Simi Hills in Simi Valley, California. The uses of hazardous substances such as trichloroethylene and other solvents, heavy metals, and radioactive material at the field laboratory have resulted in soil and/or groundwater contamination. The field laboratory is currently the focus of a comprehensive environmental investigation and cleanup program conducted by Boeing, the U.S. Department of Energy (DOE), and the National Aeronautics and Space Administration (NASA) and overseen by the Department of Toxic Substances Control (DTSC). ESA is preparing a Program EIR that will evaluate soil and groundwater remediation activities. Because there are multiple responsible parties with separate cleanup actions, the Program EIR will provide a framework for tiered environmental documents to be prepared to address the development and refinement of remediation approaches and actions. Monica is overseeing a team of specialists who are conducting a geoarcheological and archaeological district studies for use in addressing impacts to archaeological resources in the EIR. Monica provides strategic guidance to DTSC on cultural resources-related issues, including Tribal outreach, approach to the Traditional Cultural Property, resource evaluations, and treatment of cultural resources on a project and program level.

Los Angeles Department of Water and Power Lone Pine Landfill Paleontological Resources Recovery, Inyo County, CA. *Cultural Resources Project Director.* At the request of LADWP, ESA responded to a discovery of large mammal bone at the Lone Pine Landfill in an area where borrow materials were being excavated. ESA conducted geologic map research and recovered what was identified as a mammoth tusk. The tusk was stabilized, prepared for curation, and transported to a storage facility. Monica provided senior oversight of the paleontological resources recovery team and conducted paleontological resources sensitivity training and guidance to landfill staff in the event additional material are encountered.

Desert Sunlight Solar Farm, Riverside County, CA. *Third-Party Compliance Monitoring Manager.* Monica provided oversight to compliance monitors who conducted daily monitoring of site activities, assisted contractors in avoiding non-compliance issues, and prepared weekly reports, and she coordinated with First Solar and the BLM on compliance issues. ESA also assists with evaluation and approvals of project Variance Requests.

Candace R. Ehringer, RPA

Senior Cultural Resources Specialist

EDUCATION

M.A., Anthropology, California State University, Northridge

B.A., Anthropology, East Carolina University

18 YEARS EXPERIENCE

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists

Society for California Archaeology

Society for Historical Archaeology

QUALIFICATIONS

Exceeds Secretary of the Interior's Standards

CA State BLM Permitted

CONTINUING EDUCATION

AEP Advanced CEQA Workshop, 2011

ACHP Section 106 Essentials training course, 2010

Riverside County certification course, 2009 and 2011

PROFESSIONAL PAPERS & PRESENTATIONS

Ehringer, C. 2014 Dead Men Do Wear Plaid: Garments and Notions for City Cemetery, Los Angeles, California. Oral paper presentation at the Society for Historical Archaeology 47th Annual Meeting, Quebec City, Quebec, Canada.

Candace is a cultural resources project manager with 18 years of experience working across California. Candace manages multi-disciplinary cultural resources projects which include archaeological, historic architectural, and paleontological resources components. She is adept at building teams of specialists from these resource areas that are uniquely qualified for the particular project at hand and has brought hundreds of projects to successful completion for both public agency and private development clients. Candace provides technical and compliance oversight for projects involving archaeological survey, evaluation, and treatment; built environment studies including the documentation and evaluation of buildings, structures, and districts; and paleontological resources survey and sensitivity assessments. She is proficient in the areas of CEQA, NEPA, and Section 106 and routinely provides planning and strategic guidance to clients within the larger scope of state and federal regulations.

Relevant Experience

San Gabriel River Confluence with Cattle Canyon Imporvemnts Project, Archaeological Services, Angeles National Forest, CA. *Principal Investigator.* ESA has been retained by BlueGreen Consulting to prepare a joint NEPA/CEQA document in support of a project that will provide recreational imporvements and ecological restoration algon a 1.5-mile reach of the East Fork of the San Gabriel River in the Angeles National Forest. Archival research indicates that the project is within an area subject to historic mining activities. Candace is currently managing the preparation of a cultural resources survey report, She previously conducted archival research, and composed a preliminary constraints memo.

California Department of Water Resources (DWR), Cantua Creek Stream Group Improvements Project, Fresno County, CA. *Project Manager*. The California Department of Water Resources (DWR) proposes to implement the Cantua Creek Stream Group (CCSG) Improvements Project (Project). The CCSG is composed of five major creeks: Arroyo Hondo, Cantua, Salt, Martinez, and Domengine. The CCSG drains a portion of the Coast Range, located west of the Project area. Presently, floodwaters from the CCSG terminate at four locations (Basins 1-4) along an approximately 13-mile stretch of the San Luis Canal; Martinez Creek flows into Salt Creek about 3 miles upstream of the San Luis Canal. Candace managed the preparation of a Cultural Resource Inventory and Evaluation Report, Finding of Effect, and Paleontological Resources Report in compliance with Section 106 of the National Historic Preservation Act and CEQA. The Bureau of Reclamation was the lead federal agency.

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.

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 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. The study concluded that the area is sensitive for archaeological resources and monitoring was recommended.

DWR, 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 California Public Resources Code Sections 5024 and 5024.5. 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.

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.

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 approx. 35-mile recycled water pipeline from the Santa Clarita Valley to East Los Angeles.

Michael Vader

Associate Archaeologist

EDUCATION

B.A., Physical Anthropology, University of California, Santa Barbara

9 YEARS EXPERIENCE

PROFESSIONAL AFFILIATIONS

Society for California Archaeology (SCA)

Society for American Archaeology (SAA)

Pacific Coast Archaeological Society (PCAS)

SPECIALIZED EXPERIENCE

Analysis of faunal remains including fish and shellfish species

Archaeological Monitoring

Paleontological Monitoring

Environmental Compliance Monitoring

Human osteology and bioarchaeology

Michael is 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 California, including projects in Riverside, San Diego, Imperial, San Bernardino, Los Angeles, Orange, Santa Barbara, San Luis Obispo, Kern, Fresno, Madera, and Inyo Counties. Michael regularly works as part of a team, coordinating with construction personnel and Native American representatives.

Relevant Experience

City of Los Angeles Department of Water and Power, City Trunk Line Unit 3 Project, Los Angeles, CA. *Archaeologist.* ESA has conducted a Phase 1 cultural resources assessment for the Los Angeles Department of Water and Power (LADWP), City Trunk Line Unit 3 Project (Project). LADWP plans replacing a portion of the City Trunk Line on Coldwater Canyon Avenue between Vanowen Street and Magnolia Boulevard, within the City of Los Angeles. The proposed Project would involve the installation of approximately 10,250 linear feet of 60-inch diameter water pipeline constructed of welded steel. Michael led the Phase 1 cultural resources survey of the Project area and prepared the technical report and the cultural resources ISMND section.

City of Los Angeles Department of Water and Power, Barren Ridge Switching Station, Kern County, CA. *Archaeologist.* ESA has prepared a Phase I cultural resources study for the Los Angeles Department of Water and Power Barren Ridge Switching Station Project, located in Kern County, CA. The proposed project includes the expansion of the existing Barren Ridge Switching Station. The expansion would consist of the development of 3.7-acres of undeveloped land on the east side of the switching station. Michael led the cultural resources survey and prepared the technical report for the study.

City of Los Angeles Department of Water and Power, Haskell Canyon Switching Station, Los Angeles County, CA. *Archaeologist.* ESA has prepared a Phase I cultural resources study for the Los Angeles Department of Water and Power (LADWP) Haskell Canyon Switching Station Project, located in Los Angeles County, CA. The proposed project includes the construction of the Haskell Canyon Switching Station on LADWP owned and private property south of the Angeles National Forest. Construction of the switching station would consist of clearing and upgrading of access roads, site grading and development, and installation of electrical conduits, structures, and equipment. Michael led the cultural resources survey and assisted in the preparation of the technical report.

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.

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.

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 IS/MND 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 IS/MND.

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.

CONFIDENTIAL APPENDIX B (BOUND SEPERATELY)

SCIC Records Search

APPENDIX C

Native American Outreach

ESA

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

www.esassoc.com

August 2, 2016

Native American Heritage Commission
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
FAX- 916-373-5471

Subject: **Sacred Lands File search request for the Escondido MFRO 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 Facility (MFRO) 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.

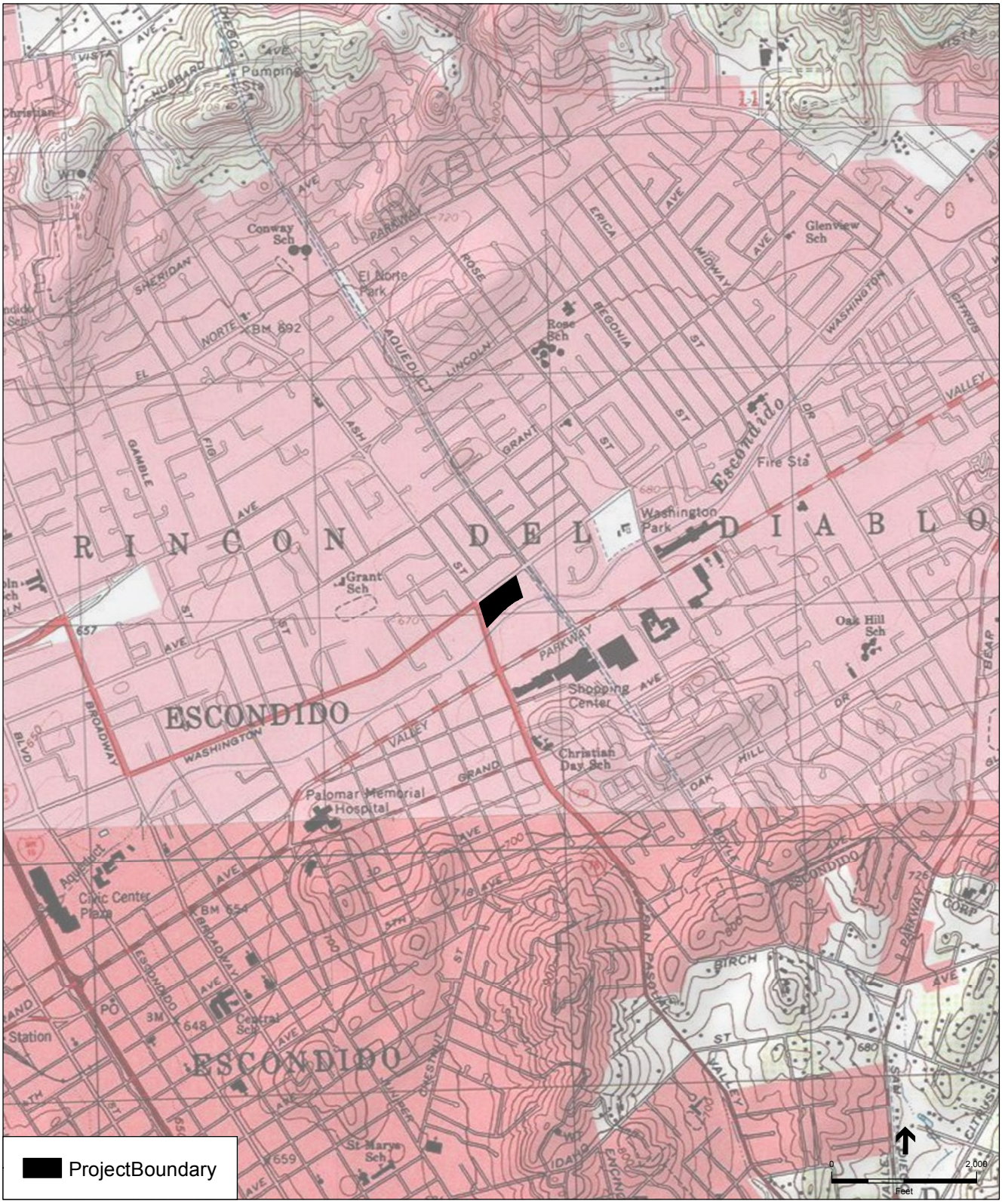
The Project includes the construction of a MFRO facility that will utilize membrane filtration (MF) and reverse osmosis (RO) technologies to reduce salinity/chlorides in non-potable reuse water. The Facility will process 2.0 million gallons of reuse water per day to be used by local growers for irrigation. The Area of Potential Effect (APE) is located within an empty lot southeast of the intersection of East Washington Avenue and North Ash Street in the City of Escondido. The enclosed map shows the APE located in an unsectioned portion of the Valley Center USGS 7.5' Quad, Township 12 South/Range 2 West.

In an effort to address any potential impact to archaeological or Native American cultural resources, the City is seeking comments and information from Native American representatives. The City would appreciate your assistance in identifying any sensitive sites in or near the APE that you may be aware of, or comments regarding any concerns or issues you may have about this Project.

Thank you for your time and cooperation regarding this matter. To expedite the delivery of search results, please fax them to 619.719.4201, or email them to mvader@esassoc.com.

Sincerely,

Michael Vader
Cultural Resources



TOPOQUAD: Valley Center and Escondido USGS 7.5-minute Topo Quads

Escondido MFRO. 140480

Figure 1

Cultural Records Search

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

August 3, 2016

Michael Vader, Cultural Resources
ESA

Sent by Email: mvader@esassoc.com

RE: Proposed Micro Filtration Reverse Osmosis (MFRO) Facility for Agriculture Project, City of Escondido; Valley Center USGS Quadrangle, San Diego County, California

Dear Mr. Vader:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* (SLF) was completed for the area of potential project effect (APE) for the above referenced project. Sites have been located the APE you provided that may be impacted by the project. Please contact the lipay Nation of Santa Ysabel at (760) 803-5694 for more information about these sites. Please contact the culturally affiliated Tribes directly for more information about other potential sites within your APE. Their contact information is on the attached "Native American Contact List."

The absence or presence 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 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 under applicable laws. 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: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

Native American Heritage Commission
Native American Contact List
San Diego County
8/3/2016

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760)699-6800
Fax: (760)699-6919

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760)699-6907
Fax: (760)699-6924
ACBCI-THPO@aguacaliente.net

Barona Group of the Capitan Grande
Clifford LaChappa, Chairperson
1095 Barona Road — Kumeyaay
Lakeside, CA, 92040
Phone: (619)443-6612
Fax: (619)443-0681
cloyd@barona-nsn.gov

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Kumeyaay
Campo, CA, 91906
Phone: (619)478-9046
Fax: (619)478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Tribal Office
Robert Pinto, Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
Phone: (619)445-6315
Fax: (619)445-9126

Ewiiaapaayp Tribal Office
Michael Garcia, Vice Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
Phone: (619)445-6315
Fax: (619)445-9126
michaelg@leaningrock.net

Iipay Nation of Santa Ysabel
Virgil Perez, Chairperson
P.O. Box 130 — Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760)765-0845
Fax: (760)765-0320

Inaja Band of Mission Indians
Rebecca Osuna, Chairperson
2005 S. Escondido Blvd. — Kumeyaay
Escondido, CA, 92025
Phone: (760)737-7628
Fax: (760)747-8568

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 — Kumeyaay
Jamul, CA, 91935
Phone: (619)669-4785
Fax: (619)669-4817

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas,
P.O. Box 775 — Kumeyaay
Pine Valley, CA, 91962
Phone: (619)709-4207

La Jolla Band of Luiseno Indians
Thomas Rodriguez, Chairperson
22000 Highway 76 — Luiseno
Pauma Valley, CA, 92061
Phone: (760)742-3771

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road — Kumeyaay
Boulevard, CA, 91905
Phone: (619)478-2113
Fax: (619)478-2125
LP13boots@aol.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Micro Filtration Reverse Osmosis (MRFO) Facility for Agriculture, San Diego County.

Native American Heritage Commission
Native American Contact List
San Diego County
8/3/2016

La Posta Band of Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road — Kumeyaay
Boulevard, CA, 91905
Phone: (619)478-2113
Fax: (619)478-2125
jmiller@Lapostatribe.net

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Mesa Grande Band of Mission Indians
Virgil Oyos, Chairperson
P.O Box 270 — Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760)782-3818
Fax: (760)782-9092
mesagrandeband@msn.com

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd. — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pauma Band of Luiseno Indians - Pauma & Yuima Reservation
Temet Aguilar, Chairperson
P.O. Box 369, Ext. 303 — Luiseno
Pauma Valley, CA, 92061
Phone: (760)742-1289
Fax: (760)742-3422

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951)770-6000
Fax: (951)695-1778
striplett@pechanga-nsn.gov

Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
1 West Tribal Road — Luiseno
Valley Center, CA, 92082
Phone: (760)749-1051
Fax: (760)749-5144
bomazzetti@aol.com

Rincon Band of Mission Indians
Jim McPherson, Tribal Historic Preservation Officer
1 West Tribal Road — Luiseno
Valley Center, CA, 92082
Phone: (760)749-1051
Fax: (760)749-5144
vwhipple@rincontribe.org

San Luis Rey Band of Mission Indians
San Luis Rey, Tribal Council
1889 Sunset Drive — Luiseno
Vista, CA, 92081
Phone: (760)724-8505
Fax: (760)724-2172
cjmojado@slrmissionindians.org

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
P.O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760)749-3200
Fax: (760)749-3876
allenl@sanpasqualtribe.org

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Micro Filtration Reverse Osmosis (MRFO) Facility for Agriculture, San Diego County.

Native American Heritage Commission
Native American Contact List
San Diego County
8/3/2016

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951)663-5279
Fax: (951)654-4198
jontiveros@soboba-nsn.gov

Soboba Band of Luiseno Indians
Carrie Garcia, Cultural Resources Manager
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92583 — Luiseno
Phone: (951)654-2765
Fax: (951)654-4198
carrieg@soboba-nsn.gov

Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619)445-2613
Fax: (619)445-1927
ssilva@sycuan-nsn.gov

Viejas Band of Kumeyaay Indians
Robert J. Welch, Chairperson
1 Viejas Grade Road — Kumeyaay
Alpine, CA, 91901
Phone: (619)445-3810
Fax: (619)445-5337
jhagen@viejas-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Micro Filtration Reverse Osmosis (MRFO) Facility for Agriculture, San Diego County.

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 9, 2016

San Pascual 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 Facility (MFRO) 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 Project includes the construction of a MFRO facility that will utilize membrane filtration (MF) and reverse osmosis (RO) technologies to reduce salinity/chlorides in non-potable reuse water. The Facility will process 6.0 million gallons of reuse water per day to be used by local growers for irrigation. The 4.26-acre APE is located southeast of the intersection of East Washington Avenue and North Ash Avenue in the City of Escondido. The enclosed map shows the APE located in an unsectioned portion of the Valley Center USGS 7.5' Quad, Township 12 South/Range 2 West. On August 3, 2016, the NAHC performed a Sacred Lands File (SLF) records search for the Project. The SLF search stated that "sites" have been identified within the APE, although specific location information was not provided.

The NAHC has identified you as being culturally affiliated with the APE, and who may have knowledge of resources in the area or an interest in the Project. We are writing to request your input on resources that may be within the APE and to solicit any concerns you may have.

Thank you for your cooperation on this matter. If you have any questions or comments, please contact Michael Vader by phone at 619. 719.4195 or by email at mvader@esassoc.com.

Sincerely,

Michael Vader

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 9, 2016

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302
Boulevard, CA 91905

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Santos:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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Sincerely,

Michael Vader

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 9, 2016

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 Facility (MFRO) 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 Project includes the construction of a MFRO facility that will utilize membrane filtration (MF) and reverse osmosis (RO) technologies to reduce salinity/chlorides in non-potable reuse water. The Facility will process 6.0 million gallons of reuse water per day to be used by local growers for irrigation. The 4.26-acre APE is located southeast of the intersection of East Washington Avenue and North Ash Avenue in the City of Escondido. The enclosed map shows the APE located in an unsectioned portion of the Valley Center USGS 7.5' Quad, Township 12 South/Range 2 West. On August 3, 2016, the NAHC performed a Sacred Lands File (SLF) records search for the Project. The SLF search stated that "sites" have been identified within the APE, although specific location information was not provided.

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Thank you for your cooperation on this matter. If you have any questions or comments, please contact Michael Vader by phone at 619. 719.4195 or by email at mvader@esassoc.com.

Sincerely,

Michael Vader

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 9, 2016

Soboba Band of Luiseno Indians
Carrie Garcia, Cultural Resources Manager
P.O. Box 487
San Jacinto, CA 92581

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Garcia:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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August 9, 2016

Barona Group of the Capitan Grande
Clifford LaChappa, Chairperson
1095 Baron 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 Facility (MFRO) 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.

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Los Angeles, CA 90017
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August 9, 2016

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas
P.O. Box 775
Pine Valley, CA 91962

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Lucas:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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August 9, 2016

Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court
El Cajon, CA 92019

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Martinez:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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August 9, 2016

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612
Jamul, CA 91935

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Pinto:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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August 9, 2016

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road
Boulevard, CA 91905

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Parada:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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August 9, 2016

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dina Shore Drive
Palm Springs, CA 92264

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Grubbe:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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August 9, 2016

Rincon Band of Mission Indians
Jim McPherson, Tribal Historic Preservation Officer
1 West Tribal Road
Valley Center, CA 92082

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. McPherson:

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Los Angeles, CA 90017
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August 9, 2016

La Posta Band of Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road
Boulevard, CA 91905

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Miller:

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August 9, 2016

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resources Department
P.O. Box 487
San Jacinto, CA 92581

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Ontiveros:

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August 9, 2016

Ewiiaapaayp Tribal Office
Michael Garcia, Vice Chairperson
4054 Willows Road
Alpine, CA 91901

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Garcia:

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August 9, 2016

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:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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August 9, 2016

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Tribal Historic Preservation Officer
5401 Dinah Shore Drive
Palm Springs, CA 92264

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Garcia-Plotkin:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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August 9, 2016

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1
Campo, CA 91906

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Goff:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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 Project includes the construction of a MFRO facility that will utilize membrane filtration (MF) and reverse osmosis (RO) technologies to reduce salinity/chlorides in non-potable reuse water. The Facility will process 6.0 million gallons of reuse water per day to be used by local growers for irrigation. The 4.26-acre APE is located southeast of the intersection of East Washington Avenue and North Ash Avenue in the City of Escondido. The enclosed map shows the APE located in an unsectioned portion of the Valley Center USGS 7.5' Quad, Township 12 South/Range 2 West. On August 3, 2016, the NAHC performed a Sacred Lands File (SLF) records search for the Project. The SLF search stated that "sites" have been identified within the APE, although specific location information was not provided.

The NAHC has identified you as being culturally affiliated with the APE, and who may have knowledge of resources in the area or an interest in the Project. We are writing to request your input on resources that may be within the APE and to solicit any concerns you may have.

Thank you for your cooperation on this matter. If you have any questions or comments, please contact Michael Vader by phone at 619. 719.4195 or by email at mvader@esassoc.com.

Sincerely,

Michael Vader

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 9, 2016

Inaja Band of Mission Indians
Rebecca Osuna, Chairperson
2005 South Escondido Boulevard
Escondido, CA 92025

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Ms. Osuna:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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Sincerely,

Michael Vader

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Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 9, 2016

Ewiiaapaayp Tribal Office
Robert Pinto, Chairperson
4054 Willows Road
Alpine, CA 91901

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Pinto:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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Sincerely,

Michael Vader

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 9, 2016

Viejas Band of Kumeyaay Indians
Robert J. Welch, Chairperson
1 Viejas Grade Road
Alpine, CA 91901

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Welch:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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Sincerely,

Michael Vader

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Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 9, 2016

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Road
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 Facility (MFRO) 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.

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Sincerely,

Michael Vader

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Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 9, 2016

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:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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Sincerely,

Michael Vader

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

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August 9, 2016

Pauma Band of Luiseno Indians
Temet Aguilar, Chairperson
P.O. Box 369, Ext. 303
Pauma Valley, CA 92061

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Aguilar:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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Sincerely,

Michael Vader

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 9, 2016

La Jolla Band of Luiseno Indians
Thomas Rodriguez, Chairperson
22000 Highway 76
Pauma Valley, CA 92061

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Rodriguez:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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Sincerely,

Michael Vader

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 9, 2016

Mesa Grande Band of Mission Indians
Virgil Oyos, Chairperson
P.O. Box 270
Santa Ysabel, CA 92070

Subject: Escondido MFRO Facility for Agriculture Project – D140480.00

Dear Mr. Oyos:

The City of Escondido (City) is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Micro Filtration Reverse Osmosis Facility (MFRO) 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.

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Sincerely,

Michael Vader

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

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August 9, 2016

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 Facility (MFRO) 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.

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Sincerely,

Michael Vader

PALA TRIBAL HISTORIC PRESERVATION OFFICE

PMB 50, 35008 Pala Temecula Road
Pala, CA 92059
760-891-3510 Office | 760-742-3189 Fax

PALA THPO

August 22, 2016

Michael Vader
ESA
626 Wilshire Blvd, Suite 1100
Los Angeles, CA 90017

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). Therefore, we have no objection to the continuation of project activities as currently planned and we defer to the wishes of Tribes in closer proximity to the project area.

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, PhD
Tribal Historic Preservation Officer
Pala Band of Mission Indians

ATTENTION: THE PALA TRIBAL HISTORIC PRESERVATION OFFICE IS RESPONSIBLE FOR ALL REQUESTS FOR CONSULTATION. PLEASE ADDRESS CORRESPONDENCE TO **SHASTA C. GAUGHEN** AT THE ABOVE ADDRESS. IT IS NOT NECESSARY TO ALSO SEND NOTICES TO PALA TRIBAL CHAIRMAN ROBERT SMITH.

Michael Vader

From: Feeney, Hannah (TRBL) <hfeeney@aguacaliente.net>
Sent: Tuesday, August 23, 2016 10:23 AM
To: Michael Vader
Subject: Escondido MFRO Facility for Agriculture Project - D140480.00

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning, Mr. Vader,

Thank you for including us in the consultation process for the MFRO Facility for Agriculture Project for the City of Escondido. A records check of the ACBCI cultural registry revealed that this project is not located within the Tribe's Traditional Use Area (TUA). Therefore, we defer to the other tribes in the area. This letter shall conclude our consultation efforts.

Hannah Feeney
Archaeological and Archives Technician
Agua Caliente Band of Cahuilla Indians
760-699-6828 (desk)
760-413-5836 (cell)
hfeeney@aguacaliente.net

Escondido MFRO Facility for Agriculture Project (D140480)
Native American Contact Log

Individual Contacted/Affiliation	Number/Email	Certified Letter Sent	Response	Follow-up Phone Call	Response	Notes	Action Item
Allen E. Lawson, Chairperson, San Pasqual Band of Mission Indians	(760) 749-3200	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice message. No Response to date	-	-
Clifford LaChappa, Chairperson, Barona Group of the Capitan Grande (Diegueno)	(619) 443-6612	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a message with Mr. LaChappa's assistant Candy Llyod. No Response to date	-	-
Virgil Perez, Chairperson, Iipay Nation of Santa Ysabel (Diegueno/Kumeyaay)	(760) 765-0845	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice messaage for Mr. Perez letting him know that the NAHC requested the Lipay input. No response to date	-	-
Robert Pinto, Sr., Chairperson, Ewiiaapaayp Tribal Office (Diegueno/Kumeyaay)	(619) 445-6315	8/16/2016	No response.	8/19/2016	Number no longer in service	-	-
Michael Garcia, Vice Chairperson, Ewiiaapaayp Tribal Office (Diegueno/Kumeyaay)	(619) 445-6315	8/16/2016	No response.	8/19/2016	Number no longer in service	-	-
Rebecca Osuna Chairman Inaja Band of Mission Indians (Diegueno)	(760) 737-7628	8/16/2016	No response.	8/19/2016	Vanessa Ortiz spoke with the Vice Chairperson, Lisa Contreras. She said that they have no questions or comments regarding the project	-	-
Ms. Carmen Lucas, Kwaaymii Laguna Band of Mission Indians (Diegueno-Kwaaymii Kumeyaay)	(619) 709-4207	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice message. No Response to date	-	-
Cody J. Martinez, Chairperson, Sycuan Band of the Kumeyaay Nation (Diegueno/Kumeyaay)	(619) 445-2613	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice message. No Response to date	-	-
Shasta Gaughen, Tribal Historic Preservation Officer, Pala Band of Mission Indians	(760) 891-3515	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice message. No Response to date	-	-
Mark Macarro, Chairperson, Pechanga Band of Mission Indians	(951) 770-6100	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a message with Mr. Macarro's Assistant, Emily Preston. No response to date	-	-
San Luis Rey Band of Mission Indians Tribal Council	(760) 724-8505	8/16/2016	No response.	8/19/2016	Vanessa Ortiz spoke with Carmen Mojado of the Cultural Resources Department. Ms. Mojado stated that she would call back with any information. No response to date.	-	-
Bo Mazzetti, Chairperson, Rincon Band of Mission Indians	(760) 749-1051	8/16/2016	No response.	8/19/2016	Vanessa ortiz left a message on the tribal office voicemail. No response to date	-	-
Jim McPherson, Tribal Historic Preservation Officer , Rincon Band of Mission Indians	(760) 749-1051	8/16/2016	No response.	8/19/2016	Vanessa ortiz left a message on the tribal office voicemail. No response to date	-	-
Jeff Grubbe, Chairperson, Agua Caliente Band of Cahuilla Indians	(760) 699-6800	8/16/2016	No response.	8/19/2016	Vanessa ortiz spoke with the receptionsist, Rebecca. She will forward the message to Patricia Plotkin who will review the letter on Monday for any comments. No response to date	-	-
Patricia Plotkin, Director, Agua Caliente Band of Cahuilla Indians	(760) 699-6907	8/16/2016	No response.	8/19/2016	Vanessa ortiz spoke with the receptionsist, Rebecca. She will forward the message to Patricia Plotkin who will review the letter on Monday for any comments. No response to date	-	-
Erica Pinto, Chairperson, Jamul Indian Village	(619) 443-6612	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice message. No Response to date	-	-
Ralph Goff, Chairperson, Campo Band of Mission Indians	(619) 478-9046	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice message. No Response to date	-	-
Thomas Rodriguez, Chairperson, La Jolla Band of Luiseno Indians	(760) 742-3771	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice message. No Response to date	-	-
Gwendolyn Parada, Chairperson, La Posta Band of Mission Indians	(619) 478-2113	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice message. No Response to date	-	-
Javaughn Miller, Tribal Administrator, La Posta Band of Mission Indians	(619) 478-2113	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice message. No Response to date	-	-
Angela Elliott Santos, Chairperson, Manzanita Band of Kumeyaay Nation	(619) 766-4930	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice message. No Response to date	-	-
Temet Aguilar, Chairperson, Pauma Band of Luiseno Indians	(760) 724-8505	8/16/2016	No response.	8/19/2016	Vanessa Ortiz attempted to leave a voicemail, but it was full. No response to date.	-	-
Joseph Ontiveros, Cultural Resources Department, Soboba Band of Luiseno Indians	(951) 663-5279	8/16/2016	No response.	8/19/2016	Vanessa Ortiz spoke with Joe Ontiveros. Soboba Band is not interested in the project at this time and will defer comment to local tribes.	-	-
Carrie Garcia, Cultural Resources Manager, Soboba Band of Luiseno Indians	(951) 654-2765	8/16/2016	No response.	8/19/2016	See message from Mr. Ontiveros	-	-
Robert Welch, Chairperson, Viejas Band of Kumeyaay Indians	(619) 445-3810	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice message. No Response to date	-	-
Virgil Oyos, Chairperson, Mesa Grand Band of Mission Indians	(760) 782-3818	8/16/2016	No response.	8/19/2016	Vanessa Ortiz left a voice message. No Response to date	-	-

Jay Paul

From: Vincent Whipple <vwhipple@RinconTribe.org>
Sent: Thursday, September 22, 2016 1:19 PM
To: Jay Paul
Subject: AB52 Consultation, 1201 E. Washington Avenue, MFRO Facility, City Case Number: ENV16-0009

RE: Assembly Bill 52 Consultation, 1201 E. Washington Avenue, (Microfiltration Reverse Osmosis Facility – MFRO), City Case Number: ENV16-0009

Mr. Jay Paul:

This message is written on behalf of the Rincon Band of Luiseno Indians. We have received your letter of August 23, 2016 regarding the above named project. The identified project location is within the historic Luiseno Territory, and it is also situated within Rincon's specific area of cultural interest. Embedded in the Luiseno Territory are Rincon's history, culture, and identity.

The project is located in our Traditional Use Area, and we believe there is the potential for cultural findings, including the possibility of inadvertent discoveries. Due to the amount of proposed ground disturbances, we recommend a Luiseno Tribal Monitor be present for all ground disturbing activities. We also request that you please keep us informed regarding any new information regarding cultural resources that may emerge.

We thank you for the opportunity to comment and to protect and preserve our Luiseno cultural heritage.

Vincent Whipple
Cultural Resources Manager
Rincon Band of Luiseno Indians
760-297-2635

Jay Paul

From: Jay Paul
Sent: Tuesday, August 23, 2016 3:42 PM
To: 'Carmen Mojado'
Cc: Jay Paul; Angela Morrow
Subject: AB52 Consultation
Attachments: MFRO-San Luis Rey.pdf

Cami:

Pursuant to Assembly Bill 52, I have provided information regarding a proposed City Microfiltration Reverse Osmosis Facility (MFRO) for your review and comment. The project is located on the southeastern corner of Washington Avenue/Ash Street (Hwy 78) addressed as 1201 E. Washington Avenue. The City of Escondido is in the process of preparing more detailed plans and preparation of the environmental review in conformance with CEQA (City File No. ENV16-0009). This is the project that we briefly discussed on August 11th during consultation regarding several other projects. The previous City MFRO facility proposed for 2512 E. Washington Avenue (APN 225-270-54) was denied by the Escondido Planning Commission and a new commercial zoned property owned by the City has been chosen for the project. The attached letter and maps also will be sent by mail.

Jay Paul
JPaul
City of Escondido
(760) 839-4537

ESCONDIDO
City of Choice

Bill Martin, AICP
Director of Community Development
Planning Division
201 North Broadway, Escondido, CA 92025
Phone: 760-839-4671 Fax: 760-839-4313

Ms. Cami Mojado
San Luis Rey Band of Mission Indians
1889 Sunset Drive
Vista, CA 92081

Sent by U.S. Mail and Email

August 23, 2016

RE: ASSEMBLY BILL 52 CONSULTATION
1201 E. Washington Avenue
(Microfiltration Reverse Osmosis Facility - MFRO)
City Case Number: ENV16-0009

Dear Ms. Mojado:

In accordance with the provisions of California Assembly Bill 52, the purpose of this letter is to provide notification and to initiate consultation regarding a proposed City of Escondido Microfiltration Reverse Osmosis Facility (MFRO) described below. The City of Escondido will serve as the lead agency under the California Environmental Quality Act (CEQA) for the project.

Project Description:

The project involves a Conditional Use Permit (CUP) for the development of a city facility designed to provide advanced treatment for Title 22 quality recycled water produced at the City's Hale Avenue Resources Recovery Facility (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 partially buried blended tank. The water would then be sent through the existing non-potable reuse water/agriculture pipelines and distributed to growers. The initial concept design would consist of two buildings, an engine generator, partially buried process water (PW) storage tank, partially buried ground influent tank, buried interprocess and waste equalization tanks, and a stormwater pond/detention basin. The project also would include a future phase for Advanced Water Treatment (AWT) which is probably about 10 years out in the future.

Location and Environmental Setting:

The approximately 4.57-acre parcel is located in the City of Escondido, County of San Diego, on the southeastern corner of Washington Avenue and Ash Street (HWY 78), addressed as 1201 E. Washington Avenue (APN 230-141-01). The property fronts onto and takes access from Washington Avenue on the north and Ash Street on the west. The Escondido Creek Flood

E. Washington Avenue (APN 230-141-01). The property fronts onto and takes access from Washington Avenue on the north and Ash Street on the west. The Escondido Creek Flood Control Channel (concrete lined channel) is located along the southern boundary of the site. The project site is relatively flat and has been developed in the past as the Escondido Mutual Water Company operations/storage yard. All of the on-site buildings have since been removed. The site currently is used as a construction staging area. The subject site is zoned General Commercial (CG) with commercial development to the south, northwest and west; a three-story residential care facility on the east; and a mix of commercial, multi-family and single-family development to the north across Washington Avenue.

Pursuant to Government Code section 21080.3.1, subdivision (d), please respond within 30 days of the date of this notice if your tribe wishes to consult with the City regarding this matter. Please contact:

Jay Paul
Associate Planner
CITY OF ESCONDIDO
210 North Broadway
Escondido, CA 92025-4313
Phone: (760) 839-4537
Email: jpaul@escondido.org

Sincerely,

Jay Paul
Associate Planner

Attachments

Jay Paul

From: Jay Paul
Sent: Tuesday, August 23, 2016 3:44 PM
To: 'vwhipple@rincontribe.org'
Cc: Jay Paul; Angela Morrow
Subject: AB52 Consultation
Attachments: MFRO-Rincon.pdf

Mr. Whipple:

Pursuant to Assembly Bill 52, I have provided information regarding a proposed City Microfiltration Reverse Osmosis Facility (MFRO) for your review and comment. The project is located on the southeastern corner of Washington Avenue/Ash Street (Hwy 78) addressed as 1201 E. Washington Avenue. The City of Escondido is in the process of preparing more detailed plans and the environmental review in conformance with CEQA (City File No. ENV16-0009). The previous City MFRO facility proposed for 2512 E. Washington Avenue (APN 225-270-54) was denied by the Escondido Planning Commission and a new commercial zoned property owned by the City has been chosen for the project. The attached letter and maps also will be sent by mail.

Jay Paul
JPaul
City of Escondido
(760) 839-4537

ESCONDIDO
City of Choice

Bill Martin, AICP
Director of Community Development
Planning Division
201 North Broadway, Escondido, CA 92025
Phone: 760-839-4671 Fax: 760-839-4313

Mr. Vincent Whipple
Cultural Resource Manager
Rincon Band of Luiseno Indians
1 West Tribal Road
Valley Center, CA 92082

Sent by U.S. Mail and Email

August 23, 2016

RE: ASSEMBLY BILL 52 CONSULTATION
1201 E. Washington Avenue
(Microfiltration Reverse Osmosis Facility - MFRO)
City Case Number: ENV16-0009

Dear Mr. Whipple:

In accordance with the provisions of California Assembly Bill 52, the purpose of this letter is to provide notification and to initiate consultation regarding a proposed City of Escondido Microfiltration Reverse Osmosis Facility (MFRO) described below. The City of Escondido will serve as the lead agency under the California Environmental Quality Act (CEQA) for the project.

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Location and Environmental Setting:

The approximately 4.57-acre parcel is located in the City of Escondido, County of San Diego, on the southeastern corner of Washington Avenue and Ash Street (HWY 78), addressed as 1201

Control Channel (concrete lined channel) is located along the southern boundary of the site. The site is relatively flat and has been developed in the past as the Escondido Mutual Water Company operations/storage yard. All of the on-site buildings have since been removed. The site currently is used as a construction staging area. The parcel is zoned General Commercial (CG) with commercial development to the south, northwest and west; a three-story residential care facility on the east; and a mix of commercial, multi-family and single-family development to the north across Washington Avenue.

Pursuant to Government Code section 21080.3.1, subdivision (d), please respond within 30 days of the date of this notice if your tribe wishes to consult with the City regarding this matter. Please contact:

Jay Paul
Associate Planner
CITY OF ESCONDIDO
210 North Broadway
Escondido, CA 92025-4313
Phone: (760) 839-4537
Email: jpaul@escondido.org

Sincerely,

Jay Paul
Associate Planner

Attachments

ESCONDIDO
City of Choice

Bill Martin, AICP
Director of Community Development
Planning Division
201 North Broadway, Escondido, CA 92025
Phone: 760-839-4671 Fax: 760-839-4313

Mr. Joseph Ontiveros
Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, CA 92581

Sent by U.S. Mail and Email

August 23, 2016

RE: ASSEMBLY BILL 52 CONSULTATION
1201 E. Washington Avenue
(Microfiltration Reverse Osmosis Facility - MFRO)
City Case Number: ENV16-0009

Dear Mr. Ontiveros:

In accordance with the provisions of California Assembly Bill 52, the purpose of this letter is to provide notification and to initiate consultation regarding a proposed City of Escondido Microfiltration Reverse Osmosis Facility (MFRO) described below. The City of Escondido will serve as the lead agency under the California Environmental Quality Act (CEQA) for the project.

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Jay Paul
Associate Planner
CITY OF ESCONDIDO
210 North Broadway
Escondido, CA 92025-4313
Phone: (760) 839-4537
Email: jpaul@escondido.org

Sincerely,

Jay Paul
Associate Planner

Attachments

Jay Paul

From: Jay Paul
Sent: Tuesday, August 23, 2016 3:46 PM
To: 'jontiveros@soboba-nsn.gov'
Cc: Jay Paul; Angela Morrow
Subject: AB52 Consultation
Attachments: MFRO Soboba.pdf

Mr. Ontiveros:

Pursuant to Assembly Bill 52, I have provided information regarding a proposed City Microfiltration Reverse Osmosis Facility (MFRO) for your review and comment. The project is located on the southeastern corner of Washington Avenue/Ash Street (Hwy 78) addressed as 1201 E. Washington Avenue. The City of Escondido is in the process of preparing more detailed plans and the environmental review in conformance with CEQA (City File No. ENV16-0009). The previous City MFRO facility proposed for 2512 E. Washington Avenue (APN 225-270-54) was denied by the Escondido Planning Commission and a new commercial zoned property owned by the City has been chosen for the project. The attached letter and maps also will be sent by mail.

Jay Paul
JPaul
City of Escondido
(760) 839-4537

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	22	KSF	General Heavy Industrial
Acerage	5		
Employment	2 to 3	Total	per month

CONSTRUCTION INFORMATION

The construction information was provided by the Client.

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.

Construction schedule based on Project specific Information

Phase	# Worker	Starte Date	End Date	# Days	Days/week
Construction - June 2017 thru May 2018					
Site Preparation	4	6/1/2017	7/1/2017	22	5
Grading/Excavation	4	6/1/2017	1/1/2018	75	5
Drainage/Utilities/Subgrade	6	7/1/2017	4/1/2018	75	5
Building Construction	30	7/1/2017	4/1/2018	220	5
Architectural Coating	5	2/1/2018	5/1/2018	60	5
Paving	7	4/1/2018	5/1/2018	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

Grading/Excavation

Soil Export	5,000	Cubic Yards Total
	20	cubic yard truck capacity
	250	total round trip truck trips

Escondido MFRO

Assumptions

20 distance to disposal site (approximate)

Equipment	#	Hrs	Acres disturbed[1]	
air compressors	1	8	0	
Backhoes/Loaders	3	8	0	
concrete/industrial saws	1	4	0	
compactor	1	8	0	
Excavator	1	8	1	
Forklifts	1	8	0	
Grader	1	8	0.5	
Generator Sets	1	8	0	
Skid Steer Loaders	1	8	0	
Sweepers/scrubbers	1	4	0	1.5 Total

Drainage/Utilities/Subgrade

Equipment	#	Hrs	Acres disturbed[1]
air compressors	2	8	0
Backhoes/Loaders	3	8	0
Bore/Drill Rigs	1	8	0
Compactor	1	8	0
Crane	1	8	0
Excavator	1	8	1
Forklift	1	8	0

Escondido MFRO
Assumptions

Generator set	1	8	0	
Pumps	1	4	0	
Skid Steer Loaders	1	8	0	
Sweeper/scrubber	1	4	0	
trencher	1	8	0.5	
Welders	1	8	0	1.5 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

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	1	8	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 occur once a month. Routine operations and maintenance employees would occur 2-3 times per month.

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

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	22.00	1000sqft	5.00	22,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2018
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

Construction Phase - See Project Assumptions

Off-road Equipment - See Project Assumptions

Off-road Equipment - See Project Assumptions

Off-road Equipment - See Project Assumptions

Off-road Equipment - See Project Assumptions

Grading - See Project Assumptions

Trips and VMT - See Project Assumptions

Table Name	Column Name	Default Value	New Value
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tblConstructionPhase	NumDays	18.00	64.00

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tblConstructionPhase	NumDays	8.00	22.00
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tblConstructionPhase	NumDays	18.00	22.00
tblConstructionPhase	NumDays	5.00	22.00
tblConstructionPhase	PhaseEndDate	6/28/2018	5/1/2018
tblConstructionPhase	PhaseEndDate	12/28/2018	4/1/2018
tblConstructionPhase	PhaseEndDate	8/1/2017	7/1/2017
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tblEnergyUse	T24NG	4.54	6.68
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tblGrading	MaterialExported	0.00	5,000.00
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tblTripsAndVMT	HaulingTripNumber	0.00	4.00

tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	25.00	23.00
tblTripsAndVMT	WorkerTripNumber	33.00	30.00
tblTripsAndVMT	WorkerTripNumber	45.00	40.00

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					
2017	1.0211	8.9678	6.6464	0.0101	0.8152	0.5476	1.3628	0.4124	0.5184	0.9309	0.0000	893.4764	893.4764	0.1814	0.0000	897.2861
2018	0.6910	3.8109	3.0899	4.8200e-003	0.6553	0.2295	0.8848	0.3327	0.2177	0.5505	0.0000	422.3256	422.3256	0.0888	0.0000	424.1903
Total	**1.7121**	**12.7788**	**9.7363**	**0.0149**	**1.4705**	**0.7771**	**2.2476**	**0.7451**	**0.7362**	**1.4813**	**0.0000**	**1,315.8020**	**1,315.8020**	**0.2702**	**0.0000**	**1,321.4765**

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					
2017	1.0211	8.9678	6.6464	0.0101	0.3276	0.5476	0.8752	0.1597	0.5184	0.6781	0.0000	893.4754	893.4754	0.1814	0.0000	897.2852
2018	0.6910	3.8109	3.0899	4.8200e-003	0.2531	0.2295	0.4827	0.1260	0.2177	0.3438	0.0000	422.3251	422.3251	0.0888	0.0000	424.1898
Total	**1.7121**	**12.7788**	**9.7363**	**0.0149**	**0.5807**	**0.7771**	**1.3578**	**0.2857**	**0.7362**	**1.0219**	**0.0000**	**1,315.8005**	**1,315.8005**	**0.2702**	**0.0000**	**1,321.4750**

	ROG	NOx	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**	**60.51**	**0.00**	**39.59**	**61.66**	**0.00**	**31.02**	**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	0.0923	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.2000e-004
Energy	7.9000e-004	7.2300e-003	6.0700e-003	4.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	229.4552	229.4552	9.0700e-003	1.9900e-003	230.2625
Mobile	0.0201	0.0482	0.2144	5.3000e-004	0.0362	6.4000e-004	0.0369	9.6900e-003	5.9000e-004	0.0103	0.0000	39.0430	39.0430	1.5700e-003	0.0000	39.0760
Waste						0.0000	0.0000		0.0000	0.0000	5.5376	0.0000	5.5376	0.3273	0.0000	12.4101
Water						0.0000	0.0000		0.0000	0.0000	1.6140	21.6492	23.2633	0.1667	4.0900e-003	28.0322
Total	**0.1132**	**0.0554**	**0.2207**	**5.7000e-004**	**0.0362**	**1.1900e-003**	**0.0374**	**9.6900e-003**	**1.1400e-003**	**0.0108**	**7.1516**	**290.1479**	**297.2995**	**0.5046**	**6.0800e-003**	**309.7812**

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	0.0923	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.2000e-004
Energy	6.8000e-004	6.1400e-003	5.1600e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	225.5504	225.5504	8.9400e-003	1.9500e-003	226.3411
Mobile	0.0201	0.0482	0.2144	5.3000e-004	0.0362	6.4000e-004	0.0369	9.6900e-003	5.9000e-004	0.0103	0.0000	39.0430	39.0430	1.5700e-003	0.0000	39.0760
Waste						0.0000	0.0000		0.0000	0.0000	5.5376	0.0000	5.5376	0.3273	0.0000	12.4101
Water						0.0000	0.0000		0.0000	0.0000	1.6140	21.6492	23.2633	0.1666	4.0900e-003	28.0296
Total	**0.1131**	**0.0543**	**0.2198**	**5.7000e-004**	**0.0362**	**1.1100e-003**	**0.0373**	**9.6900e-003**	**1.0600e-003**	**0.0108**	**7.1516**	**286.2430**	**293.3946**	**0.5044**	**6.0400e-003**	**305.8572**

	ROG	NOx	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	**0.10**	**1.97**	**0.41**	**0.00**	**0.00**	**6.72**	**0.21**	**0.00**	**7.02**	**0.74**	**0.00**	**1.35**	**1.31**	**0.03**	**0.66**	**1.27**

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	6/1/2017	7/1/2017	5	22	
2	Grading	Grading	6/1/2017	7/1/2017	5	22	
3	Drainage Utilities Subgrade	Grading	7/1/2017	4/1/2018	5	195	
4	Building Construction	Building Construction	7/1/2017	4/1/2018	5	195	
5	Architectural Coating	Architectural Coating	2/1/2018	5/1/2018	5	64	
6	Paving	Paving	4/1/2018	5/1/2018	5	22	

Acres of Grading (Site Preparation Phase): 2.5

Acres of Grading (Grading Phase): 2.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 33,000; Non-Residential Outdoor: 11,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Air Compressors	1	8.00	255	0.40
Site Preparation	Concrete/Industrial Saws	1	4.00	81	0.73
Site Preparation	Generator Sets	1	8.00	84	0.74
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Plate Compactors	1	8.00	8	0.43
Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Skid Steer Loaders	1	4.00	64	0.37
Site Preparation	Sweepers/Scrubbers	1	4.00	64	0.46
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Air Compressors	1	8.00	162	0.38
Grading	Concrete/Industrial Saws	1	4.00	174	0.41
Grading	Excavators	1	8.00	162	0.38

Grading	Forklifts	1	8.00	89	0.20
Grading	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Grading	Plate Compactors	1	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Skid Steer Loaders	1	8.00	64	0.37
Grading	Sweepers/Scrubbers	1	4.00	64	0.46
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Drainage Utilities Subgrade	Air Compressors	2	8.00	162	0.38
Drainage Utilities Subgrade	Bore/Drill Rigs	1	8.00	174	0.41
Drainage Utilities Subgrade	Cranes	1	8.00	97	0.37
Drainage Utilities Subgrade	Excavators	1	8.00	162	0.38
Drainage Utilities Subgrade	Forklifts	1	8.00	89	0.20
Drainage Utilities Subgrade	Generator Sets	1	8.00	84	0.74
Drainage Utilities Subgrade	Graders	1	8.00	174	0.41
Drainage Utilities Subgrade	Plate Compactors	1	8.00	255	0.40
Drainage Utilities Subgrade	Pumps	1	4.00	84	0.74
Drainage Utilities Subgrade	Rubber Tired Dozers	1	8.00	255	0.40
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	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Drainage Utilities Subgrade	Trenchers	1	8.00	80	0.50
Drainage Utilities Subgrade	Welders	1	8.00	46	0.45
Building Construction	Air Compressors	3	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	2	8.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20

Building Construction	Generator Sets	1	8.00	84	0.74
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
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Forklifts	1	8.00	89	0.20
Paving	Graders	1	8.00	174	0.41
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Pumps	1	8.00	84	0.74
Paving	Rollers	1	8.00	80	0.38
Paving	Skid Steer Loaders	1	8.00	64	0.37
Paving	Surfacing Equipment	1	8.00	253	0.30
Paving	Sweepers/Scrubbers	1	4.00	64	0.46

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
Site Preparation	10	23.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	13	30.00	0.00	1,000.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Drainage Utilities Subgrade	18	40.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	9.00	4.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	10	25.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2017

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					0.0679	0.0000	0.0679	0.0366	0.0000	0.0366	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0494	0.4727	0.3210	4.7000e-004		0.0265	0.0265		0.0250	0.0250	0.0000	43.8511	43.8511	8.7100e-003	0.0000	44.0341
Total	**0.0494**	**0.4727**	**0.3210**	**4.7000e-004**	**0.0679**	**0.0265**	**0.0945**	**0.0366**	**0.0250**	**0.0616**	**0.0000**	**43.8511**	**43.8511**	**8.7100e-003**	**0.0000**	**44.0341**

3.2 Site Preparation - 2017

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	4.0000e-005	5.2000e-004	4.6000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1343	0.1343	0.0000	0.0000	0.1343
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	1.0400e-003	9.8500e-003	2.0000e-005	2.0300e-003	2.0000e-005	2.0400e-003	5.4000e-004	1.0000e-005	5.5000e-004	0.0000	1.8176	1.8176	9.0000e-005	0.0000	1.8196
Total	**8.3000e-004**	**1.5600e-003**	**0.0103**	**2.0000e-005**	**2.0600e-003**	**3.0000e-005**	**2.0800e-003**	**5.5000e-004**	**2.0000e-005**	**5.7000e-004**	**0.0000**	**1.9519**	**1.9519**	**9.0000e-005**	**0.0000**	**1.9539**

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					0.0252	0.0000	0.0252	0.0136	0.0000	0.0136	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0494	0.4727	0.3210	4.7000e-004		0.0265	0.0265		0.0250	0.0250	0.0000	43.8511	43.8511	8.7100e-003	0.0000	44.0341
Total	**0.0494**	**0.4727**	**0.3210**	**4.7000e-004**	**0.0252**	**0.0265**	**0.0517**	**0.0136**	**0.0250**	**0.0385**	**0.0000**	**43.8511**	**43.8511**	**8.7100e-003**	**0.0000**	**44.0341**

3.2 Site Preparation - 2017

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	4.0000e-005	5.2000e-004	4.6000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1343	0.1343	0.0000	0.0000	0.1343
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	1.0400e-003	9.8500e-003	2.0000e-005	2.0300e-003	2.0000e-005	2.0400e-003	5.4000e-004	1.0000e-005	5.5000e-004	0.0000	1.8176	1.8176	9.0000e-005	0.0000	1.8196
Total	**8.3000e-004**	**1.5600e-003**	**0.0103**	**2.0000e-005**	**2.0600e-003**	**3.0000e-005**	**2.0800e-003**	**5.5000e-004**	**2.0000e-005**	**5.7000e-004**	**0.0000**	**1.9519**	**1.9519**	**9.0000e-005**	**0.0000**	**1.9539**

3.3 Grading - 2017

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					0.0679	0.0000	0.0679	0.0366	0.0000	0.0366	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0583	0.5636	0.4207	5.7000e-004		0.0331	0.0331		0.0310	0.0310	0.0000	51.2478	51.2478	0.0120	0.0000	51.4999
Total	**0.0583**	**0.5636**	**0.4207**	**5.7000e-004**	**0.0679**	**0.0331**	**0.1011**	**0.0366**	**0.0310**	**0.0676**	**0.0000**	**51.2478**	**51.2478**	**0.0120**	**0.0000**	**51.4999**

3.3 Grading - 2017

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	9.7900e-003	0.1295	0.1146	3.7000e-004	8.5300e-003	1.6800e-003	0.0102	2.3400e-003	1.5500e-003	3.8900e-003	0.0000	33.5709	33.5709	2.3000e-004	0.0000	33.5758
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	1.0300e-003	1.3600e-003	0.0129	3.0000e-005	2.6500e-003	2.0000e-005	2.6700e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.3708	2.3708	1.2000e-004	0.0000	2.3734
Total	**0.0108**	**0.1308**	**0.1274**	**4.0000e-004**	**0.0112**	**1.7000e-003**	**0.0129**	**3.0400e-003**	**1.5700e-003**	**4.6100e-003**	**0.0000**	**35.9417**	**35.9417**	**3.5000e-004**	**0.0000**	**35.9492**

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					0.0252	0.0000	0.0252	0.0136	0.0000	0.0136	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0583	0.5636	0.4207	5.7000e-004		0.0331	0.0331		0.0310	0.0310	0.0000	51.2478	51.2478	0.0120	0.0000	51.4999
Total	**0.0583**	**0.5636**	**0.4207**	**5.7000e-004**	**0.0252**	**0.0331**	**0.0583**	**0.0136**	**0.0310**	**0.0446**	**0.0000**	**51.2478**	**51.2478**	**0.0120**	**0.0000**	**51.4999**

3.3 Grading - 2017

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	9.7900e-003	0.1295	0.1146	3.7000e-004	8.5300e-003	1.6800e-003	0.0102	2.3400e-003	1.5500e-003	3.8900e-003	0.0000	33.5709	33.5709	2.3000e-004	0.0000	33.5758
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	1.0300e-003	1.3600e-003	0.0129	3.0000e-005	2.6500e-003	2.0000e-005	2.6700e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.3708	2.3708	1.2000e-004	0.0000	2.3734
Total	**0.0108**	**0.1308**	**0.1274**	**4.0000e-004**	**0.0112**	**1.7000e-003**	**0.0129**	**3.0400e-003**	**1.5700e-003**	**4.6100e-003**	**0.0000**	**35.9417**	**35.9417**	**3.5000e-004**	**0.0000**	**35.9492**

3.4 Drainage Utilities Subgrade - 2017

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					0.6389	0.0000	0.6389	0.3283	0.0000	0.3283	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5138	4.6377	3.4567	4.7300e-003		0.2839	0.2839		0.2665	0.2665	0.0000	425.4970	425.4970	0.1002	0.0000	427.6002
Total	**0.5138**	**4.6377**	**3.4567**	**4.7300e-003**	**0.6389**	**0.2839**	**0.9228**	**0.3283**	**0.2665**	**0.5948**	**0.0000**	**425.4970**	**425.4970**	**0.1002**	**0.0000**	**427.6002**

3.4 Drainage Utilities Subgrade - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	3.5000e-004	3.1000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0895	0.0895	0.0000	0.0000	0.0895
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	8.0800e-003	0.0107	0.1012	2.6000e-004	0.0209	1.6000e-004	0.0210	5.5400e-003	1.4000e-004	5.6800e-003	0.0000	18.6793	18.6793	9.5000e-004	0.0000	18.6993
Total	**8.1100e-003**	**0.0111**	**0.1015**	**2.6000e-004**	**0.0209**	**1.6000e-004**	**0.0211**	**5.5500e-003**	**1.4000e-004**	**5.6900e-003**	**0.0000**	**18.7689**	**18.7689**	**9.5000e-004**	**0.0000**	**18.7888**

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					0.2367	0.0000	0.2367	0.1217	0.0000	0.1217	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5138	4.6377	3.4567	4.7300e-003		0.2839	0.2839		0.2665	0.2665	0.0000	425.4965	425.4965	0.1002	0.0000	427.5997
Total	**0.5138**	**4.6377**	**3.4567**	**4.7300e-003**	**0.2367**	**0.2839**	**0.5206**	**0.1217**	**0.2665**	**0.3881**	**0.0000**	**425.4965**	**425.4965**	**0.1002**	**0.0000**	**427.5997**

3.4 Drainage Utilities Subgrade - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	3.5000e-004	3.1000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0895	0.0895	0.0000	0.0000	0.0895
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	8.0800e-003	0.0107	0.1012	2.6000e-004	0.0209	1.6000e-004	0.0210	5.5400e-003	1.4000e-004	5.6800e-003	0.0000	18.6793	18.6793	9.5000e-004	0.0000	18.6993
Total	**8.1100e-003**	**0.0111**	**0.1015**	**2.6000e-004**	**0.0209**	**1.6000e-004**	**0.0211**	**5.5500e-003**	**1.4000e-004**	**5.6900e-003**	**0.0000**	**18.7689**	**18.7689**	**9.5000e-004**	**0.0000**	**18.7888**

3.4 Drainage Utilities Subgrade - 2018

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					0.6389	0.0000	0.6389	0.3283	0.0000	0.3283	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2241	2.0223	1.6679	2.3600e-003		0.1207	0.1207		0.1134	0.1134	0.0000	210.3858	210.3858	0.0494	0.0000	211.4227
Total	**0.2241**	**2.0223**	**1.6679**	**2.3600e-003**	**0.6389**	**0.1207**	**0.7596**	**0.3283**	**0.1134**	**0.4417**	**0.0000**	**210.3858**	**210.3858**	**0.0494**	**0.0000**	**211.4227**

3.4 Drainage Utilities Subgrade - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	1.6000e-004	1.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0440	0.0440	0.0000	0.0000	0.0440
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	3.6700e-003	4.8800e-003	0.0458	1.3000e-004	0.0104	8.0000e-005	0.0105	2.7700e-003	7.0000e-005	2.8400e-003	0.0000	8.9890	8.9890	4.4000e-004	0.0000	8.9982
Total	**3.6800e-003**	**5.0400e-003**	**0.0459**	**1.3000e-004**	**0.0105**	**8.0000e-005**	**0.0105**	**2.7800e-003**	**7.0000e-005**	**2.8500e-003**	**0.0000**	**9.0329**	**9.0329**	**4.4000e-004**	**0.0000**	**9.0422**

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					0.2367	0.0000	0.2367	0.1217	0.0000	0.1217	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2241	2.0223	1.6679	2.3600e-003		0.1207	0.1207		0.1134	0.1134	0.0000	210.3855	210.3855	0.0494	0.0000	211.4224
Total	**0.2241**	**2.0223**	**1.6679**	**2.3600e-003**	**0.2367**	**0.1207**	**0.3574**	**0.1217**	**0.1134**	**0.2350**	**0.0000**	**210.3855**	**210.3855**	**0.0494**	**0.0000**	**211.4224**

3.4 Drainage Utilities Subgrade - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	1.6000e-004	1.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0440	0.0440	0.0000	0.0000	0.0440
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	3.6700e-003	4.8800e-003	0.0458	1.3000e-004	0.0104	8.0000e-005	0.0105	2.7700e-003	7.0000e-005	2.8400e-003	0.0000	8.9890	8.9890	4.4000e-004	0.0000	8.9982
Total	**3.6800e-003**	**5.0400e-003**	**0.0459**	**1.3000e-004**	**0.0105**	**8.0000e-005**	**0.0105**	**2.7800e-003**	**7.0000e-005**	**2.8500e-003**	**0.0000**	**9.0329**	**9.0329**	**4.4000e-004**	**0.0000**	**9.0422**

3.5 Building Construction - 2017

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	0.3753	3.1250	2.1520	3.4800e-003		0.2017	0.2017		0.1939	0.1939	0.0000	306.4110	306.4110	0.0589	0.0000	307.6476
Total	**0.3753**	**3.1250**	**2.1520**	**3.4800e-003**		**0.2017**	**0.2017**		**0.1939**	**0.1939**	**0.0000**	**306.4110**	**306.4110**	**0.0589**	**0.0000**	**307.6476**

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	3.5000e-004	3.1000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0895	0.0895	0.0000	0.0000	0.0895
Vendor	2.7100e-003	0.0227	0.0336	6.0000e-005	1.6900e-003	3.2000e-004	2.0200e-003	4.8000e-004	3.0000e-004	7.8000e-004	0.0000	5.5146	5.5146	4.0000e-005	0.0000	5.5155
Worker	1.8200e-003	2.4100e-003	0.0228	6.0000e-005	4.6900e-003	3.0000e-005	4.7300e-003	1.2500e-003	3.0000e-005	1.2800e-003	0.0000	4.2029	4.2029	2.1000e-004	0.0000	4.2073
Total	**4.5600e-003**	**0.0255**	**0.0567**	**1.2000e-004**	**6.4100e-003**	**3.5000e-004**	**6.7900e-003**	**1.7400e-003**	**3.3000e-004**	**2.0700e-003**	**0.0000**	**9.8070**	**9.8070**	**2.5000e-004**	**0.0000**	**9.8124**

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	0.3753	3.1250	2.1520	3.4800e-003		0.2017	0.2017		0.1939	0.1939	0.0000	306.4106	306.4106	0.0589	0.0000	307.6473
Total	**0.3753**	**3.1250**	**2.1520**	**3.4800e-003**		**0.2017**	**0.2017**		**0.1939**	**0.1939**	**0.0000**	**306.4106**	**306.4106**	**0.0589**	**0.0000**	**307.6473**

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	3.5000e-004	3.1000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0895	0.0895	0.0000	0.0000	0.0895
Vendor	2.7100e-003	0.0227	0.0336	6.0000e-005	1.6900e-003	3.2000e-004	2.0200e-003	4.8000e-004	3.0000e-004	7.8000e-004	0.0000	5.5146	5.5146	4.0000e-005	0.0000	5.5155
Worker	1.8200e-003	2.4100e-003	0.0228	6.0000e-005	4.6900e-003	3.0000e-005	4.7300e-003	1.2500e-003	3.0000e-005	1.2800e-003	0.0000	4.2029	4.2029	2.1000e-004	0.0000	4.2073
Total	**4.5600e-003**	**0.0255**	**0.0567**	**1.2000e-004**	**6.4100e-003**	**3.5000e-004**	**6.7900e-003**	**1.7400e-003**	**3.3000e-004**	**2.0700e-003**	**0.0000**	**9.8070**	**9.8070**	**2.5000e-004**	**0.0000**	**9.8124**

3.5 Building Construction - 2018

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	0.1644	1.3942	1.0451	1.7400e-003		0.0859	0.0859		0.0827	0.0827	0.0000	152.1044	152.1044	0.0285	0.0000	152.7026
Total	**0.1644**	**1.3942**	**1.0451**	**1.7400e-003**		**0.0859**	**0.0859**		**0.0827**	**0.0827**	**0.0000**	**152.1044**	**152.1044**	**0.0285**	**0.0000**	**152.7026**

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	1.6000e-004	1.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0440	0.0440	0.0000	0.0000	0.0440
Vendor	1.2700e-003	0.0103	0.0161	3.0000e-005	8.5000e-004	1.5000e-004	1.0000e-003	2.4000e-004	1.4000e-004	3.8000e-004	0.0000	2.7099	2.7099	2.0000e-005	0.0000	2.7104
Worker	8.3000e-004	1.1000e-003	0.0103	3.0000e-005	2.3500e-003	2.0000e-005	2.3600e-003	6.2000e-004	2.0000e-005	6.4000e-004	0.0000	2.0225	2.0225	1.0000e-004	0.0000	2.0246
Total	**2.1100e-003**	**0.0115**	**0.0265**	**6.0000e-005**	**3.2300e-003**	**1.7000e-004**	**3.3900e-003**	**8.7000e-004**	**1.6000e-004**	**1.0300e-003**	**0.0000**	**4.7764**	**4.7764**	**1.2000e-004**	**0.0000**	**4.7790**

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	0.1644	1.3942	1.0451	1.7400e-003		0.0859	0.0859		0.0827	0.0827	0.0000	152.1042	152.1042	0.0285	0.0000	152.7024
Total	**0.1644**	**1.3942**	**1.0451**	**1.7400e-003**		**0.0859**	**0.0859**		**0.0827**	**0.0827**	**0.0000**	**152.1042**	**152.1042**	**0.0285**	**0.0000**	**152.7024**

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	1.6000e-004	1.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0440	0.0440	0.0000	0.0000	0.0440
Vendor	1.2700e-003	0.0103	0.0161	3.0000e-005	8.5000e-004	1.5000e-004	1.0000e-003	2.4000e-004	1.4000e-004	3.8000e-004	0.0000	2.7099	2.7099	2.0000e-005	0.0000	2.7104
Worker	8.3000e-004	1.1000e-003	0.0103	3.0000e-005	2.3500e-003	2.0000e-005	2.3600e-003	6.2000e-004	2.0000e-005	6.4000e-004	0.0000	2.0225	2.0225	1.0000e-004	0.0000	2.0246
Total	**2.1100e-003**	**0.0115**	**0.0265**	**6.0000e-005**	**3.2300e-003**	**1.7000e-004**	**3.3900e-003**	**8.7000e-004**	**1.6000e-004**	**1.0300e-003**	**0.0000**	**4.7764**	**4.7764**	**1.2000e-004**	**0.0000**	**4.7790**

3.6 Architectural Coating - 2018

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	0.2549					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5600e-003	0.0642	0.0593	1.0000e-004		4.8200e-003	4.8200e-003		4.8200e-003	4.8200e-003	0.0000	8.1704	8.1704	7.8000e-004	0.0000	8.1867
Total	**0.2645**	**0.0642**	**0.0593**	**1.0000e-004**		**4.8200e-003**	**4.8200e-003**		**4.8200e-003**	**4.8200e-003**	**0.0000**	**8.1704**	**8.1704**	**7.8000e-004**	**0.0000**	**8.1867**

3.6 Architectural Coating - 2018

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	1.8000e-004	2.4000e-004	2.2500e-003	1.0000e-005	5.1000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4425	0.4425	2.0000e-005	0.0000	0.4430
Total	**1.8000e-004**	**2.4000e-004**	**2.2500e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4425**	**0.4425**	**2.0000e-005**	**0.0000**	**0.4430**

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	0.2549					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5600e-003	0.0642	0.0593	1.0000e-004		4.8200e-003	4.8200e-003		4.8200e-003	4.8200e-003	0.0000	8.1704	8.1704	7.8000e-004	0.0000	8.1867
Total	**0.2645**	**0.0642**	**0.0593**	**1.0000e-004**		**4.8200e-003**	**4.8200e-003**		**4.8200e-003**	**4.8200e-003**	**0.0000**	**8.1704**	**8.1704**	**7.8000e-004**	**0.0000**	**8.1867**

3.6 Architectural Coating - 2018

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	1.8000e-004	2.4000e-004	2.2500e-003	1.0000e-005	5.1000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4425	0.4425	2.0000e-005	0.0000	0.4430
Total	**1.8000e-004**	**2.4000e-004**	**2.2500e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4425**	**0.4425**	**2.0000e-005**	**0.0000**	**0.4430**

3.7 Paving - 2018

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	0.0313	0.3121	0.2328	3.9000e-004		0.0178	0.0178		0.0166	0.0166	0.0000	35.3796	35.3796	9.4800e-003	0.0000	35.5786
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0313**	**0.3121**	**0.2328**	**3.9000e-004**		**0.0178**	**0.0178**		**0.0166**	**0.0166**	**0.0000**	**35.3796**	**35.3796**	**9.4800e-003**	**0.0000**	**35.5786**

3.7 Paving - 2018

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	4.0000e-005	4.7000e-004	4.5000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1320	0.1320	0.0000	0.0000	0.1320
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	1.0300e-003	9.6800e-003	3.0000e-005	2.2100e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.9015	1.9015	9.0000e-005	0.0000	1.9035
Total	**8.2000e-004**	**1.5000e-003**	**0.0101**	**3.0000e-005**	**2.2400e-003**	**3.0000e-005**	**2.2600e-003**	**6.0000e-004**	**2.0000e-005**	**6.2000e-004**	**0.0000**	**2.0335**	**2.0335**	**9.0000e-005**	**0.0000**	**2.0355**

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	0.0313	0.3121	0.2328	3.9000e-004		0.0178	0.0178		0.0166	0.0166	0.0000	35.3796	35.3796	9.4800e-003	0.0000	35.5786
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0313**	**0.3121**	**0.2328**	**3.9000e-004**		**0.0178**	**0.0178**		**0.0166**	**0.0166**	**0.0000**	**35.3796**	**35.3796**	**9.4800e-003**	**0.0000**	**35.5786**

3.7 Paving - 2018

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	4.0000e-005	4.7000e-004	4.5000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1320	0.1320	0.0000	0.0000	0.1320
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	1.0300e-003	9.6800e-003	3.0000e-005	2.2100e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.9015	1.9015	9.0000e-005	0.0000	1.9035
Total	**8.2000e-004**	**1.5000e-003**	**0.0101**	**3.0000e-005**	**2.2400e-003**	**3.0000e-005**	**2.2600e-003**	**6.0000e-004**	**2.0000e-005**	**6.2000e-004**	**0.0000**	**2.0335**	**2.0335**	**9.0000e-005**	**0.0000**	**2.0355**

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	0.0201	0.0482	0.2144	5.3000e-004	0.0362	6.4000e-004	0.0369	9.6900e-003	5.9000e-004	0.0103	0.0000	39.0430	39.0430	1.5700e-003	0.0000	39.0760
Unmitigated	0.0201	0.0482	0.2144	5.3000e-004	0.0362	6.4000e-004	0.0369	9.6900e-003	5.9000e-004	0.0103	0.0000	39.0430	39.0430	1.5700e-003	0.0000	39.0760

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	33.00	33.00	33.00	96,344	96,344
Total	33.00	33.00	33.00	96,344	96,344

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
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

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	218.8609	218.8609	8.8100e-003	1.8200e-003	219.6109
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	221.5894	221.5894	8.9200e-003	1.8500e-003	222.3488
NaturalGas Mitigated	6.8000e-004	6.1400e-003	5.1600e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	6.6895	6.6895	1.3000e-004	1.2000e-004	6.7302
NaturalGas Unmitigated	7.9000e-004	7.2300e-003	6.0700e-003	4.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	7.8658	7.8658	1.5000e-004	1.4000e-004	7.9137

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	147400	7.9000e-004	7.2300e-003	6.0700e-003	4.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	7.8658	7.8658	1.5000e-004	1.4000e-004	7.9137
Total		**7.9000e-004**	**7.2300e-003**	**6.0700e-003**	**4.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**7.8658**	**7.8658**	**1.5000e-004**	**1.4000e-004**	**7.9137**

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	125356	6.8000e-004	6.1400e-003	5.1600e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	6.6895	6.6895	1.3000e-004	1.2000e-004	6.7302
Total		**6.8000e-004**	**6.1400e-003**	**5.1600e-003**	**4.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**6.6895**	**6.6895**	**1.3000e-004**	**1.2000e-004**	**6.7302**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	678040	221.5894	8.9200e-003	1.8500e-003	222.3488
Total		**221.5894**	**8.9200e-003**	**1.8500e-003**	**222.3488**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	669691	218.8609	8.8100e-003	1.8200e-003	219.6109
Total		**218.8609**	**8.8100e-003**	**1.8200e-003**	**219.6109**

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	0.0923	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.2000e-004
Unmitigated	0.0923	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.2000e-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	6.3700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0859					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.2000e-004
Total	**0.0923**	**0.0000**	**2.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.9000e-004**	**3.9000e-004**	**0.0000**	**0.0000**	**4.2000e-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	6.3700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0859					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.2000e-004
Total	**0.0923**	**0.0000**	**2.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.9000e-004**	**3.9000e-004**	**0.0000**	**0.0000**	**4.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	23.2633	0.1666	4.0900e-003	28.0296
Unmitigated	23.2633	0.1667	4.0900e-003	28.0322

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	5.0875 / 0	23.2633	0.1667	4.0900e-003	28.0322
Total		**23.2633**	**0.1667**	**4.0900e-003**	**28.0322**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	5.0875 / 0	23.2633	0.1666	4.0900e-003	28.0296
Total		**23.2633**	**0.1666**	**4.0900e-003**	**28.0296**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.5376	0.3273	0.0000	12.4101
Unmitigated	5.5376	0.3273	0.0000	12.4101

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	27.28	5.5376	0.3273	0.0000	12.4101
Total		**5.5376**	**0.3273**	**0.0000**	**12.4101**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	27.28	5.5376	0.3273	0.0000	12.4101
Total		**5.5376**	**0.3273**	**0.0000**	**12.4101**

9.0 Operational Offroad

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

10.0 Vegetation