ORANGE COUNTY SANITATION DISTRICT (OCSD) HEADWORKS REHABILITATION AT PLANT NO. 1 (PROJECT NO. P1-105)

Draft Initial Study/Mitigated Negative Declaration

Prepared for
Orange County Sanitation District

April 2019

ESA

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140937

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SECTION 1
Introduction

OCSD proposes to implement the Headworks Rehabilitation and Expansion Project at Plant No. 1 (Project No. P1-105) (referred to herein as the proposed project). The headworks facilities at OCSD's Plant No. 1 include Headworks No. 1 and Headworks No. 2. Headworks No. 1 was built and modified in the 1950s and 1960s, and is currently out of service, except for influent pumping that can be used when capacity is needed for peak storm flows. Headworks No. 2 began operation in 1989 and is more than 25 years old. Due to the severe and corrosive atmosphere of the headworks processes, some structures and equipment associated with Headworks No. 2 are damaged and/or corroded. The proposed project is intended to extend the useful life of Headworks No. 2, as well as increase the influent pumping capacity of Headworks No. 2 so that Headworks No. 1 can be demolished. The proposed project would not change the existing total capacity of the headworks facilities at Plant No. 1 (i.e., 320 million gallons per day [mgd]).

1.1 Statutory Authority and Requirements

In accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Sections 21000–21177) and the CEQA Guidelines (California Code of Regulations (CCR), Title 14, Section 15000 et seq.), OCSD, acting in the capacity of Lead Agency, is required to prepare an Initial Study (IS) to determine if the proposed project may have a significant effect on the environment. (CEQA Guidelines Section 15063) If a Lead Agency finds that there is no substantial evidence that a project, either as proposed or as modified to include the mitigation measures identified in the IS, may cause a significant effect on the environment, the Lead Agency must prepare a Negative Declaration or Mitigated Negative Declaration (MND) for that project. (Public Resources Code Section 21080(c), CEQA Guidelines Section 15070(b))

This document is prepared in accordance with CEQA and is intended to provide an environmental analysis to support subsequent discretionary actions upon the project. (CEQA Guidelines Section 15074) This analysis is not a policy document and its approval by OCSD neither presupposes nor mandates any actions on the part of those agencies from whom permits and other discretionary approvals would be required. This environmental documentation and supporting analysis is subject to a public review period. (CEQA Guidelines Sections 15073, 15105) During this review period, comments on the document should be addressed to the OCSD. OCSD will consider any comments received as part of the proposed project's environmental review and include them with the CEQA documentation for consideration by the OCSD Board of Directors. Please send all comments to:

Kevin Hadden
Orange County Sanitation District
Engineering Planning
10844 Ellis Avenue
Fountain Valley, CA 92708
Email: CEQA@ocsd.com

1.2 Purpose

Acting as the CEQA Lead Agency, OCSD has prepared this IS/MND to provide the public and responsible agencies with information about the potential environmental impacts associated with implementation of the proposed project. This IS/MND was prepared in compliance with Sections 15063 and 15070 through 15075 of the CEQA Guidelines. In accordance with Section 15070 of the CEQA Guidelines, an MND shall be prepared if the IS identifies potentially significant effects, but revisions in the project plans would avoid or mitigate the effects to a point where clearly no significant effects would occur, and there is no substantial evidence that the revised project may have a significant effect on the environment.

SECTION 2
Project Description

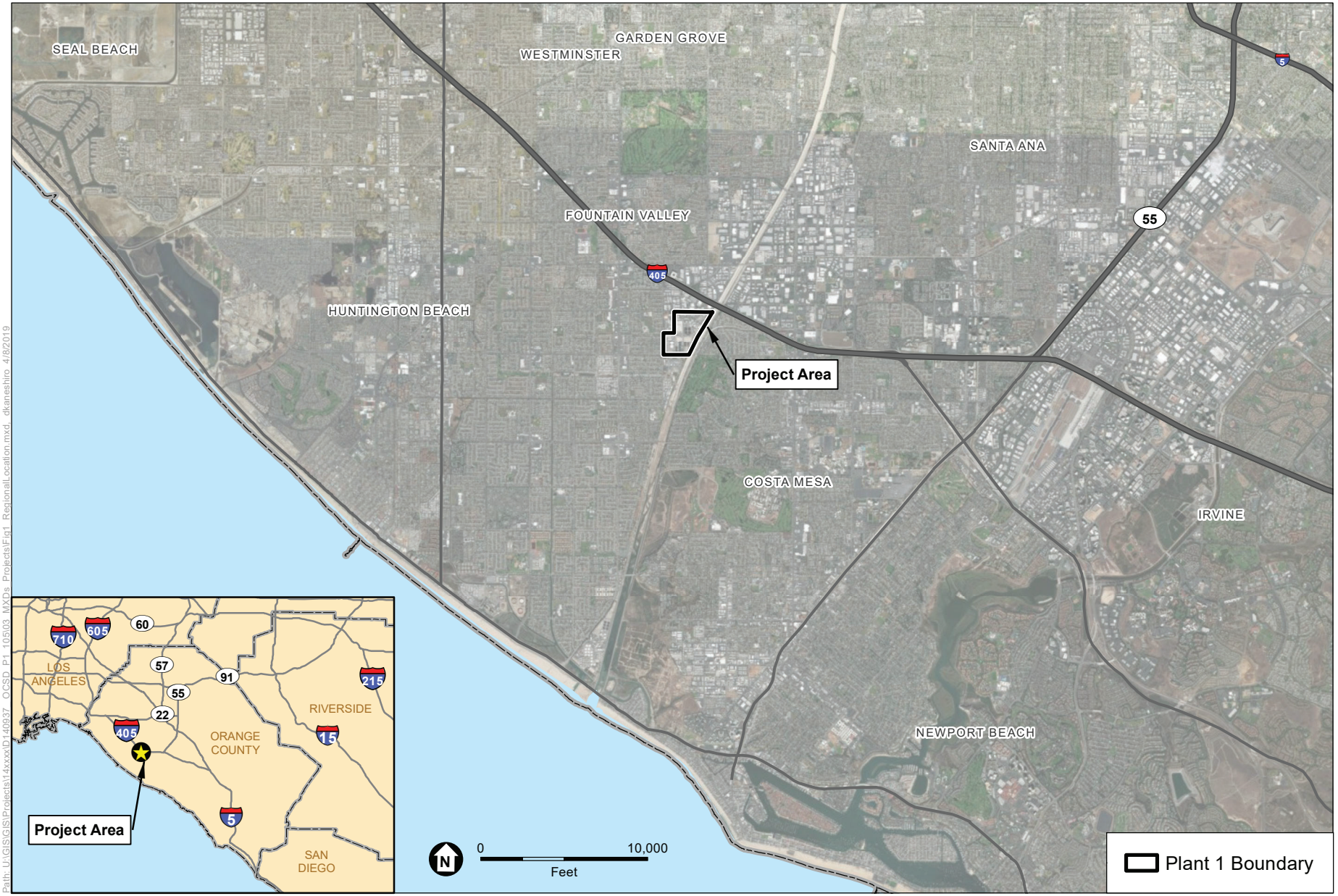
The proposed project includes rehabilitation, demolition, and new construction of headworks structures on Plant No. 1. The information presented herein for the proposed project is summarized from the *Headworks Rehabilitation and Expansion at Plant 1, Project No. P1-105, Attachment A, Scope of Work* (Carollo Engineers, Inc. 2019). The location and elements of the proposed project are described further below.

2.1 Project Location and Setting

OCSD facilities are located in northwestern Orange County, California as depicted on **Figure 1, Regional Location**. The proposed project would be located entirely within the OCSD Plant No. 1 boundary. Plant No. 1 is located in the City of Fountain Valley, which is geographically located just north of the cities of Huntington Beach, Costa Mesa, and Newport Beach, and just south of the cities of Santa Ana and Westminster. Plant No. 1 is a 112-acre wastewater treatment plant and is characterized as a developed industrial site containing numerous structures that vary in height, mass and function. Plant No. 1 is located at 10844 Ellis Avenue and is bound by Ellis Avenue to the north, the Orange County Water District (OCWD) and Ward Street to the west, Garfield Avenue to the south, and the Santa Ana River and Santa Ana River Trail to the east.

Commercial uses are located across Ellis Avenue, and Interstate 405 is located approximately 0.15-mile north of Plant No. 1. Residential neighborhoods are located east of the Santa Ana River and west of Ward Street with the nearest residential property being approximately 500 feet east across the Santa Ana River. Industrial uses are located to the south across Garfield Avenue. The Fountain Valley General Plan designates Plant No. 1 as a Specific Plan Area and is zoned as Specific Plan-Orange County Sanitation District.

The project area is located within the northeastern portion of Plant No. 1, east of the OCWD property. The project area is depicted on **Figure 2, Project Area** and encompasses approximately 7 acres. This project area captures the footprint and associated staging areas needed for demolition, construction, and rehabilitation activities.



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SOURCE: ESRI

Headworks Rehabilitation and Expansion Project (Project No. P1-105)

Figure 1
Regional Location

ESA

SOURCE: ESRI

Headworks Rehabilitation and Expansion Project (Project No. P1-105)

Figure 2
Project Area

ESA

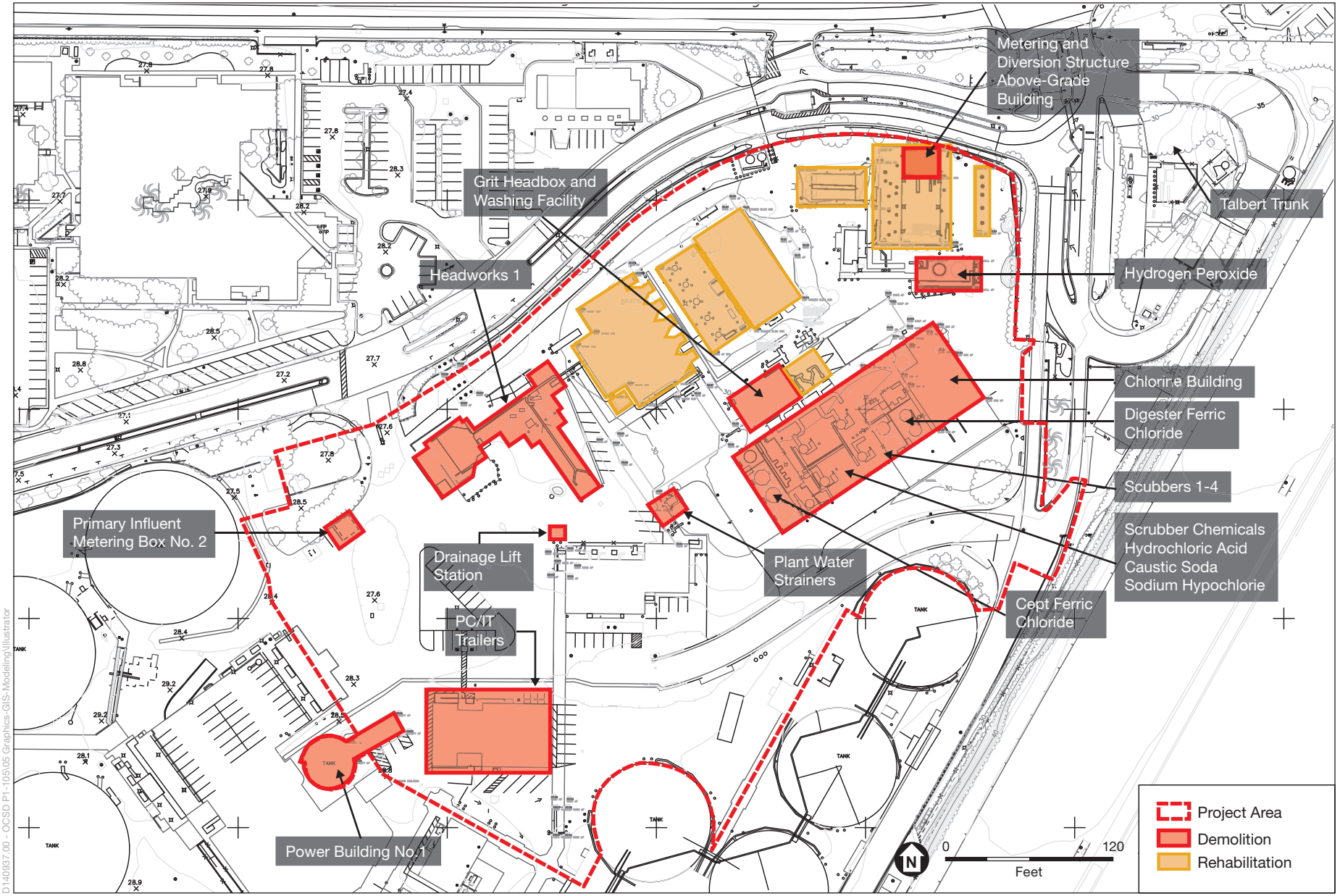
2.2 Description of Project Elements

The proposed project includes rehabilitation of existing process facilities; demolition of the Metering and Diversion Electrical Building, Headworks No. 1 Structure, Chlorine Building, Headworks Odor Control Facility, PCI/IT/EIM Trailers, and multiple chemical facilities; and construction of new structures and a new tunnel extension to the new Power Building 3. Rehabilitation, demolition, and new structures associated with the proposed project are described further below. **Figure 3, Demolition and Rehabilitation Plan** depicts existing structures to be demolished or rehabilitated; **Figure 4, New Facilities Plan** depicts the new structures that would be constructed.

2.2.1 Rehabilitation

The following existing structures on Plant No. 1 would be subject to rehabilitation as part of the proposed project:

- **Metering & Diversion (M&D) Box:** Below-grade, water-bearing, enclosed structure. The box gives capability to divert flow from the incoming sewer trunks. Structural rehabilitation of walls, removable concrete partitions, and pipelines.
- **M&D Structure (Below grade):** Enclosed structure that measures flow from the sewer trunks through large flow meters and provides capability to divert a portion of the flow to Plant 2.
- **Sunflower Pump Station:** Gate replacement, concrete and liner repairs, and new electrical feed from Headworks Electrical Room to existing field panel.
- **Bar Screen Facility:** Approximately 35 feet high, enclosed building housing four existing mechanical bar screens. Complete rehabilitation with two additional bar screens being provided.
- **Bin Loading Building:** Above-grade, enclosed, two-level building currently used for loading of screened material and grit into bins for off-site disposal. Building will undergo complete rehabilitation for screenings loading only as grit will be handled in a new building.
- **Influent Pump Station:** Structure housing the influent pumping wet well and five main sewage pumps in a dry well. Complete rehabilitation.
- **Grit Basins:** Water-bearing structure and associated equipment for grit removal. Complete rehabilitation.
- **PI Splitter Box:** Water-bearing structure for distributing degritted flow to primary clarifiers. Complete rehabilitation as well as reconfiguration for structural and geotechnical stabilization.
- **Influent Sampling Building:** Above-grade, 13 feet high, enclosed building that houses two automatic samplers. Complete rehabilitation.
- **Power Building 5:** Two new 12 kv electrical duct banks to feed power to this existing building.
- **Existing Tunnels:** Rehabilitation of piping, electrical and optical cables and conduits, and associated supports in Tunnels 1 through 7.



SOURCE: Albert J. Long & Associates, 2015

Headworks Rehabilitation and Expansion Project (Project No. P1-105)

Figure 3
Demolition and Rehabilitation Plan

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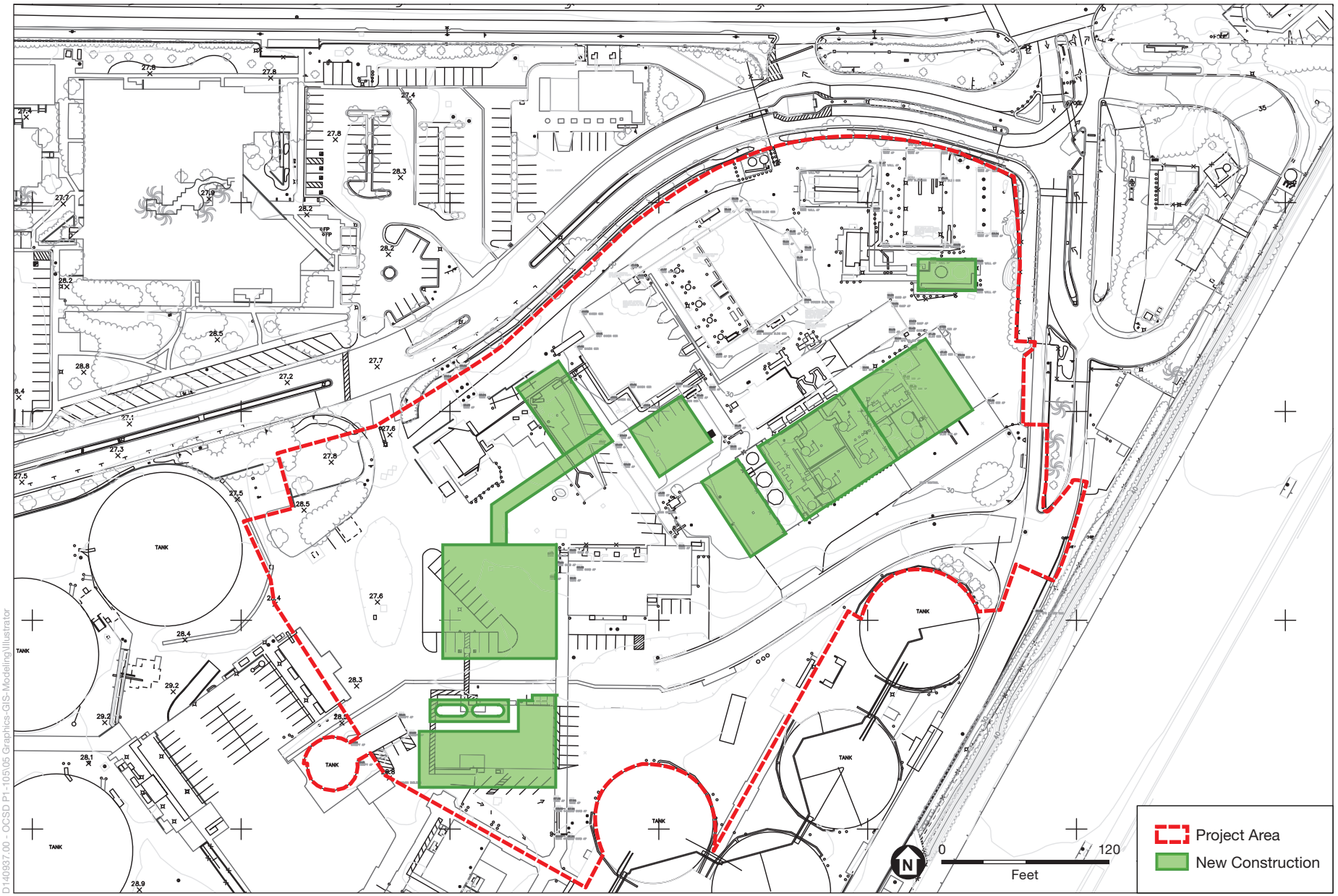

SOURCE: Albert J. Long & Associates, 2015

Headworks Rehabilitation and Expansion Project (Project No. P1-105)

Figure 4
New Facilities Plan

ESA

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2.2.2 New Structures

The following structures would be constructed as part of the proposed project. New above-grade structures would range between 18 and 39 feet in height.

- **Grit Pump Station:** A 2,700 sq ft, 18 ft deep, below-grade, open concrete structure housing new grit pumps and grit aeration blowers. The pump station includes a 435 sq ft, 18 ft high, grit headbox structure.
- **Grit Handling Building:** A 3,500 sq ft, 37 ft high, above-grade, two-level, enclosed concrete building housing grit handling and bin-loading equipment.
- **Headworks Odor Control Facility:** Four new 40.5 ft high vertical chemical odor scrubbers. The scrubbers are above grade and sit on a 5,000 sq ft concrete pad.
- **Headworks Odor Control Chemical Facility:** A 9,200 sq ftchemical facility which includes Caustic Soda (one tank), Sodium Hypochlorite (one tank), Hydrochloric Acid (one tank), and metering pumps and ancillary equipment for each chemical. The facility includes two 12 ft high canopies over the chemical pumps. Tanks would be no taller than 20 feet.
- **Ferric Chloride Facility:** A 3,600 sq ft facility containing three ferric chloride storage tanks, metering pumps, and ancillary equipment. The station includes a 12 ft high canopy over the pumps. The chemical tanks rise 24 ft above grade.
- **Headworks Electrical Building:** A 1,600 sq ft, above-grade, one story, enclosed concrete electrical building.
- **Power Building 3:** A 11,200 sq ft, 18 ft high, above-grade, one story, enclosed concrete electrical building that will contain motor control centers, switchgear, control cabinets, and associated equipment. A 12.5 ft deep basement will span the full floor area. Transformers will be located outside of the building.
- **Headworks Standby Power Building:** A 6,700 sq ft, 32 ft high, above-grade, one story, enclosed concrete electrical building housing 4 diesel standby generators, 2 palnt air compressors, and associated equipment. A partial basement and a below-grade fuel tank will be included.
- **Tunnel 5 Extension:** New below-grade concrete utility tunnel to Power Building 3. The tunnel is approximately 200 ft in the length and extends 15 ft below grade.
- **Drainage Lift Station:** New below grade concrete pump station with submersible pumps, approximately 30 feet deep.

2.2.3 Demolition

Demolition of existing facilities would generally include removal (or in some cases abandoning in place) of concrete, steel, mechanical equipment, piping, electrical wiring, raceways and ductbanks, as well as other utilities which may be present. The following existing structures on Plant No. 1 would be demolished as part of the proposed project:

- **M&D Structure (Above-Grade):** An 830 sq ft, 12.5 ft high, above-grade building on top of the below-grade M&D Structure. Houses electrical and instrumentation equipment and a restroom.

- **Grit Headbox and Washing Facility:** A facility containing grit handling equipment that includes a 112 sq ft, 13 ft high, above-grade headbox and a 1,056 sq ft, partially below and above grade washing facility. The washing facility extends 14 ft below grade at its lowest point and has a deck that extends 6 ft above grade.
- **Headworks No. 1 Structure:** The structure includes the following: a 2,000 sq ft, 10 ft high, above-grade, partial water bearing structure that also includes an electrical room; a 2,900 sq ft, 10 ft high grit basin with grit removal equipment and an 18 ft high grit conveyor and truck hopper; a 2,000 sq ft, 20 ft below grade enclosed water bearing feed channel; a 1,400 sq ft, 23 ft below-grade enclosed pump station housing influent pumps.
- **Primary Influent Metering Box No. 2:** A 289 sq ft, 10 ft deep, below-grade structure containing a 72" reinforced concrete pipe and flow meter that measures flow leaving Headworks 1.
- **Drainage Lift Station:** An 80 sq ft, 18 ft deep, below-grade structure containing 2 drainage sump pumps. The lift station collects storm water collected in the area of existing Power Building 3A.
- **Plant Water Strainer Station:** A 180 sq ft above-grade pipe station. The station is a slab on grade with no walls. A 12" plant water pipe rises above grade over the pad for access to a water strainer. This system is no longer in service.
- **Power Building 1:** A 2,900 sq ft, 14 ft high, above-grade building that is currently unused. The building has an 1,800 sq ft basement that extends 20 ft below grade.
- **Chlorine Building:** A 3,800 sq ft, 26 ft high, above-grade building consisting of bulk chlorine storage and chlorinator rooms, an electrical room, and a plant air compressor located outside the building. Most of the chlorination and other equipment has been removed from the building as part of a previous project.
- **Headworks Odor Control and Chemical Facility:** A 14,800 sq ft facility consisting of the following facilities:
  - Chemical Odor Control Scrubbers: Four 35 ft tall odor scrubbing vertical towers.
  - Sodium Hypochlorite: One bulk storage tank and chemical feed pumps.
  - Hydrochloric Acid: One bulk storage tank and chemical feed pumps.
  - Caustic Soda: One bulk storage tank and chemical feed pumps.
  - Ferric Chloride: Four bulk storage tanks and chemical feed pumps.
- **Hydrogen Peroxide Facility:** A 1,600 sq ft above-grade facility with one bulk storage tank and chemical feed pumps.
- **PCI/IT/EIM Trailers:** A 6,900 sq ft above-grade trailer complex used for office space.

2.3 Project Implementation

Implementation of the proposed project would consist of a combination of construction activities that include demolition of existing facilities, rehabilitation of existing facilities, and construction of new facilities, as well as operating and maintaining facilities once construction and rehabilitation is complete. This section describes the characteristics associated with construction (including rehabilitation and demolition) and operation and maintenance phases of the proposed project.

2.3.1 Construction Phase Characteristics

Construction Schedule

It is anticipated that the construction phase of the proposed project would begin in 2020 and would take approximately 8 years to complete. In general, construction activities would occur between 7:00 a.m. and 8:00 p.m., Monday through Friday. **Table 1** summarizes the proposed construction activities and their estimated durations. Rehabilitation of existing facilities will occur during all phases of the proposed project.

TABLE 1
CONSTRUCTION PHASE DURATION

Type of Construction	Estimated Duration
Site Preparation/Grading/Excavation	19 months
Building Construction (Rehabilitation)	45 months
Building Construction (New)	51 months
Demolition	10 months
Total Construction Phase Duration	8 years

Note: Some construction phases would occur simultaneously.

Construction Activities

All construction activities associated with the proposed project would occur within the Plant No. 1 boundary. Construction equipment, vehicles, personnel, and materials staging areas would be located onsite at Plant No. 1. Access to Plant No. 1 would primarily utilize the I-405 Freeway, the Euclid Street off-ramp, Ellis Avenue, Ward Street and Garfield Avenue. Construction traffic would utilize the entrance along Garfield Avenue. The following subsections provide descriptions of the various aspects of the proposed project's construction phase. **Table 2** summarizes heavy equipment that will be used during construction of the proposed project. Table 2 shows the equipment that could be used during any of the construction phases and is not indicative of the total amount that would be operated onsite at any given time.

TABLE 2
CONSTRUCTION HEAVY EQUIPMENT

Equipment Type	Estimated Quantity
Dirt Truck	1
Skidsteer	2
Wheel Loader	1
Backhoe Loader	3
Dozer	2
Trackhoe	2
Trackhoe with Hammer Attachment	1
Water Truck	1
Concrete Mixer	2
Crane	2
Telehandler	1
Forklift	2
Pile Driver	1
Compactor	1
Paver	1
Generator	1
Groundwater Pump	1

Rehabilitation

The proposed project includes the rehabilitation of various facilities at Plant No. 1. Rehabilitation would be completed using hand tools, concrete mixers, cranes, telehandlers, forklifts, elevated work platforms, pavers, backhoe loaders. Temporary diesel-powered bypass pumps will be used during limited portions of the construction activities and during peak storm flow events. Excavation associated with rehabilitation would be minor such as uncovering subsurface equipment that needs to be renovated; excavated soils are planned to be reused onsite as backfill.

New Structures

The proposed project would construct new above-grade structures and new below-grade structures as described previously. New structures will require the installation of piles, which would be driven to a depth of approximately 80 feet. Equipment needed for construction of new structures would include hand tools, dirt trucks, concrete mixers, cranes, telehandlers, forklifts, pile drivers, elevated work platforms, skidsteers, wheel loaders, backhoe loaders, dozers, trackhoes, water trucks, compactors, pavers, generators, and groundwater pumps. Due to soil conditions (clays), only a small portion of excavated soil is re-usable as fill for new construction. Unusable excavated soil material will be hauled offsite. Approximately 21,300 cubic yards of soil will be exported, and 15,750 cubic yards of soil will be imported during construction of new facilities.

Demolition

The proposed project would demolish 11 existing structures, totaling approximately 12,500 cubic yards of construction material. In addition, 4,200 cubic yards of soil will be excavated and removed from the site during demolition of existing facilities and 12,500 cubic yards of soil will be imported for backfill. Generally, ground disturbance during demolition would not extend deeper than 25 feet; concrete below this depth would be left in place. Demolition would be completed using dirt trucks, skidsteers, wheel loaders, backhoe loaders, dozers, trackhoes, trackhoes with hammer attachment, and water trucks. Construction waste would be disposed of at the Frank R. Bowerman Landfill located at 11002 Bee Canyon Access Road in the City of Irvine.

Due to the age of some facilities, hazardous material may be encountered during removal. Hazardous materials, including asbestos-containing materials, lead-based paint, and universal wastes were documented in facilities designated for demolition during a hazardous materials survey. Removal of these materials would be performed in accordance with federal and state regulations.

Construction Work Force and Truck Trips

Up to 150-200 workers per day would be required during the peak construction phase (building construction) of the proposed project. While the building construction phase is intended to last several years, not all of the building construction phase would require this many workers. Construction-related transportation activities associated with the proposed project will include haul truck trips, construction material truck trips and employee trips.

2.4 Operation and Maintenance

Full operation of all components of the proposed project is estimated to commence in 2028, and operate as needed 24 hours per day, 7 days a week. Operation of proposed facilities would only require periodic maintenance, daily staffing, and periodic deliveries similar to existing conditions. The proposed facilities are anticipated to require a nominal increase in the number of employees compared to the existing facilities. Therefore, the proposed project would not require a significant increase in OCSD full-time employees for operation and maintenance of rehabilitated and newly constructed facilities.

No changes in the number of truck trips associated with chemical deliveries would occur with the proposed project. Similar to existing conditions, the chemical deliveries to Plant No. 1 would be periodic. Operation of the proposed new structures would result in continued onsite chemical use and storage and would not involve the use of any new chemicals. Similar to existing storage, chemicals would continue to be stored in aboveground chemical storage tanks; however, these tanks would be upgraded and new compared to the existing tanks. The storage tanks would be located in dedicated secondary containment areas to confine accidental spills and prevent exposure to the environment. The containment areas would be sized to accommodate storage tank volumes to prevent accidental spills.

Similar to the existing Plant No. 1 facilities, the proposed new facilities would require varying amounts of energy during operation. Because the proposed facilities are upgraded and more energy efficient than the existing facilities, the proposed project would not significantly increase the need for energy.

2.5 Required Approvals

The proposed project may require approvals from the following agencies:

- Santa Ana Regional Water Quality Control Board, Storm Water Pollution Prevention Plans (SWPPP) and General Construction Permit;
- City of Fountain Valley, local construction/encroachment permits;
- South Coast Air Quality Management District, Permit to Construct and Permit to Operate

SECTION 3
Initial Study Checklist

3.1 Background

1. Project Title: Headworks Rehabilitation at Plant No. 1, Project No. P1-105
2. Lead Agency Name and Address: Orange County Sanitation District 10844 Ellis Avenue Fountain Valley, CA 92708
3. Contact Person and Phone Number: Mr. Kevin Hadden (714) 593-7462
4. Project Location: Orange County Sanitation District Treatment Plant No. 1 10844 Ellis Avenue Fountain Valley, CA 92708
5. Project Sponsor's Name and Address: Orange County Sanitation District
6. General Plan Designation(s): Specific Plan Area
7. Zoning: Specific Plan – Orange County Sanitation District
8. Description of the Project: The proposed project includes rehabilitation, demolition, and new construction of headworks structures on Plant No. 1.
9. Surrounding Land Uses and Setting: The proposed project would be located entirely within OCSD Plant No. 1 boundary. Plant No. 1 is a 112-acre wastewater treatment plant and is characterized as a developed industrial site containing numerous structures that vary in height, mass and function. Plant No. 1 is bound by Ellis Avenue to the north, the Orange County Water District (OCWD) and Ward Street to the west, Garfield Avenue to the south, and the Santa Ana River and Santa Ana River Trail to the east.
10. Other public agencies whose approval is required (e.g., permits): Santa Ana Regional Water Quality Control Board – Region 8, City of Fountain Valley, South Coast Air Quality Management District

3.2 Environmental Factors Potentially Affected

The environmental factors checked below include impacts that are "Less Than Significant with Mitigation Incorporated." There are no environmental factors that have an impact that is identified as a "Potentially Significant Impact" because all potential significant impacts can be reduced to less than significant with the incorporation of mitigation measures.

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

DETERMINATION:

On the basis of this IS:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Adam Nazaroff — Signature

Adam Nazaroff — Printed Name

4/25/19 — Date

Orange County Sanitation District — For

SECTION 4
Environmental Analysis

Sections 4.1 through 4.21 analyze the potential environmental impacts associated with the project. The environmental issue areas that are evaluated are:

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

The environmental analysis in the following sections is patterned after the IS Checklist recommended by the CEQA Guidelines Appendix G, as amended, and used by OCSD in its environmental review process. The IS Checklist will identify and briefly explain the environmental effects of the Project. For any effects that are determined to be potentially significant, the IS will identify and evaluate feasible measures that may be incorporated into the project to avoid or mitigate any adverse impacts.

For the evaluation of potential impacts, the questions in the IS Checklist are stated and an answer is provided according to the analysis undertaken as part of the IS. The analysis considers the long-term, direct, and indirect impacts of the development. To each question, there are four possible responses:

- No Impact. The development will not have any measurable environmental impact on the environment.
- Less than Significant Impact. The development will have the potential for impacting the environment, although this impact will be below established thresholds that are considered to be significant.

- Less than Significant with Mitigation Incorporated. The development will have the potential to generate impacts, which may be considered as a significant effect on the environment, although mitigation measures or changes to the development's physical or operational characteristics can reduce these impacts to levels that are less than significant.
- Potentially Significant Impact. The development could have impacts, which may be considered significant, and therefore additional analysis is required to identify mitigation measures that could reduce potentially significant impacts to less than significant levels.

The following is a discussion of potential project impacts as identified in the IS/ Environmental Checklist. Explanations are provided for each item.

4.1 Aesthetics

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

Discussion

The City of Fountain Valley is geographically located just north of the cities of Huntington Beach, Costa Mesa, and Newport Beach, and just south of the cities of Santa Ana and Westminster (City of Fountain Valley 2018). The City is heavily urbanized with a mix of residential, commercial and industrial uses, and is predominantly flat and largely characterized by one or two-story structures. The City is entirely land-locked and has no direct contact with the Pacific Ocean. The City's General Plan does not designate scenic views or vistas within Fountain Valley (City of Fountain Valley 1995); however, visual elements considered to contribute positively to the City include open areas used for recreational activities such as Mile Square Park (City of Fountain Valley 2018).

Plant No. 1 is partially visible from public and private locations, including a commercial area north of Ellis Avenue, residential communities located to the west across Ward Street, a nursery/landscape and industrial area located south of Garfield Avenue, and the Santa Ana River Trail to the east. Views of Plant No. 1 from Ward Street are partially screened by trees and a landscaped berm located adjacent to the east side of Ward Street. Views of Plant No. 1 from Ellis Avenue are partially screened by trees and a screening block wall located adjacent to the south side of Ellis Avenue.

Major roadway corridors include the Interstate-405 (I-405) to the northeast, Beach Boulevard (SR-39) to the west, Costa Mesa Freeway (SR-55) to the east and PCH (SR-1) PCH to the south. According to the California Department of Transportation (Caltrans) List of Scenic Highways, the project area is not located along a State Scenic Highway (Caltrans 2018).

There are two primary sources of light onsite: 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 source 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. Existing

light sources within the project area include existing on-site uses associated with Plant No. 1 facilities.

Glare is caused by the reflection of sunlight or artificial light by highly polished surfaces such as window glass or reflective materials and, to a lesser degree, from broad expanses of light-colored surfaces or vehicle headlights. Glare-sensitive uses include residences, and transportation corridors. Potentially affected viewers in the local viewshed include motorists, residents, and recreational visitors.

Environmental Evaluation

Would the project:

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

Less than Significant Impact. The City of Fountain Valley does not have any designated scenic views or vistas in the vicinity of Plant No. 1 (City of Fountain Valley 1995). Although there are no designated vistas, a discussion of potential visual impacts with the implementation of the proposed improvements at Plant No. 1 is provided below.

At Plant No. 1, the presence of construction equipment and materials would occur for approximately eight years. The project area would be at least 1,900 feet from the residential public viewpoints along Ward Street. These views would be obstructed by the existing vegetation located along the length of Ward Street as well as the existing structures between the project area and Ward Street. Further, the construction equipment and materials for the project would be approximately 150 feet from the public viewpoints along Ellis Avenue. However, given that uses along Ellis Avenue include commercial and office, these viewpoints are not scenic vistas and not considered visually sensitive. Further, obstructed views of Plant No. 1 are provided by recreational users along the Santa Ana River Trail; therefore, construction equipment and activities may be partially visible along the Santa Ana River Trail. Further east of the project site are residential uses within the City of Costa Mesa that are approximately 500 feet from the project site. These uses do not have views of the project site because the Santa Ana River is channelized in this area and the existing bike path and maintenance road that are located on top of the levees on the east and west sides, respectively along the Santa Ana River are located approximately 10 to 20 feet higher in elevation than the residential uses.

Construction would be limited to approximately 7 acres within the active treatment plant and is temporary in nature. Additionally, most construction activities would be obstructed by existing vegetation, and no sensitive views are located within the immediate vicinity of the project area. Therefore, visual impacts at public viewpoints from the presence of construction activities at Plant No. 1 would be less than significant.

After the completion of construction activities associated with the proposed project facilities, the structures and buildings would be permanent at Plant No. 1. The tallest proposed building could be up to 39 feet in height. As described previously, the proposed structures would be at least 1,900 feet from the residential public viewpoints along Ward Street and would not be visible from the residential area east of the Santa Ana River. These views along Ward Street toward the

proposed structures would be obstructed by the existing vegetation located along the length of Ward Street as well as the existing structures between the project area and Ward Street. The views from the residential area east of the Santa Ana River would not have views of the tallest proposed building due to the elevation difference as well as vegetation along the west side of the Santa Ana River that obstructs views of the project site. The project's impact on views from these viewpoints would be less than significant. The project area is adjacent to Ellis Avenue, which includes commercial and office uses, and there are no residential views of the project area. Therefore, viewpoints along Ellis Avenue near the project area are not scenic vistas and not considered visually sensitive. The project's impact on views from viewpoints along Ellis Avenue would be less than significant.

The project area is adjacent to the Santa Ana River Trail and new facilities may be visible from recreational users of the trail because the trail is located at a higher elevation than the project site. Although the facilities would be partially visible from recreational users of the Santa Ana River Trail due to existing landscaping, the proposed facilities would blend in with the other existing facilities and would not obscure views or change the visual character of the treatment plant site. Further, the proposed facilities would not be taller than existing facilities on-site and would be designed to be architecturally consistent with existing buildings at Plant No. 1. Therefore, the proposed facilities would not contrast with existing facilities at Plant No. 1, and the new headworks facilities and ancillary facilities would not obstruct public views of the neighboring Santa Ana River. Implementation of the proposed project would not have a substantial adverse effect on a scenic vista, and impacts would be less than significant.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. As mentioned above, the project area is not located along a State Scenic Highway. State Route 1, Pacific Coast Highway (PCH) is approximately 3.8 miles south of the project area along the Pacific Ocean coastline. PCH is the nearest Eligible Scenic Highway, but is not officially designated. The proposed facilities would not be visible from motorists traveling along this route. Therefore, the proposed project would not impact scenic resources, which include rock outcroppings, trees, or historic buildings within a designated State Scenic Highway corridor. No impacts would occur.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant. Construction activities associated with the construction of new facilities and demolition of existing facilities could alter the existing visual character of the areas surrounding Plant No. 1. At Plant No. 1, construction activities would occur for approximately eight years within the northeastern area of Plant No. 1. Surrounding commercial uses north of Plant No.1 and residential uses east of Plant No. 1 along the Santa Ana River Trail may have obstructed views of construction activities such as cranes but no views of construction equipment such as graders, bulldozers, trucks etc. Sensitive residential uses located west of Ward Street would not have views of construction activity due to the intervening buildings located within the Orange County Water District property and structures located on the west side of Plant No. 1. Because views of the construction activities would be partially obstructed from sensitive uses and

construction would occur intermittently over the 8-year construction time period, impacts to the visual character or quality of the area would be less than significant.

Once constructed, the proposed facilities would have an appearance similar to the existing Plant No. 1 facilities. The structures would be designed with materials that are compatible with the existing treatment facilities onsite at Plant No. 1 and would not alter or degrade the existing visual character of the site. Further, all pipelines would be constructed underground and would not be visible aboveground, resulting in no visual impacts. Because the proposed facilities are within the Plant No. 1 boundary and are consistent with the existing Plant No. 1 and surrounding uses and design, the proposed project would not alter or degrade the visual character of the area. Construction impacts would be less than significant.

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

Less than Significant. Existing light sources within the project area include existing on-site uses associated with Plant No. 1 facilities. Security lighting onsite has been designed to minimize spill-over light and glare impacts to surrounding area. However, the lighting from these sources combined with the surrounding residential, commercial, and street light sources generally diminishes the quality of the nighttime sky.

Construction of the proposed facilities would take place during the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday. No overnight construction would occur, so lighting for construction activities would not be required. Further, the presence of construction equipment would not introduce new lighting or glare to the project area. Therefore, construction impacts would be less than significant.

The proposed facilities would not have highly reflective surfaces, and would not include large areas of glass on structures/buildings; therefore, the proposed project would have less than significant impacts regarding glare.

The proposed facilities would be located within the existing Plant No. 1 boundary that currently contains lighting within the interior and exterior of structures. Plant No. 1 is located within an urban area, developed with residential, commercial, and industrial uses. Implementation of the proposed project could result in new exterior nighttime lighting for operational and security purposes within Plant No. 1. Though not anticipated; the increase in lighting within Plant No. 1 could result in spill over lighting onto neighboring recreational uses along the Santa Ana River Trail. However, the outdoor lighting would be confined to the immediate area and would not be directed into adjacent areas or create light beams into the night sky. On-site security lighting would be directed away from the adjacent Santa Ana River right-of-way. Similar to existing facilities at Plant No. 1, the new facilities constructed within Plant No. 1 would include enhanced natural lighting using transoms and skylights, emergency egress lighting for the building, and non-intrusive wallpack lighting for the building exterior and roof, in addition to standard security lighting. As a result, the proposed project would not introduce substantial sources of lighting to the project area and impacts regarding lighting would be less than significant.

4.2 Agricultural and Forest Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
2. AGRICULTURAL AND FOREST RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **Would the project:**				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion

The proposed project would be located within the boundaries of Plant No. 1, within the southeastern portion of City of Fountain Valley. Plant No. 1 is a 112-acre wastewater treatment plant located approximately 4 miles north of the Pacific Ocean. Plant No. 1 is characterized as a developed industrial site containing numerous structures that vary in height, mass and function. There is no agricultural land or forest resources within the project area.

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 area is currently developed and void of any agricultural uses. The California Department of Conservation (CDC) Important Farmland Map for Orange County identified the project area as urban and built-up land. Further, there is no Prime Farmland, Unique

Farmland, or Farmland of Statewide Importance located adjacent to the project area (CDC 2018). Therefore, no impact to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. A Williamson Act Contract requires private landowners to voluntarily restrict their land to agricultural land and compatible open-space uses. The project area is void of agricultural uses and does not include land enrolled in a Williamson Act Contract (CDC 2004). Therefore, no impact regarding conversion of existing agriculture uses or Williamson Act contracts 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 proposed project would not conflict with existing zoning of forest land or cause rezoning of forest land, timberland, or timberland zoned for Timberland Production. The project area is currently zoned as Specific Plan– Orange County Sanitation District. The proposed project does not involve any changes to current General Plan land use or zoning designations for forest land, or timberland. Additionally, there are no timberland zoned production areas within the project area or surrounding areas. Therefore, no impact to forest land or timberland would occur.

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

No Impact. The project area and surrounding areas contain no forest land. Thus, implementation of the proposed project would result in no impacts related to the loss 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?

No Impact. Refer to responses above. The project area is developed with wastewater treatment and conveyance facilities and concrete. No other changes to the existing environment would occur from implementation of the proposed project that could result in conversion of farmland to nonagricultural use or forest land to non-forest use. Thus, no impact would occur.

4.3 Air Quality

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

Discussion

The project area is located in the City of Fountain Valley within the South Coast Air Basin (SCAB), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAB is a 6,600-square-mile coastal plain bounded by the Pacific Ocean to the southwest and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SCAB includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County.

The ambient concentrations of air pollutants are determined by the amount of emissions released by sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources.

Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. The topography and climate of southern California combine to make the SCAB an area of high air pollution potential. The SCAB is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountains around the rest of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is disrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds. During the summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the

ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cap over the cool marine layer and inhibits the pollutants in the marine layer from dispersing upward. In addition, light winds during the summer further limit ventilation. Furthermore, sunlight triggers the photochemical reactions that produce ozone.

Based on past climate records from the Western Regional Climate Center (WRCC), the average annual maximum temperature in the area is 68 degrees Fahrenheit (°F) and the average annual minimum temperature is 55° F. The average precipitation in the area is about 11 inches annually, occurring primarily from December through March (WRCC 2016).

Federal and State Ambient Air Quality Standards

Ambient Air Quality Standards

Regulation of air pollution is achieved through both federal and state ambient air quality standards and emission limits for individual sources of air pollutants. As required by the federal Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has identified criteria pollutants and has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb). These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

To protect human health and the environment, USEPA has set "primary" and "secondary" maximum ambient limits for each of the criteria pollutants. Primary standards were set to protect human health, particularly sensitive receptors such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent damage to animals, crops, vegetation, and buildings.

Regional and Local

The NAAQS establish the level for an air pollutant above which detrimental effects to public health or welfare may result. The NAAQS are defined as the maximum acceptable concentrations that, depending on the pollutant, may not be equaled or exceeded more than once per year or in some cases as a percentile of observations. California has generally adopted more stringent ambient air quality standards for the criteria air pollutants (i.e., California Ambient Air Quality Standards [CAAQS]) and has adopted air quality standards for some pollutants for which there is no corresponding national standard, such as sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Both the national and State ambient air quality standards for pollutants along with their associated health effects and sources are presented in **Table 3**.

Existing Air Quality

SCAQMD maintains monitoring stations within the Basin that monitor air quality and compliance with associated ambient standards. The project area is located in the North Coastal Orange County Coastal Air Monitoring Subregion. Currently, the nearest monitoring station to the project area is the Costa Mesa – Mesa Verde Drive Station (2850 Mesa Verde Dr. East, Costa Mesa, CA). This station monitors ambient concentrations of ozone, NO_2, CO, SO_2 Lead, and

PM_{10} Sulfates. The closest station within the same climate type (Coastal) that monitors for PM_{10} and $PM_{2.5}$ is the South Long Beach station (1305 E. Pacific Coast Highway, Long Beach) located within the South Coastal LA County monitoring subregion. Historical data of ambient ozone, NO_2, CO, SO_2, PM_{10} and $PM_{2.5}$ concentrations from these monitoring stations for the most recent 3 years (2014–2016) are shown in **Table 4**.

Both CARB and USEPA use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. Unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment. The current attainment status for the SCAB is provided in **Table 5**.

Sensitive Receptors

Sensitive receptors are individuals who are considered more sensitive to air pollutants than others. The reasons for greater than average sensitivity may include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system. The closest sensitive receptors to the project area are residential land uses located approximately 500 feet east of the Santa Ana River.

TABLE 3
AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 hour	0.09 ppm	---	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases (ROGs) and NO_X react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
	8 hours	0.07 ppm	0.075 ppm		
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm		
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	0.100 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	Annual Arithmetic Mean	0.030 ppm	0.053 ppm		
	1 hour	0.25 ppm	75 ppb	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants,	
	3 hours	---	0.50 ppm		

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Sulfur Dioxide (SO_2)	24 hours	0.04 ppm	0.14 ppm	destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	Annual Arithmetic Mean	---	0.03 ppm		
Respirable Particulate Matter (PM10)	24 hours	50 µg/m^3	150 µg/m^3	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual Arithmetic Mean	20 µg/m^3	---		
Fine Particulate Matter (PM2.5)	24 hours	---	35 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NO_X, sulfur oxides, and organics.
	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3		
Lead (Pb)	30 Day Average	1.5 µg/m^3	---	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction (in severe cases).	Present source: lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	---	1.5 µg/m^3		
	Rolling 3-Month Average	---	0.15 µg/m^3		
Hydrogen Sulfide	1 hour	0.03 ppm	No National Standard	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)	Geothermal power plants, petroleum production and refining
Sulfates (SO_4)	24 hour	25 µg/m^3	No National Standard	Decrease in ventilatory functions; aggravation of asthmatic symptoms; aggravation of cardio-pulmonary disease; vegetation damage; degradation of visibility; property damage.	Industrial processes.
Visibility Reducing Particles	8 hour	Extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, and discourages tourism.	See $PM_{2.5}$.

NOTE: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter.

SOURCE: CARB, 2009, CARB, 2016.

TABLE 4
AIR QUALITY DATA SUMMARY (2014 – 2016) FOR PROJECT AREA

		Monitoring Data by Year		
Pollutant	**Standard[a]**	**2014**	**2015**	**2016**
Ozone – Costa Mesa				
Highest 1 Hour Average (ppm)		0.096	0.099	0.099
Days over State Standard	0.09 ppm	1	1	0
Highest 8 Hour Average (ppm)		0.079	0.079	0.069
Days over National Standard	0.070 ppm	6	2	0
Days over State Standard	0.070 ppm	6	2	0

Carbon Monoxide – Costa Mesa				
Highest 8 Hour Average (ppm)		1.9	2.2	1.7
Days over National Standard	9.0 ppm	0	0	0
Days over State Standard	9.0 ppm	0	0	0
Nitrogen Dioxide – Costa Mesa				
Highest 1 Hour Average (ppm)		0.061	0.052	0.060
Days over National Standard	0.100 ppm	0	0	0
Days over State Standard	0.18 ppm	0	0	0
Annual Average (ppm)		0.010	0.012	0.010
Days over National Standard	0.053 ppm	0	0	0
Days over State Standard	0.030 ppm	0	0	0
Sulfur Dioxide – Costa Mesa				
Highest 24 Hour Average (ppm)		0.0009	0.005	0.003
Days over State Standard	0.04 ppm	0	0	0
Particulate Matter (PM_{10}) – Anaheim				
Highest 24 Hour Average ($\mu g/m^3$)[b]		59	65	56
Days over National Standard (measured)[c]	150 $\mu g/m^3$	0	0	0
Days over State Standard (measured)[c]	50 $\mu g/m^3$	3	2	2
Annual Average ($\mu g/m^3$)[b]	20 $\mu g/m^3$	26.6	26.5	27.8
Particulate Matter ($PM_{2.5}$) – Anaheim				
Highest 24 Hour Average ($\mu g/m^3$)[b]		52.5	48.3	28.9
Days over National Standard (measured)[c]	35 $\mu g/m^3$	2	4	1
Annual Average ($\mu g/m^3$)[b]	12 $\mu g/m^3$	10.7	10.3	9.6
Lead - South Long Beach				
3 – month rolling average ($\mu g/m^3$)		0.01	0.01	0.01
Days over National Standard	0.15 ($\mu g/m^3$)	0	0	0
Monthly Average ($\mu g/m^3$)		0.012	0.10	0.008
Days over State Standard	1.5 ($\mu g/m^3$)	0	0	0
PM_{10} Sulfate – South Long Beach				
Highest 24 Hour Average ($\mu g/m^3$)		4.5	6.3	6.3
Days over State Standard	25 ($\mu g/m^3$)	0	0	0

NOTES:
ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.
* = Insufficient data available to determine the value.
There is no SCAQMD monitoring data for hydrogen sulfide or visibility reducing particles.

a Generally, state standards and national standards are not to be exceeded more than once per year.
b Concentrations and averages represent federal statistics. State and federal statistics may differ because of different sampling methods.
c Measurements are usually collected every 6 days. Days over the standard represent the measured number of days that the standard has been exceeded.

SOURCE: SCAQMD 2014, 2015, 2016.

TABLE 5
SOUTH COAST AIR BASIN ATTAINMENT STATUS

	Attainment Status	
Pollutant	**California Standards**	**Federal Standards**
Ozone	Extreme Nonattainment	Extreme Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
Lead	Attainment	Attainment
Hydrogen Sulfide	Unclassified	NA
Sulfates	Attainment	NA
Visibility Reducing Particles	Unclassified	NA

NA = Not Applicable

SOURCE: CARB, 2017; USEPA, 2017

Regulatory Setting

Federal

The federal CAA of 1963 was the first federal legislation regarding air pollution control and has been amended numerous times in subsequent years, with the most recent amendments occurring in 1990. At the federal level, the USEPA is responsible for implementation of certain portions of the Clean Air Act including mobile source requirements. Other portions of the CAA, such as stationary source requirements, are implemented by state and local agencies.

The CAA establishes federal air quality standards, known as NAAQS and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement a State Implementation Plan (SIP) for areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met. The 1990 amendments to the CAA identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA which are most applicable to the proposed project include Title I (Nonattainment Provisions) and Title II (Mobile Source Provisions). Title I requirements are implemented for the purpose of attaining NAAQS for the following criteria pollutants: (1) O_3; (2) NO_2; (3) CO; (4) SO_2; (5) PM10; and (6) lead. The NAAQS were amended in July 1997 to include an 8-hour standard for O_3 and to adopt a NAAQS for PM2.5. Table 3 shows the NAAQS currently in effect for each criteria pollutant. The proposed project is located within the SCAB, which is an area designated as non-attainment for O_3 and PM2.5 because it does not currently meet NAAQS for those pollutants. Table 5, provides a summary of the attainment status of the Orange County portion of the SCAB with respect to the federal and state standards.

Title II of the federal Clean Air Act pertains to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms the USEPA uses to regulate mobile air emission sources. The provisions of Title II have resulted in tailpipe emission standards for vehicles, which have strengthened in recent years to improve air quality. For example, the standards for NOx emissions have been lowered substantially, and the specification requirements for cleaner burning gasoline are more stringent.

State

California Air Resources Board

The California CAA requires all areas of the State to achieve and maintain the CAAQS by the earliest practical date. The CAAQS regulate the same criteria pollutants as the NAAQS but also regulate State-identified criteria pollutants, including sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. In general, the CAAQS are more stringent than the NAAQS. CARB has primary responsibility for ensuring implementation of the California CAA, responding to the federal CAA planning requirements applicable to the state, and regulating emissions from motor vehicles and consumer products within the state. Table 3 shows the CAAQS currently in effect for each of the federally recognized criteria pollutants as well as the additional pollutants recognized by the state.

Health and Safety Code Section 39607(e) requires CARB to establish and periodically review area designation criteria. Table 5, provides a summary of the attainment status of the Orange County portion of the SCAB with respect to the CAAQS.

California Green Building Standard Code

In January 2010, the State of California adopted the 2010 California Green Building Standards Code (CALGreen), which became effective in January 2011. Building off of the initial 2008 California Green Building Code, the 2010 CALGreen Code represents a more stringent building code that requires, at a minimum, that new buildings and renovations in California meet certain sustainability and ecological standards. The 2010 CALGreen Code has mandatory Green Building provisions for all new residential buildings that are three stories or fewer (including hotels and motels) and all new non-residential buildings of any size that are not additions to existing buildings.

Local

South Coast Air Quality Management District

Criteria Air Pollutants

The SCAQMD attains and maintains air quality conditions in the SCAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of SCAQMD includes preparation of plans for attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. SCAQMD also inspects stationary sources of air pollution and responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements

programs and regulations required by the CAA, the 1990 Clean Air Act Amendments (CAAA), and the California Clean Air Act (CCAA).

Air Quality Management Plan

The SCAQMD has adopted a series of Air Quality Management Plans (AQMP) to meet the CAAQS and NAAQS. The SCAQMD and CARB have adopted the 2016 AQMP, which incorporates scientific and technological information and planning assumptions regarding air quality, including the Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), and emission inventory methodologies for various source categories. The 2016 AQMP was adopted by the AQMD Governing Board on March 3, 2017.

The purpose of the 2016 AQMP is to bring the Air Basin into attainment with NAAQS for 24-hour PM2.5. SCAQMD has since determined that this deadline was impractical due to drought conditions in the region. In 2016, USEPA approved reclassification of the Air Basin from "moderate" to "serious" non-attainment for the 24-hour PM2.5 standard, which has a new attainment deadline of December 31, 2019. The 2016 AQMP demonstrates that the 24-hour standard will be met by 2019 with no additional reductions beyond already adopted and implemented measures. The 2016 AQMP also intensifies the scope and pace of continued air quality improvement efforts toward meeting the 2024 and 2032 8-hour ozone standard deadline with new measures designed to reduce reliance on the development of new control technologies or techniques to achieve attainment standards.. SCAQMD also expects exposure reductions to be achieved through implementation of new and advanced control technologies as well as improvement of existing technologies.

The control measures in the 2016 AQMP consist of 8-hour ozone control measures and PM2.5 control measures designed to achieve the ozone and PM2.5 NAAQS by statutory deadlines. The AQMP includes ten PM2.5 control measures, 15 stationary source 8-hour ozone measures and 15 early action measures for mobile sources. In general, the SCAQMD's control strategy for stationary and mobile sources is based on the following approaches: (1) available cleaner technologies; (2) best management practices; (3) incentive programs; (4) development and implementation of near-zero technologies and vehicles and control methods; and (5) emission reductions from mobile sources.

SCAQMD Rules and Regulations

All projects are subject to SCAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction anticipated under the proposed project would include the following:

Rule 401 – Visible Emissions. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour that is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

Rule 402 – Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any such persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

Rule 403 – Fugitive Dust. This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust.

Rule 1113 – Architectural Coatings. No person shall apply or solicit the application of any architectural coating within the SCAQMD with VOC content in excess of the values specified in a table incorporated in the Rule.

Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities. This rule requires owners and operators of any demolition or renovation activity and the associated disturbance of asbestos-containing materials, any asbestos storage facility, or any active waste disposal site to implement work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials.

Rule 1470 – Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines: This rule applies to stationary compression ignition engine greater than 50 brake horsepower and sets limits on emissions and operating hours. In general, new stationary emergency standby diesel-fueled engines greater than 50 brake horsepower are not permitted to operate more than 50 hours per year for maintenance and testing.

Toxic Air Contaminants

At the local level, air pollution control or management districts may adopt and enforce CARB control measures. Under SCAQMD Regulation XIV (Toxics and Other Non-Criteria Pollutants), and in particular Rule 1401 (New Source Review), all sources that possess the potential to emit TACs are required to obtain permits from SCAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. SCAQMD limits emissions and public exposure to TACs through a number of programs. SCAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

The Air Toxics Control Plan (March 2000, revised March 26, 2004) is a planning document designed to examine the overall direction of SCAQMD's air toxics control program. It includes development and implementation of strategic initiatives to monitor and control air toxics emissions. Control strategies that are deemed viable and are within SCAQMD's jurisdiction will each be brought to the SCAQMD Board for further consideration through the normal public

review process. Strategies that are to be implemented by other agencies will be developed in a cooperative effort, and the progress will be reported back to the Board periodically.

In May 2015 the SCAQMD completed the Multiple Air Toxics Exposure Study IV (MATES IV) (SCAQMD 2015a). MATES IV is a monitoring and evaluation study conducted in the SCAB and is a follow up to previous air toxics studies. The study is a follow up to the 2008 MATES III study and consists of several elements including a monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize risk across the SCAB (SCAQMD 2008). The study focuses on the carcinogenic risk from exposure to air toxics. However, it does not estimate mortality or other health effects from particulate exposures. MATES IV shows that the region around the project area has an estimated carcinogenic risk from between 802 per million and 839 in a million near Ellis Avenue at the north (SCAQMD 2015a). These model estimates were based on monitoring data collected at 10 fixed sites within the SCAB.

Significance Thresholds

Neither OCSD nor the City of Fountain Valley has developed specific air quality thresholds for air quality impacts. However, as stated in Appendix G of the *CEQA Guidelines*, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. As such, the significance thresholds and analysis methodologies in SCAQMD's *CEQA Air Quality Handbook* are used in evaluating project impacts. The SCAQMD has established daily mass thresholds for regional emissions, which are shown in **Table 6**.

TABLE 6
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

	Mass Daily Thresholds (lbs/day)	
Pollutant	**Construction**	**Operations**
Oxides of Nitrogen (NO_X)	100	55
Reactive Organic Gases (ROG)	75	55
Respirable Particulate Matter (PM_{10})	150	150
Fine Particulate Matter ($PM_{2.5}$)	55	55
Oxides of Sulfur (SO_X)	150	150
Carbon Monoxide (CO)	550	550
Lead[a]	3	3
TACs (including carcinogens and non-carcinogens	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	

[a] As the proposed project would not have any major lead emissions sources, emissions of lead would not be analyzed further in the EIR.

SOURCE: SCAQMD, 2015b2015b.

In addition, the SCAQMD has developed a methodology to assess the potential for localized emissions to cause an exceedance of applicable ambient air quality standards. SCAQMD has developed look-up tables to use as screening criteria to determine if impacts have the potential to be significant. If impacts do not exceed the screening criteria, then impacts would be less than significant and no further analysis is required. Impacts would be considered significant if the following were to occur:

- Maximum daily localized emissions of NOX and/or CO during construction or operation are greater than the applicable localized significance thresholds, resulting in predicted ambient concentrations in the vicinity of the project site greater than the most stringent ambient air quality standards for NO2 and/or CO (SCAQMD 2015b). LST screening thresholds for NOx and CO are 102 lbs/day and 1,253 lbs/day respectively.
- Maximum daily localized emissions of PM10 and/or PM2.5 during construction and operation are greater than the applicable localized significance thresholds, resulting in predicted ambient concentrations in the vicinity of the project site to exceed 10.4 $\mu g/m^3$ and 2.5 $\mu g/m^3$ over 24 hours respectively for construction and operational activities. (SCAQMD Rule 1303 allowable change in concentration). LST screening thresholds for PM10 and PM2.5 are 13 lbs/day and 7 lbs/day respectively.

With respect to the formation of CO hotspots, the project would be considered significant if the following would occur:

- The project would cause or contribute to an exceedance of the CAAQS one-hour or eight-hour CO standards of 20 or 9.0 parts per million (ppm), respectively. The SCAQMD uses 100,000 vehicles per day through an intersection as a screening level. Therefore, any intersection that does not exceed 100,000 vehicles per day would not have the potential to exceed the CAAQS.

Based on criteria set forth by the SCAQMD, the project would expose sensitive receptors to substantial concentrations of toxic air contaminants if any of the following were to occur (SCAQMD 2015b):

- The project would emit carcinogenic materials or TACs that exceed the maximum incremental cancer risk of ten in one million or a cancer burden greater than 0.5 excess cancer cases (in areas greater than or equal to 1 in 1 million) or
- An acute or chronic hazard index of 1.0.

Environmental Evaluation

Would the project:

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

Less than Significant Impact. The proposed project is located within the SCAB, which is under the jurisdiction of the SCAQMD. As such, SCAQMD's 2016 AQMP is the applicable air quality plan for the proposed project. Projects that are consistent with the regional population, housing, and employment forecasts identified by SCAG are considered to be consistent with the AQMP growth projections, since the forecast assumptions by SCAG forms the basis of the land use and

transportation control portions of the AQMP. Additionally, because SCAG's regional growth forecasts are based upon, among other things, land uses designated in general plans, a project that is consistent with the land use designated in a general plan would also be consistent with the SCAG's regional forecast projections, and thus also with the AQMP growth projections.

The proposed project includes rehabilitation, demolition, and new construction of headworks structures on Plant No. 1. Once construction is completed the operations will return to the existing conditions and no jobs or additional processes are added. Additionally, as this is not a residential development, it would not result in the creation of new housing or potential residential growth. Because the land use will not change, and has been in operation since before the creation of the 2016 AQMP, the proposed project would not change the regional growth forecasts as identified in the local General Plan or those of the 2016 AQMP. Therefore, the proposed project would not conflict with, or obstruct, implementation of the AQMP and this impact would be less than significant.

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

Less than Significant with Mitigation Incorporated. The proposed project would not violate any air quality standard or contribute substantially to an existing air quality violation during operational activities and would not violate any air quality standard or contribute substantially to an existing air quality violation during construction activities after the implementation of mitigation.

Construction

Construction emissions are considered short term and temporary, but have the potential to represent a significant impact with respect to air quality. Particulate matter (i.e., PM_{10} and $PM_{2.5}$) are among the pollutants of greatest localized concern with respect to construction activities. Particulate emissions from construction activities can lead to adverse health effects and nuisance concerns, such as reduced visibility and soiling of exposed surfaces. Particulate emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust. Construction emissions of PM can vary greatly depending on the level of activity, the specific operations taking place, the number and types of equipment operated, local soil conditions, weather conditions, and the amount of earth disturbance.

Emissions of ozone precursors ROG and NO_X are primarily generated from mobile sources and vary as a function of vehicle trips per day associated with delivery of construction materials, the importing and exporting of soil, vendor trips, and worker commute trips, and the types and number of heavy-duty, off-road equipment used and the intensity and frequency of their operation. A large portion of construction-related ROG emissions also result from the application of asphalt and architectural coatings and vary depending on the amount of coatings and paving applied each day.

The maximum daily construction emissions for the proposed project during each year of construction were estimated using CalEEMod, which is designed to model construction emissions for land use development projects based on building size, land use and type, and disturbed acreage, and allows for the input of project-specific information. Proposed project-generated emissions of criteria air pollutants (e.g., PM_{10}) and precursors (i.e., ROG and NO_X) were modeled based on general information provided in the proposed project description and by OCSD, and default SCAQMD-recommended settings and parameters attributable to the proposed land use types and site location.

It is mandatory for all construction projects in the Basin to comply with SCAQMD Rule 403 for controlling fugitive dust. Incorporating Rule 403 into the proposed project would reduce regional respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) emissions from construction activities. Specific Rule 403 control requirements include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the project area, covering all trucks hauling soil with a fabric cover and maintaining a freeboard height of 12 inches, and maintaining effective cover over exposed areas. Compliance with Rule 403 was accounted for in the construction emissions modeling.[1] Site watering and application of soil binders would reduce the particulate matter from becoming airborne, while washing of transport vehicle tires and undercarriages would reduce re-entrainment of construction dust onto the local roadway network.

Construction activities would begin in 2019 with construction occurring periodically over an eight-year period. Rehabilitation activities would occur over the entire eight-year construction period with activities restricted to dry-weather season only. Demolition is anticipated to occur independent of site preparation and building construction as demolition must be completed and the site leveled prior to the beginning of construction activities. In order to provide a conservative estimate of emissions it was assumed the following scenarios which includes the overlap of phases. The Demolition Phase includes demolition, soil import/export, and rehabilitation activities. The New Structures Phase includes site preparation (soil import/export and site leveling), construction of new structures (which includes concrete paving and architectural coating), and rehabilitation activities.

Table 7 summarizes the modeled worst-case daily emissions of criteria air pollutants and ozone precursors associated with the proposed project's construction activities (refer to **Appendix A** for a detailed summary of the CalEEMod modeling assumptions, inputs, and outputs). As shown in Table 7, assuming the overlap in construction activities, NOx would exceed the SCAQMD's daily significance thresholds but none of the other criteria pollutants or pollutant precursors would exceed the threshold. Thus, air quality impacts during construction of the proposed project would be potentially significant without mitigation.

[1] Note that the way CalEEMod is designed, it is easiest to incorporate Rule 403 by incorporating it through "mitigation" therefore, the "mitigated" fugitive dust emissions in CalEEMod represent the unmitigated conditions with the application of Rule 403 compliance.

TABLE 7
PROPOSED PROJECT: REGIONAL UNMITIGATED CONSTRUCTION EMISSIONS

	Estimated Maximum Daily Emissions (lbs/day)					
Construction Activity	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Demolition	9	95	57	<1	6	4
New Structures	14	102	63	<1	6	5
Maximum Regional Daily Emissions	**14**	**102**	**63**	**<1**	**6**	**5**
Regional Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	**No**	**Yes**	**No**	**No**	**No**	**No**

NOTE: 1. Demolition Phase includes soil import/export, and rehabilitation activities. New Structures Phase includes site preparation (soil import/export and site leveling), construction of new structures (which includes concrete paving and architectural coating), and rehabilitation activities.

2. These emissions calculations include the following projects that are no longer a part of the proposed project: Talbert Trunk Rehabilitation; Blower Building No. 1 Rehabilitation; Power Building No. 2 Rehabilitation; and Power Building 3A Demolition.

Source: Refer to Appendix A

Operation

Operation of proposed facilities would only require periodic maintenance, not daily staffing or deliveries. The proposed facilities are anticipated to have a similar number of employees as the existing facilities. Therefore, the proposed project would not require a significant increase in OCSD full-time employees for operation and maintenance of rehabilitated and newly constructed facilities. No changes in the number of truck trips associated with chemical deliveries would occur with the proposed project. Similar to the existing Plant 1 facilities, the proposed new facilities would require varying amounts of energy during operation. Because the proposed facilities are upgraded and more energy efficient than the existing facilities, the proposed project would not increase the need for energy.

Because there is no net change in operational activities, there would be no new operational emissions, and potentially a reduction from existing conditions due to more efficient buildings and processes. Therefore, no operational emissions were modeled. As there are no new operational activities, there are no new impacts with respect to operations and therefore operational emissions are not discussed further in this analysis.

Mitigation Measures

The following mitigation measure shall be incorporated into the project in order to reduce emissions during construction activities.

> **AQ-1**: Equipment engines shall be maintained in proper tune and construction equipment shall be operated so as to minimize exhaust emissions. Mobile off-road construction equipment (wheeled or tracked) used during construction of the proposed project shall meet the USEPA Tier 3 standards for the first two years. Beginning in the third year of construction, Tier 4 final standards, either as original equipment or equipment retrofitted to meet the Tier 4 final standards. A copy of each unit's certified tier specification or model year specification shall be available upon request at the time of mobilization of each applicable unit of equipment. This mitigation applies to off-road equipment and does not apply to on-road vehicles.

Significance After Mitigation: Less than Significant

Table 8 summarizes the mitigated worst-case daily emissions of criteria air pollutants and ozone precursors associated with the proposed project's construction activities (refer to Appendix A for a detailed summary of the CalEEMod modeling assumptions, inputs, and outputs). As shown in Table 8, with the implementation of mitigation measure Mitigation Measure AQ-1, emissions of NOx are reduced to below the regulatory thresholds and all other pollutants are further reduced. Thus, with implementation of mitigation, air quality impacts during construction of the proposed project would be less than significant.

TABLE 8
PROPOSED PROJECT: REGIONAL MITIGATED CONSTRUCTION EMISSIONS

	Estimated Maximum Daily Emissions (lbs/day)					
Construction Activity	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Demolition	3	47	60	<1	2	1
New Structures	7	48	68	<1	2	1
Maximum Regional Daily Emissions	**7**	**48**	**68**	**<1**	**2**	**1**
Regional Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	**No**	**No**	**No**	**No**	**No**	**No**

NOTE: Demolition Phase includes Demolition including soil import/export, and rehabilitation activities. New Structures Phase includes site preparation (soil import/export and site leveling), construction of new structures (which includes concrete paving and architectural coating), and rehabilitation activities.
Source: Refer to Appendix A

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in 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 with Mitigation Incorporated. A cumulative impact arises when two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant impacts, meaning that the proposed project's incremental effects must be viewed in connection with the effects of past, current, and probable future projects.

The project area is located within the SCAB, which is considered the cumulative study area for air quality. Because the SCAB is currently classified as a state nonattainment area for ozone, PM_{10}, and $PM_{2.5}$, cumulative development consisting of the proposed project along with other past, present, and reasonably foreseeable future projects in the SCAB as a whole could violate an air quality standard or contribute to an existing or projected air quality violation. However, based on SCAQMD's cumulative air quality impact methodology, SCAQMD recommends that if an individual project results in air emissions of criteria pollutants (ROG, CO, NOx, SOx, PM_{10}, and $PM_{2.5}$) that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the proposed project region is in non-attainment under an applicable federal or state

ambient air quality standard. As shown in Table 7 above, the project's construction emissions of NOx would exceed the SCAQMD's daily threshold and would contribute to a considerable net increase in area emissions. Therefore, the project would result in a significant cumulative impact during construction activities.

Mitigation Measures

The implementation of Mitigation Measure AQ-1 is required.

Significance After Mitigation: Less than Significant

As shown in Table 8 above, with the incorporation of Mitigation Measure AQ-1, the project's construction emissions of NOx would not exceed the SCAQMD's daily threshold and would not contribute to a considerable net increase in area emissions. Therefore, the project would result in a less than significant cumulative impact during construction activities.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact with Mitigation Incorporated. Sensitive receptors at nearby residences or on the recreational bike path will not be exposed to substantial levels of pollutant concentrations with implementation of Mitigation Measure AQ-1.

CO Hotspots

CO hotspots are primarily a concern during the operational period of a project where the project increases local daily traffic to a level where CO emissions from project related traffic combined with background emissions would result in CO emissions at any given intersection that would cause an exceedance of the CAAQS one-hour or eight-hour CO standards of 20 or 9.0 parts per million (ppm), respectively. Based on SCAQMD's CO modeling for the 2003 AQMP the intersection of Wilshire Boulevard and Veteran Avenue is the most congested intersection in Los Angeles County, with an average daily traffic volume of about 100,000 vehicles per day. The evidence provided in Table 4-10 of Appendix V of the 2003 AQMP shows that the peak modeled CO concentration due to vehicle emissions when added to the existing background CO concentrations, the screening values would be 8.7 ppm (one-hour average) and 5.6 ppm (eight-hour average). Based on the data, more than 100,000 vehicles per day would need to pass through an intersection in order for the thresholds to be exceeded (SCAQMD 2003). The proposed project will not generate any new operational trips. Therefore, the project would not result in the formation of a CO hotspot and impacts would be less than significant.

LST

The SCAQMD has established localized significance thresholds (LSTs) for NOx, CO, PM_{10}, and $PM_{2.5}$ to evaluate whether a project's constructions emissions will expose sensitive receptors to substantial pollutant concentrations. These LSTs are based on the size of the project area, the ambient air quality in each source receptor area (SRA) in which the project is located, and the distance to the closest sensitive receptor.

The daily on-site construction emissions generated by the proposed project were evaluated against SCAQMD's localized significance thresholds (LSTs) for a 5-acre site to determine whether the emissions would cause or contribute to adverse localized air quality impacts. The nearest sensitive receptors to the project area are the residential buildings located approximately 100 feet to the west across Ward Street. Therefore, the analysis compares the on-site construction emissions to the look-up table thresholds for a 5-acre site located in source receptor area (SRA) 17 for Central Orange County and within 25 meters of a sensitive receptor.

As shown in **Table 9**, the daily unmitigated emissions generated on-site by the proposed project's worst-case construction scenario would not exceed the applicable SCAQMD LSTs during construction. Therefore, localized air quality emissions associated with the project would have a less than significant impact.

Although the SCAQMD recommends performing air dispersion modeling for projects larger than 5 acres, this is not necessary here since the estimated maximum daily emissions are below thresholds show in Table 9. Accordingly, the proposed project's construction emissions impacts will be less than significant and air dispersion modeling, which does not change the total estimates but merely refines their values, is not necessary.

TABLE 9
PROPOSED PROJECT UNMITIGATED LOCALIZED DAILY CONSTRUCTION EMISSIONS

	Estimated Maximum Daily On-Site Emissions (lbs/day)[a,b]			
Construction Phase	**NO_X**	**CO**	**PM10[c]**	**PM2.5[c]**
Demolition[d]	87	53	5	4
New Construction[d]	96	60	5	5
Maximum Localized Emissions	**96**	**60**	**5**	**5**
SCAQMD Threshold	**102**	**1,253**	**13**	**7**
Significant Impact?	**No**	**No**	**No**	**No**

Source: Refer to Appendix A
NOTE: Mechanical/Electrical Equipment and Systems is assumed to share equipment with other phases; emissions would be accounted for within the above listed phases.
[a] According to SCAQMD's LST methodology, LSTs are only applicable to the on-site construction emissions that are generated by a project and do not apply to emissions generated off-site such as mobile emissions on roadways from worker, vendor, and haul truck trips.
[b] LSTs for a 5-acre site in SRA 17 at a receptor distance of 25 meters.
[c] Emissions account for implementation of dust control measures as required by SCAQMD Rule 403—Fugitive Dust.
[d] Demolition Phase includes Demolition including soil import/export, and rehabilitation activities. New Structures Phase includes site preparation (soil import/export and site leveling), construction of new structures (which includes concrete paving and architectural coating), and rehabilitation activities.

Construction TACs

Construction of the proposed project would result in short-term emissions of diesel PM, a known toxic air contaminant (TAC). Diesel PM poses a carcinogenic health risk that is measured using an exposure period of 70 years. The exhaust of off-road heavy-duty diesel equipment would emit diesel PM during excavation and backfilling; installation of utilities, materials transport and

handling and other miscellaneous activities. SCAQMD has not adopted a methodology for analyzing such impacts however recommends that projects for which they are the Lead Agency follow the 2015 Office of Environmental Health Hazard Assessment (OEHHA) methodology to determine health risk for construction activities.

According to OEHHA, carcinogenic health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period or duration of activities associated with the proposed project. OEHHA recommends a health risk assessment be conducted for any project that disturbs more than one acre and lasts more than two months. The construction period for the proposed project would be almost 8 years and would disturb more than one acre. A health risk assessment was performed to determine the potential cancer and non-cancer health risks associated with the construction of the proposed project. The following is a summary of the analysis. The full analysis including methodology, assumptions and calculations are included in Appendix AQ of this report.

The methodologies and assumptions used in this HRA are consistent with the guidance recommended by the OEHHA Air Toxic Hot Spots Program Risk Assessment Guidelines. The OEHHA methodology used in this assessment uses a dose-response assessment to characterize risk from cancer due to inhaled TACs and the assessment of acute and chronic non-cancer hazards from DPM.

For carcinogenic exposures, the cancer risk from DPM emissions from construction of the Project is estimated to result in an unmitigated maximum carcinogenic risk of approximately 39 in one million. The maximum risk from the project would occur at approximately 500 feet (152 meters) east from the Project site. The lifetime exposure under OEHHA guidelines takes into account early life (infant and children) exposure. The calculated cancer risk assumes sensitive receptors (residential and school uses) would not have any mitigation, such as mechanical filtration and exposure would occur with windows open. Since the maximum unmitigated cancer risk exceeds the significance of 10 in one million, the project represents a potentially significant impact.

Implementation of Mitigation Measure AQ-1 would reduce cancer risk from construction activities by implementing Tier 4 equipment standards and therefore would reduce the emissions of diesel exhaust. With the implementation of Mitigation Measure AQ-1, cancer risk from construction activities are reduced to approximately 6 in one million for the maximum receptor location east of the project site and 0.5 for the maximum receptor location west of the project site. This is below the 10 in one million threshold of significance.

Potential non-cancer effects of chronic (i.e., long term) DPM exposures were evaluated using the Hazard Index approach as described in the OEHHA Guidance. A hazard index equal to or greater than 1.0 represents a significant chronic health hazard. Nearby off-site sensitive receptors would be exposed to a maximum chronic impacts that would equal 0.05 before mitigation at the maximum offsite receptor (located to the east of the site) and would not exceed the threshold of 1.0. With implementation of Mitigation Measure AQ-1 the chronic impact would be further reduced to 0.008.

The process of assessing health risks and impacts includes a degree of uncertainty, which is dependent on the availability of data and the extent to which assumptions are relied upon in cases where the data are incomplete or unknown. All HRAs rely upon scientific studies to reduce the level of uncertainty; however, it is not possible to completely eliminate uncertainty from the analysis. Where assumptions are used to substitute for incomplete or unknown data, it is standard practice in performing HRAs to err on the side of health protection to avoid underestimating or underreporting the risk to the public by assessing risk on the most sensitive populations, such as children and the elderly.

As discussed above, cancer risk for nearby sensitive receptors would be reduced to below significance thresholds with the implementation of Mitigation Measure AQ-1. These short-term emissions would not substantially contribute to a significant construction health risk. No residual emissions and corresponding individual cancer risk are anticipated after Project construction. Therefore, the proposed Project would result in a less than significant impact related to construction TAC emissions.

Mitigation Measures

Implementation of Mitigation Measure AQ-1 is required.

Significance After Mitigation: Less than Significant

With the implementation of Mitigation Measure AQ-1, cancer risk from construction activities are reduced to approximately 6 in one million for the maximum receptor location east of the project site and 0.5 for the maximum receptor location west of the project site. This is below the 10 in one million threshold of significance.

The project will not expose sensitive receptors to substantial pollutant concentrations. The project's maximum localized emissions are below the thresholds of significance established by the SCAQMD, and implementation of Mitigation Measure AQ-1 will further reduce these emissions.

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

Less than Significant with Mitigation Incorporated. During construction of the proposed 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. Additionally, the removal of the headworks and odor control equipment may result in intermittent odor releases resulting from the cessation of use and dismantling of the equipment. Such odors could be a temporary source of nuisance to adjacent uses, but would not affect a substantial number of people. Additionally, the incorporation of Mitigation Measure AQ-1 would further reduce the potential for odors from construction activities. 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.

The project would not result in increases of operations or the creation of a new odor source. Additionally, with the construction of the new odor control facilities it may even reduce existing objectionable odors related to the operation of the facility.

Therefore, impacts associated with objectionable odors would be less than significant.

Mitigation Measures

Implementation of Mitigation Measure AQ-1 is required.

4.4 Biological Resources

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*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 Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)?	☐	☒	☐	☐
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 CDFW or USFWS?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion

Plant No. 1, located within the U.S. Geological Survey (USGS) Newport Beach Quadrangle at Township 5 South, Range 10 West, Section 32, is currently developed with wastewater treatment structures and facilities, offices, paved roadway areas and paved parking areas. Thus, Plant No. 1 is urbanized and does not contain any natural habitat that could support native plants or wildlife use, although some common, urban-adapted terrestrial species may wander onto the facility occasionally. Also, it is possible that urban-adapted bird species could nest in structures or landscape vegetation present on Plant No. 1.

The area surrounding Plant No. 1 includes commercial and office uses north of Ellis Avenue, residential uses west of Ward Street, and industrial power grids and a landscape center to the south. The Santa Ana River is located east of Plant No. 1. An approximate 20-foot-high berm and the Santa Ana River Trail is located between the Plant No. 1 eastern boundary and the Santa Ana River. The portion of the Santa Ana River adjacent to Plant No. 1 is concrete lined and provides little or no habitat value for native species. During summer low flow season, some soil may accumulate in small scattered patches on the concrete; however, channel maintenance and winter floods regularly scour this accumulation away. Short term soil accumulation may support

common weed species temporarily, but does not develop habitat of any substantial value to native wildlife.

The following analysis is based on a review of publicly available data from the CDFW's California Natural Diversity Database (CNDDB) (CDFW 2017) and the USFWS's Information for Planning and Consultation (IPaC) Tool (USFWS 2018) (see **Appendix B)**. In addition, the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2017) was reviewed to support the following the analysis.

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 CDFW or USFWS?

Less than Significant with Mitigation Incorporated. A review of publically available data identified 35 special-status plants and 56 special-status wildlife species known to occur in the vicinity of the project area (i.e., within seven USGS Quads). Given the urban nature of Plant No. 1 and surrounding area, special-status plant and wildlife species are not expected to occur within the project area. However, common, urban-adapted avian species could nest in landscape vegetation located adjacent to the project area and implementation of the proposed project could directly or indirectly impact nesting birds, if construction activities occur during the breeding season (generally defined as February 15 to August 31 for songbirds and January 15 to August 31 for raptors). Direct impacts would include removal of nests during vegetation removal; indirect impact would include elevated noise levels that could disrupt breeding behaviors or cause nest abandonment. Disturbing or destroying active nests is a violation of the Migratory Bird Treaty Act. In addition, nests and eggs are protected under California Fish and Game Code Section 3503 and 3503.5. As such, impacts to nesting birds is considered a potentially significant impact which would require mitigation. Implementation of **Mitigation Measure BIO-1** would reduce impacts to nesting birds to less than significant by requiring identification and avoidance of active nests (and an appropriately-sized buffer) if it is infeasible to schedule construction outside the avian nesting season.

Operation of the proposed project is not anticipated to result in impacts to special-status plant and wildlife species or nesting birds. The potential for special-status plant or wildlife species to occur within the project area during operation would remain the same as current conditions as the proposed project would maintain the urban nature of the project area. Also, nesting birds (if present) are not expected to be impacted by operations as the newly constructed and rehabilitated structures would not generate noise in excess of existing baseline conditions.

Mitigation Measures

BIO-1: If removal of onsite trees and vegetation associated with the proposed project occurs during the non-nesting season (September 1 to February 14 for songbirds; September 1 to January 14 for raptors), no nesting survey or biological monitor are required.

If the removal of onsite trees and vegetation associated with the proposed project occurs during the nesting season (February 15 to August 31 for songbirds; January 15 to August 31 for raptors), a qualified biologist shall conduct a survey prior to vegetation removal activities to determine if there are active nests within the onsite trees and vegetation proposed for removal. If an active nest is not found, no biological monitor is required. If active nests are detected, a minimum buffer (e.g., 300 feet for songbirds or 500 feet for raptors) around the nest shall be delineated and flagged, and no construction activity shall occur within the buffer area until a qualified biologist determines the nesting species have fledged and is no longer active or the nest has failed. The buffer may be modified (i.e., increased or decreased) and/or other recommendations proposed (e.g., a temporary soundwall) as determined appropriate by the qualified biologist to minimize impacts. The qualified biologist shall monitor the removal of onsite trees and vegetation. Nest buffer distance will be based on species, specific location of the nest, the intensity of construction activities, existing disturbances unrelated to the proposed program present in the program area, and other factors.

If construction activities associated with the proposed project are scheduled outside the nesting season, no nesting survey or biological monitor are required.

If grading/excavation or pile driving activities associated with the proposed project are scheduled during the nesting season, a qualified biologist shall conduct a survey, prior to grading/excavation or pile driving activities, of suitable nesting habitat within 500 feet of construction activities for the presence of nesting birds. If no active nests are detected, no biological monitor is required. If an active nest is detected, a minimum buffer (e.g., 300 feet for songbirds or 500 feet for raptors) around the nest shall be delineated and the active nest shall be flagged, and no construction activity shall occur within the buffer area until a qualified biologist determines the nesting species have fledged and is no longer active or the nest has failed. The qualified biologist shall monitor the activities of the active nests within the buffer area. The buffer may be modified (i.e., increased or decreased) and/or other recommendations proposed (e.g., a temporary soundwall) as determined appropriate by the qualified biologist to minimize impacts. Nest buffer distance will be based on species, specific location of the nest, the intensity of construction activities, existing disturbances unrelated to the proposed program present in the program area, and other factors.

If there is a lapse of construction activities associated with the proposed program during the nesting season for seven days or more, an additional nesting bird survey shall be conducted to determine if a nest is present prior to construction activities resuming. The procedure identified above for no active nest and an active nest shall be followed.

Significance After Mitigation: Less than Significant

With the implementation of Mitigation Measure BIO-1, potential impacts to nesting birds would be reduced to less than significant.

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 CDFW or USFWS?

No Impact. The majority of Plant No. 1 is improved with paved surfaces; the project area consists solely of developed land. Adjacent land cover types in the vicinity of the project area include ornamental, disturbed habitat, and open water associated with the Santa Ana River. No sensitive vegetation communities were identified in the project area. Therefore, implementation of the proposed project would result in no impacts to sensitive natural communities.

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?

No Impact. Plant No. 1 is developed with water and wastewater treatment facilities. The locations where the proposed project facilities and improvements would occur are paved and in a disturbed condition. Because of the developed conditions within the project area, a wetland delineation was not conducted for the proposed project. The Santa Ana River occurs to the east of the project area, but will not be impacted by the proposed project. Therefore, no wetland impacts would occur.

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?

No Impact. Plant No. 1 is a developed property that have been improved with buildings, wastewater treatment facilities, and paved circulation and parking areas. As a result, the project area lacks suitable habitat and do not provide linkages to suitable habitat to promote or provide for wildlife movement. In addition, Plant No. 1 is not located in the vicinity of any native wildlife nursery sites. Therefore, no impacts from the implementation of the proposed project would occur on wildlife movement.

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

No Impact. The City of Fountain Valley does not have local policies or ordinances protecting biological resources on non-City properties (City of Fountain Valley 1995 and 2017). Because the proposed project does not include impacts to biological resources within City properties, the proposed project would result in no impact on local ordinances and policies related to protecting biological resources.

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

No Impact. The project area is located within the Orange County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP). However, the project area is not within an area that is specifically protected or has additional conditions for conservation. Construction activities would be contained within the Plant No. 1 property, and the proposed project would not conflict with the provisions of the management of designated areas. No impacts would occur.

4.5 Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*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?	☐	☒	☐	☐

Discussion

The following analysis is based on a review of previous cultural resources records searches conducted at the South Central Coastal Information Center (SCCIC) for the OCSD Biosolids Master Plan (ESA 2017) and the Groundwater Replenishment System Final Expansion Project and Water Production Enhancement Project (ESA 2016) which encompassed the project area; a historic map and aerial photograph review; a geo-archaeological review; review of previous paleontological resources records search results conducted by the Natural History Museum of Los Angeles County for the Groundwater Replenishment System Final Expansion Project and Water Production Enhancement Project (McLeod 2016; ESA 2016); a paleontological resources literature review; and a Sacred Lands File (SLF) search commissioned through the Native American Heritage Commission (NAHC).

South Central Coastal Information Center Records Search

The records search at SCCIC included a review of all recorded cultural resources within an approximate 0.5-mile radius of the project area, as well as a review of cultural resource reports on file. A total of 13 cultural resources studies have been conducted within an approximate 0.5-mile radius of the project area (**Table 10**). Of the 13 previous studies, one study included cultural resources monitoring within a small portion of the project area (OR 4259), two studies included archival research within the project area (OR 1836, OR 4172), and one study included revisions to a Final EIR that encompassed the project area (OR 4087). Less than 5 percent of the proposed project area has been included in previous cultural resources surveys.

The records search indicated that no cultural resources have been previously recorded within an approximate 0.5-mile radius of the project area. However, several archaeological resources (CA-ORA-58, -76, -163, -165, -839, -843, -844, -845, -906, and -1740) have been recorded outside of the 0.5-mile radius. Resource CA-ORA-516 consists of a single human burial and was encountered southwest of the project area within similar flat landforms as those found in the project area. The remainder of the archaeological resources (consisting of habitation sites, shell middens, and historic-period trash scatters) were recorded on the eastern bluffs of the Santa Ana River.

TABLE 10
PREVIOUS CULTURAL RESOURCES INVESTIGATIONS INCLUDING THE PROJECT AREA

Author	SCIC # (OR-)	Title	Year
Padon, Beth	1836	*Cultural Resources Review for Groundwater Replenishment System Program EIR/Tier I/EIS, Orange County Water District and County Sanitation Districts of Orange County*	1998
P&D Consultants, Inc.	4087	*Final Program EIR for the Groundwater Replenishment System*	1999
Chasteen, Carrie	4172	*Historic Property Survey Report San Diego Freeway (I-405) Improvement Project SR-73 to I-605, Orange and Los Angeles Counties*	2011
Statistical Research, Inc	4259	*Cultural Resources Monitoring Report, Orange County Water District Groundwater Replenishment System, Orange County, California*	2007

ESA, 2017

Historic Map and Aerial Photograph Review

Historic maps and aerial photographs were examined in order to provide historical information about the project area and to contribute to an assessment of the project area's archaeological sensitivity. Available maps include: the 1868 U.S. Surveyor General's survey plat map of Townships 5 and 6 South, Range 10 West; the 1896 and 1901 Santa Ana 1: 62,500 topographic quadrangles. Historic aerial photographs from 1953. 1963, 1972, 1994, 1995, 2002-2005, 2009, 2010, and 2012 were also reviewed (historicaerials.com 2017).

The 1868 U.S. Surveyor General's survey plat map shows the project area as being located within Rancho Las Bolsas. The available historic maps show the project area as undeveloped and located immediately west of the naturally running Santa Ana River. The 1953, 1963, and 1972 historic aerial photographs indicate that the southern portion of the project area was starting to undergo development for the construction of OCSD's Plant No. 1. However, the rest of the project area was being used for agricultural purposes. The Santa Ana River located immediately east of the project area is also shown confined with artificial levees. The surrounding vicinity did not become urbanized until the latter half of the 20th century. The 1994 through 2012 historic aerial photographs show that the entire project area was developed with buildings and an entrance road.

Geoarchaeological Review

A desktop geoarchaeological review of the proposed project area and vicinity was conducted in order to assess the potential for buried archaeological resources within the proposed project area. The project area is situated on a landform dominated by a low-gradient, sandy alluvial fan that merges with marine deposits at the coast. During the late Pleistocene, sea-level was approximately 120 meters below present level, leaving the vicinity of the project area approximately 9.3 miles (15.0 km) inland. Sea level rose throughout the Holocene, attaining near present conditions by approximately 2,000 to 4,000 years ago. Near surface deposits within the project area are mapped as late Holocene to latest Pleistocene alluvial fan deposits (Morton 2004; Morton and Miller 2006), and consist of gravel, sand, and silt transported and deposited by the Santa Ana River. The project area is covered by a paved surface that likely is underlain by fill and required grading prior to construction. The project area is also located approximately 3.5 miles

north of a historic salt marsh (which was once located within OCSD's Plant No. 2), which would have been at or just above sea level and would have offered important resources to prehistoric inhabitants in the area.

Soils within the project area are mapped as Metz loamy sand (NRCS, 2016). The Metz soil series consists of very deep, somewhat excessively drained soils. Metz soils are formed in alluvial parent material on floodplains and alluvial fans with slopes of 0 to 15 percent. Since Metz soils are commonly cultivated, the typical soil pedon possesses a shallow plowzone A-horizon (Ap) overlying multiple layers of sandy loam to sand parent material (C1, C2, C3, C4 horizons). The absence of a B-horizon is likely due to the short geological time that has passed since deposition of the last unit of parent material (C1), although agricultural activity has the potential to have partially disrupted B-horizon development. The sequence of several units of parent material (C-horizon) reflects changes over time in the behavior of the Santa Ana River, including periodic overbank flooding. Because the C-horizons represent vertical accretion (i.e., building) on the floodplain, there is a potential that successive fluvial deposits covered and preserved archaeological resources that had accumulated between depositional events. Therefore, Metz soils are considered to have a high sensitivity for buried archaeological resources.

Although paved and filled, the project area appears to retain high sensitivity for buried archaeological resources. During the latest Pleistocene and Holocene rising sea levels reduced fluvial downcutting and increased deposition capable of burying archaeological resources. Historically, the project area was approximately 3.5 miles north of a large salt marsh, an area that would have offered important resources. In addition, the project area is immediately adjacent to the Santa Ana River. As a result, it is likely that the project area may have been selected for occupation, and could contain buried artifacts and features associated with such use.

Paleontological Resources Records Search

The paleontological resources records search results indicate that no vertebrate fossil localities lie within the project area; however, there are localities nearby from the same sedimentary units (older Quaternary deposits) that may occur subsurface in the project area. A total of nine fossil localities (LACM 1339, 3267, 4219, 6370, 7366, and 7422-7425) are located approximately 1.75 to 4.75 miles away from the project area. Locality LACM 1339 yielded fossil specimens of mammoth (*Mammuthus*) and camel (*Camelidae*) bones recovered from sands at approximately 15 feet below ground surface. LACM 3267 yielded a specimen of a fossil elephant (Proboscidea) at an unknown depth. LACM 4219 produced fossil specimens of turtle (*Chelonia*) and camel (*Camelidae*) at an unknown depth. LACM 6370 yielded a specimen of fossil horse (*Equus*) at an unspecified depth. Locality LACM 7366 preserved a mix of small marine, freshwater, and terrestrial animals, with specimens of leopark shark (*Triakis*), three-spined stickleback (*Gasterosteus*), garter snake (*Thamnophis*), desert shrew (*Notiosorex*), and pocket gopher (*Thomomys*) from screen washed sediment collected at unknown depths. A series of fossil localities (LACM 7422-7425) from alluvium or dune deposits also yielded fossil specimens of mammoth (*Mammuthus*), bison (*Bison*), and horse (*Equus*) at unknown depths (McLeod 2016).

Paleontological Resources Literature Review

The geology of the project area has been mapped by Morton and Miller (2006) at a scale of 1: 100,000. This mapping indicates that the project area occurs on young alluvial fan deposits that date from the Holocene to the Late Pleistocene and consist of unconsolidated to moderately consolidated silt, sand, and pebbly sand eroded from the surrounding hills and valleys (Morton and Miller 2006).

The paleontological resources literature review also indicates that the surficial geologic units mapped in the proposed project area are too young to preserve fossil resources at the surface; however, these units increase in age with depth and therefore may preserve fossil resources in the subsurface. Furthermore, geologic mapping indicates that Pleistocene-aged terrace deposits crop out to the northeast and southwest of the proposed project area (Morton and Miller 2006), and therefore may be present in the subsurface of the proposed project area at an unknown depth. Early Holocene and late Pleistocene alluvial sediments have a history of preserving fossil resources in the Los Angeles Basin and across Orange County. Iconic Ice Age taxa such as mammoths, ground sloths, camels, and many others are commonly found in such sediments (Jefferson 1991a and 1991b; Scott 2010).

Sacred Lands File Search

The NAHC maintains a confidential SLF that contain sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on January 5, 2018 to request a search of the SLF. The NAHC responded in a letter dated January 9, 2018. The letter stated that the SLF search returned negative results.

Environmental Evaluation

Would the project:

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

No Impact. ESA conducted a historical evaluation of Plant No. 1 (ESA 2018). The evaluation found that Plant No. 1 does not include any historical resources as defined in CEQA Guidelines Section 15064.5. Plant No. 1 is not directly associated with important events in the history of wastewater treatment, or with the lives of persons significant in the history of water systems in Orange County. Plant No. 1 does not appear to have a significant association with the settlement of Orange County or Fountain Valley, or with significant events contributing to the broad patterns of the history and cultural heritage of California. It is also not associated with a significant architect or engineer, and does not represent the work of an important creative individual nor does it possess high artistic values. It is a common, undistinctive example of the activated sludge plant type, and does not represent an advancement in the technology. Additionally, it does not appear to yield significant information that would expand our current knowledge of theories of design, methods of construction, operation, or other information that is not already known. While the Old Operations Control Building on the subject property initially appeared to demonstrate architectural merit for further consideration an architectural resource, closer inspection revealed it to be a rudimentary example of the Mid-Century style of architecture. Furthermore, its shape and

design appear to be unrelated to its function as an operations control building. Therefore, it does not appear to be an excellent example of its building type. No historical resources have been identified in the surrounding area.

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

Less than Significant with Mitigation Incorporated. No archaeological resources are known to be located within the project area; however, the project area is considered sensitive for the presence of unknown subsurface archaeological resources. One archaeological resource has been recorded southwest of the project area within similar flat landforms as those found in the project area. In addition, the geo-archaeological study indicates that archaeological resources could be present within the project area based on its proximity to the Santa Ana River and a historic salt marsh, and they may have become buried by depositional processes.

Since the proposed project includes ground-disturbing activities, there is a potential for discovery of subsurface archaeological deposits that could qualify as historical or unique archaeological resources under CEQA. This potential impact to unknown archaeological resources is considered significant. However, the implementation of **Mitigation Measures CUL-1** through **CUL-4** would reduce impacts to archaeological resources to less than significant by requiring protection and proper handling of such resources, should any resource be uncovered during ground disturbance activities.

Mitigation Measures

CUL-1: Prior to start of any ground-disturbing activities related to construction at the project area, OCSD shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior 2008) to carry out all mitigation related to archaeological resources.

CUL-2: Prior to start of any ground-disturbing activities related to construction activities at the project area, the qualified archaeologist (or an archaeologist working under the direct supervision of the qualified archaeologist) shall conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of archaeological resources that may be encountered, the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains, and safety precautions to be taken when working with archaeological monitors. OCSD shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

CUL-3: Archaeological monitoring shall be conducted for all excavation activities related to the project construction. Archaeological monitoring shall be conducted by an archaeologist familiar with the types of archaeological resources that could be encountered within the program area, and under the direct supervision of the qualified archaeologist. The frequency of the monitoring shall be determined by the qualified archaeologist in coordination with OCSD. A Native American monitor from a tribe that is culturally and traditionally affiliated with the project area shall be invited to monitor excavation activities at their discretion. In the event that archaeological resources are unearthed during ground-disturbing activities, the archaeological monitor shall be

empowered to halt or redirect ground-disturbing activities away from the vicinity of the discovery until OSCD, qualified archaeologist have evaluated the discovery and determined appropriate treatment (as prescribed in CUL-4). The archaeological monitor shall keep daily logs detailing the types of activities and soils observed, and any discoveries. After monitoring has been completed, the qualified archaeologist shall prepare a report that details the results of monitoring for submittal to OCSD, the South Central Coastal Information Center, and any Native American tribe that requests a copy.

CUL-4: In the event of the unanticipated discovery of archaeological materials during grading or excavation activities associated with the proposed project, OCSD shall immediately cease all work activities in the area (within approximately 100 feet) of the discovery until it can be evaluated by the qualified archaeologist. Construction shall not resume until the qualified archaeologist has conferred with OCSD on the significance of the resource.

In the event that preservation in place is determined to be infeasible and data recovery through excavation is the only feasible mitigation available, an Archaeological Resources Treatment Plan shall be prepared and implemented by the qualified archaeologist in consultation with OCSD that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource. OCSD shall consult with appropriate Native American representatives in determining treatment for prehistoric or Native American resources to ensure cultural values ascribed to the resource are considered.

Significance After Mitigation: Less than Significant

With the implementation of Mitigation Measure CUL-1 through CUL-4, potential impacts to archaeological resources would be reduced to less than significant by requiring protection and proper handling of such resources, should any resource be uncovered during ground disturbance activities.

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

Less than Significant with Mitigation Incorporated. Based on the results of the paleontological database search, there are no known fossil localities in the project area. However, several fossil localities from older Quaternary deposits, similar to those that are likely present in the subsurface of the project area, are located approximately 1.75 to 4.75 miles away. These localities have yielded a wide variety of vertebrate fossils, from marine taxa like leopard shark to fish such as the three-spined stickleback and terrestrial animals such as garter snake, turtle, desert shrew, pocket gopher, mammoth, bison, horse, camel, and elephant. Due to the young age of the surficial sediments underlying the project area, there is a low potential to uncover significant vertebrate fossil remains during surface grading or shallow excavations. However, excavations that extend down into the older Quaternary deposits may encounter significant fossil vertebrate specimens. Since the project includes ground-disturbing activities (down to a depth of approximately 25 feet below grade), there is a potential for discovery of fossils that may be considered significant paleontological resources. If previously unknown potentially unique paleontological resources are uncovered during excavation or construction, significant impacts could occur. However, the

implementation of **Mitigation Measures CUL-5** through **CUL-7** would reduce impacts to paleontological resources to less than significant by requiring protection and proper handling of such resources, should any resource be uncovered during ground disturbance activities.

Mitigation Measures

CUL-5: Prior to start of any ground-disturbing activities, OCSD shall retain a qualified paleontologist meeting the Society for Vertebrate Paleontology (SVP) Standards (SVP 2010) to carry out all mitigation related to paleontological resources. The qualified paleontologist shall be selected from the list of County of Orange certified paleontologists.

CUL-6: Prior to the start of construction, the qualified paleontologist, or his or her designee, shall conduct training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. OCSD shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

CUL-7: In the event of a fossil discovery by construction personnel, all work in the immediate vicinity of the find shall cease. The qualified paleontologist shall be notified and evaluate the find before restarting construction activity in the area. If it is determined that the fossil(s) is (are) scientifically significant, the qualified paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources:

1. Salvage of Fossils. The qualified paleontologist (or paleontological monitor) shall recover significant fossils following standard field procedures for collecting paleontological resources, as described by the SVP (2010). Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case the paleontologist shall have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner.

2. Preparation and Curation of Recovered Fossils. Once salvaged, significant fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection (such as the University of California Museum of Paleontology), along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the qualified paleontologist.

Significance After Mitigation: Less than Significant

With the implementation of Mitigation Measure CUL-5 through CUL-7, potential impacts to paleontological resources would be reduced to less than significant by requiring protection and proper handling of such resources, should any resource be uncovered during ground disturbance activities.

d) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant with Mitigation Incorporated. No human remains are known to exist within or adjacent to the project area, 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. Disturbance of human remains would result in a potentially significant impact. However, the implementation of **Mitigation Measure CUL-8** would reduce impacts to human remains to less than significant, should any remains be uncovered during ground disturbance activities, by requiring protection and proper handling of such resources in accordance with California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98.

Mitigation Measures

CUL-8: If human remains are encountered, OCSD or its contractor shall halt work in the vicinity (within 100 feet) of the find and contact the Orange County Coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American, the NAHC will be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98. The NAHC will designate a Most Likely Descendant (MLD)for the remains per PRC Section 5097.98. Until the landowner has conferred with the MLD, OCSD shall ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.

Significance After Mitigation: Less than Significant

With the implementation of Mitigation Measure CUL-8, potential impacts to human remains would be reduced to less than significant, should any remains be uncovered during ground disturbance activities, by requiring protection and proper handling of such resources in accordance with California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98.

4.6 Energy

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

Discussion

OCSD energy supplies are derived from various sources: digester gas, natural gas purchased from offsite suppliers, electricity purchased from Southern California Edison (SCE), and electricity produced by the onsite Central Generation (Cen Gen) facility. OCSD has converted its operating machinery to natural gas or electric power while emergency back-up generators are equipped to operate on diesel fuel. Many onsite vehicles also use electric power or compressed gas.

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 would require a variety of construction equipment. The primary energy demand during construction would be associated with use of gasoline- and diesel-powered mobile construction equipment. Electricity would also be used for construction lighting and electrically driven construction devices such as air compressors, pumps and other equipment. Nevertheless, construction would be temporary and would not result in a substantial increase in overall or per capita energy consumption. Construction impacts would be less than significant.

The proposed project will serve a key function of the treatment plant that requires a substantial amount of energy to function properly. The proposed project would rehabilitate and improve facilities within the existing Headworks No. 2 in order to increase its influent pumping capacity. The proposed project would also demolish Headworks No. 1 so that the existing total capacity of the headworks facilities at Plant No. 1 would not change and no increase in energy would be needed. Therefore, the energy requirements of the proposed project would not result in a substantial increase in overall or per capita energy consumption. Impacts would be less than significant.

b) Result in wasteful or unnecessary consumption of energy?

Less than Significant Impact. Implementation of the proposed project is not anticipated to result in an increase in energy consumption related to operational activities at Plant No. 1. Implementation of the proposed project would be an upgrade to the current system and would use energy efficient pumps and machinery. It is not anticipated the proposed project would result in a wasteful or unnecessary consumption of energy nor require new sources of energy. 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. Implementation of the proposed project would not increase energy demands resulting in the need for new sources of energy production or conveyance infrastructure. Energy would be provided to the facility from the existing power grid serving the entire Plant No. 1 treatment facility. It is not anticipated the proposed project would result in a wasteful or unnecessary consumption of energy nor require new sources of energy. Impacts would be less than significant.

d) Conflict with applicable energy efficiency policies or standards?

Less than Significant Impact. It is not anticipated the proposed project would conflict with energy efficiency policies or standards. Impacts would be less than significant.

4.7 Geology, Soils, and Seismicity

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
7. 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 waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Discussion

The potential impacts of seismic and unstable geologic hazards due to implementation the proposed project is discussed below. The summaries of potential impacts are based on the evaluation of the following:

- Review of readily available background materials including published geologic and seismic hazards maps and stereoscopic aerial photographs.
- Review of the geology and soils information provided in the *Orange County Water District Groundwater Replenishment System Final Expansion Project, Addendum No. 6* (OCWD 2016).
- Review of information presented in *Design Memorandum 14 Geotechnical Data Report Headworks Rehabilitations and Expansion at Plant No. 1 Project No. P1-105 Orange County Sanitation District Fountain Valley, California* (Ninyo & Moore 2017).

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.)

Less than Significant Impact. The Alquist-Priolo Earthquake Zoning Act (Alquist-Priolo Act) requires the delineation of fault zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce hazards associated with fault rupture. The Alquist-Priolo Earthquake Fault Zones (AP Zones) are the regulatory zones that include surface traces of active faults. Active or potentially active faults within Orange County are the San Andreas fault, San Jacinto fault, Whittier-Elsinore fault, Newport-Inglewood fault and Palos Verdes fault. The proposed project is not located within a designated Alquist-Priolo Earthquake Fault Zone (AP Zone). The nearest fault zone is the Newport-Inglewood fault zone located approximately 3.2 miles southwest of the proposed project (Ninyo & Moore 2017). The nearest known mapped active fault is the San Joaquin Hills Blind Thrust fault located approximately 0.3 miles southeast of the project site. No active faults are known to cross the project site.

The structural elements of the project would undergo appropriate design-level geotechnical evaluations prior to final design and construction as required to comply with the California Building Code (CBC). The geotechnical engineer, as a registered professional with the State of California, is required to comply with the CBC and local codes while applying standard engineering practice and the appropriate standard of care required for projects in the Orange County area. The California Professional Engineers Act (Building and Professions Code Sections 6700-6799), and the Codes of Professional Conduct, as administered by the California Board of Professional Engineers and Land Surveyors, provides the basis for regulating and enforcing engineering practice in California.

The design of the new facilities would comply with the standards of the CBC. Adherence to the CBC standards would ensure the strongest structure feasible at the proposed locations, with no increased risk to human life. Furthermore, the demolition and rehabilitation of facilities such as the pump stations would reduce the likelihood of structural damage due to seismic events. Impacts related to the risk of loss, injury, or death involving fault rupture would be considered less than significant.

ii) Strong seismic ground shaking?

Less than Significant Impact. The project area is located in a seismically active region and is subject to strong ground shaking. Ground shaking is partly related to the size of an earthquake, the distance from the epicenter, and the response of the geologic materials at the site. As a rule,

the greater the earthquake magnitude and the closer the fault rupture to the site, the greater the intensity of ground shaking and potential damage to facilities. As discussed, the Newport-Inglewood fault zone is a known active fault located near the project area and is capable of producing earthquakes. The Newport-Inglewood-Rose Canyon fault is capable of generating a magnitude (Mw) 7.1 earthquake and has an estimated slip rate of 0.5 to 2.0 millimeters per year.

Earthquakes are unavoidable hazards; however, the resultant damage can be minimized through appropriate seismic design and engineering. As discussed under i) above, OCSD would design the new facilities in conformance with applicable standards established by the CBC. These design standards consider proximity to potential seismic sources and the maximum anticipated ground shaking possible, and compliance with these building safety design standards would reduce potential impacts associated with ground shaking. Therefore, impacts associated with ground shaking would be considered less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant Impact. Liquefaction is a phenomenon where unconsolidated and/or near saturated soils loses cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil during strong earthquake shaking results in the temporary fluid-like behavior of the soil.

The proposed project is located within an area mapped as potentially susceptible to liquefaction (Ninyo & Moore 2017). 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 new facilities such as the odor control facility, pump stations, or Power Buildings, and during construction site preparation activities, liquefiable soils could have the potential to impact the structural components of the proposed project. Therefore, implementation of the proposed project could expose people or structures to potential significant impacts, including the risk of loss, injury, or death involving liquefaction.

As discussed above, the proposed project components would undergo a geotechnical investigation and be designed to resist damage from seismic shaking. As part of the proposed project, all geotechnical recommendations provided by the project geotechnical engineer would be incorporated into project designs in areas where liquefiable soils are identified. Solutions to rectify liquefaction are modern engineering approaches used throughout California and are considered standard industry practice. Methods to correct liquefiable soils include removal and replacement of problematic soils, the use of pile foundations, and drainage columns to reduce saturated conditions. The geotechnical investigation and corrective actions for potential liquefiable soils, where needed, would be based on the CGS Special Publication 117A. The project structures would be subject to the CBC which controls the design and location of buildings and structures in order to safeguard the public and reduce potential impacts related to liquefaction to less than significant.

iv) Landslides?

No Impact. The implementation of the proposed project would not result in landslides. Landslides are deep-seated ground failures (several tens to hundreds of feet deep) in which a large section of a slope detaches and slides downhill. The project area is located in a relatively flat area that has previously been graded and developed. There is no known history of landslides in the general area of the project. Further, the project area is not within a State-Designated Seismic Hazard Zone for Earthquake-Induced Landslides (DOC 1998). Therefore, landslides are not considered a potential hazard within the project area and no impacts would occur.

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

Less than Significant Impact. Soil exposed by construction activities for the proposed project could be subject to erosion if exposed to heavy rain, winds, or other storm events. Further, as construction could disturb one or more acres of soil, OCSD would be required to comply with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. In compliance with this permit, a Storm Water Pollution Prevention Program (SWPPP) would be prepared and implemented, which would require erosion control, sediment control, non-stormwater and waste and material management Best Management Practices (BMPs) to minimize the loss of topsoil or substantial erosion.

Furthermore, implementation of the proposed project would need to comply with SCAQMD Rule 403 for dust control that would ensure the prevention and/or management of the loss of topsoils and erosion during construction. Therefore, potential loss of topsoil and substantial soil erosion during construction and operation of the proposed project 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. Non-seismically-induced geologic hazards such as landslides, lateral spreading, settlement, and slope failure can be caused by unstable soils. Subsidence of the ground surface occurs under static conditions (i.e., due to consolidation settlement from overlying load or long-term water or mineral extraction), but can also be accelerated and accentuated by earthquakes. The extraction of fluid resources from subsurface sedimentary layers (i.e., water or oil) can result in subsidence from the removal of supporting layers in the geologic formation. Settlement of loose, unconsolidated soils generally occurs slowly, but can cause significant structural damage if structures are not properly designed. The project area is not in an area that is subject to subsidence identified in the City of Fountain Valley General Plan (City of Fountain Valley 1995). Therefore, no impacts related to subsidence are anticipated.

Refer to responses above for discussions of potential impacts related to liquefaction and landslides. The proposed project is located in an area defined as having the potential for liquefaction or collapse. The proposed project would involve grading activities and would construct subterranean facilities that could induce unstable soil activity. Therefore, the project could be located on unstable soils resulting in potentially significant impacts. However, the

proposed project would be subject to the CBC which controls the design and location of facilities in order to safeguard the public and reduce potential unstable soils impacts. The proposed project would incorporate engineering design features to remediate potential significant impacts associated with liquefaction, collapsible soils, and lateral spreading. Therefore, the implementation of the proposed project would result in less than significant impacts associated with unstable 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?

Less than Significant Impact. Expansive soils are characterized by their ability to undergo significant shrink or swell due to variations in moisture content. This can result from precipitation, landscape irrigation, utility leakage, roof drainage, perched groundwater, drought, or other factors. The predominate soil association within the project area is the Heuneme-Bolsa Association, a nearly level, excessively drained fine sand loams located on alluvial fans and floodplains. The soils are characterized as having a moderate-to-high shrink-swell potential (OCWD 2016). The presence of expansive soils could decrease the structural stability of the proposed project facilities, which could result in structural or operational failure of proposed facilities and or threaten the health and safety of on-site workers. Such impacts are considered potentially significant.

However, as described above, all geotechnical recommendations provided by the project geotechnical engineer would be incorporated into the project's designs. The geotechnical investigation would provide corrective actions for potential expansive soils. The project structures would be subject to the CBC which controls the design and location of facilities in order to safeguard the public and reduce potential impacts related to expansive soils to less than significant levels.

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

No Impact. The proposed project does not include septic tanks or alternative waste disposal systems. As a result, there is no potential for soil failure associated with septic tanks or alternative waste disposal systems. No impact would occur.

4.8 Greenhouse Gas Emissions

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

Discussion

"Global warming" and "global climate change" are the terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its projected continuation. According to the International Panel on Climate Change (IPCC) warming of the climate system is now considered unequivocal (IPCC 2007). Natural processes and human actions have been identified as the causes of this warming. The IPCC has concluded that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. After 1950, increasing GHG concentrations resulting from human activity such as fossil fuel burning and deforestation are believed to be responsible for most of the observed temperature increase. Increases in GHG concentrations in the earth's atmosphere are thought to be the main cause of human-induced climate change. Certain gases in the atmosphere naturally trap heat by impeding the exit of solar radiation that is reflected back into space after striking the earth. This is sometimes referred to as the "greenhouse effect" and the gases that cause it are called "greenhouse gases." Some GHGs occur naturally and are necessary for keeping the earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and increasing average global temperatures.

Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) are the principal GHGs. When concentrations of these gases exceed natural concentrations in the atmosphere, the greenhouse effect may be intensified. CO_2, CH_4 and N_2O occur naturally, and through human activity. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing[2] associated with agricultural practices and landfills. Other human-generated GHGs include fluorinated gases such as SFCs, PFCs and SF_6, which have much higher heat-absorption potential than CO_2, and are byproducts of certain industrial processes.

CO_2 is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-

[2] Off-gassing is defined as the release of chemicals under normal conditions of temperature and pressure.

for-pound basis, how much a gas contributes to global warming relative to how much warming would be caused by the same mass of CO_2. For example, CH_4 and N_2O are substantially more potent GHGs than CO_2, with GWPs of 25 and 298 times that of CO_2, respectively.

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons of CO_2 equivalents (CO_2e). CO_2e is calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO_2e, both from residential/commercial developments and human activity in general.

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

In accordance with Executive Order S-3-05, the Secretary of CalEPA is required to coordinate efforts of various agencies, which comprise the California Climate Action Team (CAT), in order to collectively and efficiently reduce GHGs. These agencies include CARB, the Secretary of the Business, Transportation and Housing Agency, Department of Food and Agriculture, the California Natural Resources Agency, the California Energy Commission, and the Public Utilities Commission. The CAT provides periodic reports to the Governor and Legislature on the state of GHG reductions in the state as well as strategies for mitigating and adapting to climate change. The first CAT Report to the Governor and the Legislature in 2006 contained recommendations and strategies to help meet the targets in Executive Order S-3-05. The 2010 CAT Report, finalized in December 2010, expands on the policies in the 2006 assessment. The new information detailed in the CAT Report includes development of revised climate and sea-level projections using new information and tools that became available and an evaluation of climate change within the context of broader social changes, such as land-use changes and demographic shifts.

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the Governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

CARB subsequently expressed its intention to initiate the second update to the Climate Change Scoping Plan update during 2015 and 2016 with adoption scheduled thereafter.

California Health and Safety Code, Division 25.5 – California Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted AB 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions and is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

As required by HSC Division 25.5, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. CARB has determined the target, based on GWP values from the IPCC Fourth Assessment Report (AR4), for the 1990 GHG emissions inventory and 2020 GHG emissions limit is 431 MMTCO2e. CARB updated the State's 2020 BAU emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy. CARB's updated 2020 BAU emissions estimate using the GWP values from the IPCC AR4 is 509.4 MMTCO2e. Therefore, the emission reductions necessary to achieve the 2020 emissions target of 431 MMTCO2e would be 78.4 MMTCO2e, or a reduction of GHG emissions by approximately 15.4 percent.

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197; both were signed by Governor Brown. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities. CARB is in the process of preparing the second update to the Scoping Plan to reflect the 2030 target established in Executive Order B-30-15 and SB 32. The 2017 Scoping Plan Update discusses a Proposed Scenario and four alternatives. CARB states that the Proposed Scenario "is the clear choice to achieve the State's climate and clean air goals." (CARB 2017) Under the Proposed Scenario, the majority of the reductions would result from continuation of the Cap-and-Trade regulation. Additional reductions are achieved from requiring 20 percent reduction of GHG emissions from the refinery sector, electricity sector standards (i.e., utility providers to supply 50 percent renewable electricity by 2030), doubling the energy efficiency savings at end uses, additional reductions from the Low Carbon Fuel Standard (LCFS), implementing the short-lived GHG strategy (e.g., hydrofluorocarbons), and implementing the mobile source strategy and sustainable freight action plan. The alternatives are designed to consider various combinations of these programs as well as consideration of a carbon tax in the event the Cap-and-Trade regulation is not continued.

Continuation of the Cap-and-Trade regulation (or carbon tax) is expected to cover approximately 34 to 76 percent of the 2030 reduction obligation (CARB 2017). Under the Proposed Scenario, the short-lived GHG strategy is expected to cover approximately 13 to 26 percent. The Renewables Portfolio Standard with 50 percent renewable electricity by 2030 is expected to cover approximately 10 to 11 percent. The mobile source strategy and sustainable freight action plan includes maintaining the existing vehicle GHG emissions standards, increasing the number of zero emission vehicles and improving the freight system efficiency, and is expected to cover approximately 9 to 11 percent. The doubling of the energy efficiency savings, including demand-response flexibility for 10 percent of residential and commercial electric space heating, water heating, air conditioning and refrigeration, requires the CEC in collaboration with the California Public Utilities Commission (CPUC) to establish the framework for the energy savings target setting. The CEC has proposed a schedule for establishing this framework and target setting by November 2017, which will outline the necessary actions that will need to occur in future years. The CEC states that workforce education and training institutions will be required to engage the building industry, map industry priorities for efficiency to major occupations that will provide services, identify workforce competency gaps, and quantify the work needed to build a workforce to implement high-quality efficiency projects at scale. Under the Proposed Scenario, CARB expects that the doubling of the energy efficiency savings by 2030 would cover approximately 7 to 8 percent of the 2030 reduction obligation. The other strategies would be expected to cover the remaining percentage of the 2030 reduction obligation.

Senate Bill 375

SB 375 (Chapter 728, Statutes of 2008), which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted by the State on September 30, 2008. Under SB 375, CARB is required, in consultation with the state's Metropolitan Planning Organizations, to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035. In February 2011, CARB adopted the final GHG emissions reduction targets for the State's Metropolitan Planning Organizations, including the Southern California Association of Governments (SCAG), which is the Metropolitan Planning Organization for the region in which the City of Los Angeles is located. Of note, the reduction targets explicitly exclude emission reductions expected from the AB 1493 and the low carbon fuel standard regulations.

Under SB 375, the reduction target must be incorporated within that region's Regional Transportation Plan (RTP), which is used for long-term transportation planning, in a Sustainable Communities Strategy (SCS). Certain transportation planning and programming activities would then need to be consistent with the SCS; however, SB 375 expressly provides that the SCS does not regulate the use of land, and further provides that local land use plans and policies (e.g., general plan) are not required to be consistent with either the RTP or SCS.

South Coast Air Quality Management District and Significance Thresholds

As a method for determining significance under CEQA, SCAQMD developed a draft tiered flowchart in 2008 for determining significance thresholds for GHGs for industrial projects where SCAQMD is acting as the lead agency. In December 2008, SCAQMD adopted a 10,000 $MTCO_2e$/year threshold for industrial facilities, but only with respect to projects where SCAQMD is the lead agency. SCAQMD has not adopted a threshold for residential or commercial projects at the time of this writing. Additionally, SCAQMD has proposed, but not adopted, a 3,000 MT/year CO_2e threshold for mixed use developments. While the proposed project does not fit neatly into either category, the more stringent of the two thresholds is used to determine significance.

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. According to SCAQMD methodology, because GHG emissions are a cumulative impact, project significance is determined by the combined amortized construction and operational emissions. However, as the operational activities do not change with the implementation of the project, the amortized construction emissions are compared to the SCAQMD threshold to determine significance.

Operation of proposed facilities would only require periodic maintenance, not daily staffing or deliveries. The proposed facilities are anticipated to have a similar number of employees as the existing facilities. Therefore, the proposed project would not require a significant increase in OCSD full-time employees for operation and maintenance of rehabilitated and newly constructed facilities. No changes in the number of truck trips associated with chemical deliveries would occur with the proposed project. Similar to the existing Plant No. 1 facilities, the proposed new facilities would require varying amounts of energy during operation. Because the proposed facilities are upgraded and more energy efficient than the existing facilities, the proposed project would not increase the need for energy. Although not quantified, the implementation of the proposed project may result in a reduction in emissions over the existing conditions. This is because of increased vehicle and building efficiencies.

Construction-related GHG emissions for the proposed project were estimated using CalEEMod Version 2016.3.2 with the same assumptions as the air quality analysis as detailed in Appendix A. The proposed project includes rehabilitation, demolition, and new construction of headworks structures on Plant No. 1. Proposed project-generated emissions were modeled based on general information provided in the proposed project description and by OCSD, and default SCAQMD-recommended settings and parameters attributable to the proposed land use types and site location. Construction activities would begin in 2019 with construction occurring periodically over an eight-year period. Rehabilitation activities would occur over the entire eight-year construction period with activities restricted to dry-weather season only. Demolition is anticipated to occur independent of site preparation and building construction as demolition must be

completed and the site leveled prior to the beginning of construction activities. In order to provide a conservative estimate of emissions, emissions for each phase as quantified for 2019 were used. For phases that were less than a year in length, the emissions estimated by CalEEMod were used directly. For phases that are anticipated to last longer than one year, the total emissions from the 2019 year were multiplied by the total number of years. For the rehabilitation phase, CalEEMod assumed emissions occurred throughout the year, whereas in actuality the rehabilitation would occur over 45 months (3.8 years) out of the 8-year construction timeline. Therefore, the annual 2019 emissions were multiplied by the 3.8 years to provide annual emissions for the rehabilitation phase.

The proposed project's total estimated GHG emissions during construction would be approximately 8,085 $MTCO_2e$ over the entire construction period. This would equal approximately 270 $MTCO_2e$ per year after amortization over 30 years per SCAQMD methodology. As the amortized project emissions are less than the 3,000 metric ton SCAQMD threshold, the proposed project would result in less than significant impacts.

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

Less than Significant Impact. The proposed project would not conflict with any plan, policy, or regulation aimed at reducing the emissions of greenhouse gas emissions as discussed below.

Consistency with CARB Scoping Plan

The CARB Scoping Plan was designed to reduce GHG emissions from new land use projects. The proposed project includes rehabilitation, demolition, and new construction of headworks structures on Plant No. 1. The proposed facilities would be subject to the Scoping Plan requirements. Out of the Recommended Actions contained in CARB's Scoping Plan, the actions that are most applicable to the proposed project would be Actions E-1 (increased Utility Energy efficiency programs including more stringent building and appliance standards), GB-1 (Green Building), and W-1 (Increased Water Use Efficiency). CARB Scoping Plan Action E-1, together with Action GB-1 (Green Building), aims to reduce electricity demand by increased efficiency of Utility Energy Programs and adoption of more stringent building and appliance standards, while Action W-1 aims to promote water use efficiency. The proposed project would be designed to comply with the CALGreen Code to ensure that the new on-site developments would use resources (energy, water, etc.) efficiently and reduce pollution and waste. Therefore, the proposed project would be consistent with the Scoping Plan measures through incorporation of stricter building and appliance standards.

Consistency with SB 375

The key goal of the Sustainable Communities Standard (SCS) is to achieve GHG emission reduction targets through integrated land use and transportation strategies. The focus of these reductions is on transportation and land use strategies that influence vehicle travel. The proposed project would not increase vehicle traffic within the City or the region. Therefore, the proposed project would not conflict with the implementation of SB 375. No mitigation is required.

Consistency with City of Fountain Valley Environmental Services Department

The City of Fountain Valley's Environmental Services Department works with the Orange County Cities Energy Partnership to identify and create projects to improve long-term energy efficiency and sustainability throughout the local area. The City of Fountain Valley plans to reduce greenhouse emissions and energy consumption by 20 percent before 2020. The proposed project will not increase the long-term energy requirements of the existing operational activities and may, with the incorporation of more efficient buildings, result in a decrease in energy consumption over existing conditions. Because the proposed project does not require additional energy from SCE, the proposed project will not hinder the City's attainment of its goal to reduce energy consumption by 20 percent before 2020.

As discussed above, the proposed project would be consistent with the CARB Scoping Plan, SB 375 and with GHG reduction plans for Fountain Valley in which the proposed project is located. Therefore, the proposed project would have a less than significant impact related to applicable GHG plans and policies.

4.9 Hazards and Hazardous Materials

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

Discussion

For the purposes of this analysis, the term “hazardous materials” refers to both hazardous substances and hazardous wastes. Under federal and state laws, materials, including wastes, may be considered hazardous if they are specifically listed by statute as such or if they exhibit one of the following four characteristics: toxicity (causes adverse human health effects), ignitability (has the ability to burn), corrosivity (causes severe burns or damage to materials), or reactivity (can react violently, explode, or generate vapors). The term “hazardous material” is defined in law as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment [California Health and Safety Code, Section 25501(n)].

In some cases, past industrial or commercial activities may have resulted in spills or leaks of hazardous materials, resulting in soil and/or groundwater contamination. Excavated soils having concentrations of certain contaminants, such as lead, gasoline, or industrial solvents that are

higher than certain acceptable levels must be managed, treated, transported, and/or disposed of as a hazardous waste. The California Code of Regulations (CCR), Title 22, Sections 66261.10 through 66261.24, contains technical descriptions of characteristics that would cause a soil to be designated a hazardous waste.

Federal and state laws require that hazardous materials be specially managed. California regulations are compliant with federal regulations and in most cases, are more stringent. Regulations also govern the management of potentially hazardous building materials, such as asbestos-containing materials, lead-based paint, and polychlorinated biphenyls (PCBs) during demolition activities that could potentially disturb existing building materials.

To assess the potential for contamination in soil and groundwater within the project area, an environmental database review was conducted to identify environmental cases,[3] permitted hazardous materials uses,[4] and spill sites[5]. California Government Code Section 65962.5 requires State and local agencies to compile and update, at least annually, lists of hazardous waste sites and facilities. A review of the Department of Toxic Substances Control's (DTSC) Hazardous Waste and Substances List – Site Cleanup (Cortese List) indicates that identified hazardous material sites are not located within the project area (DTSC 2018a). While Government Code Section 65962.5 makes reference to a "list", this information is currently available from the following online data resources (California Environmental Protection Agency [CalEPA] 2017):

- State Water Resources Control Board (SWRCB) GeoTracker database, and
- DTSC EnviroStor database.

Information regarding the potential presence of subsurface contamination within the project area is discussed below. Identified sites include the following types of environmental cases:

- **GeoTracker LUST Cleanup Sites** – Leaking Underground Storage Tank (LUST) sites are typically listed as a result of a release of petroleum hydrocarbons such as diesel, gasoline, motor oil and waste oil. Open cases may be in the site assessment phase to investigate the extent of known releases or undergoing active remediation of groundwater contamination.

A database search of hazardous materials sites using the online DTSC EnviroStor and SWRCB GeoTracker databases identified Plant No. 1 as having two closed LUST sites, one open LUST Cleanup site and one permitted underground storage tank (UST) (DTSC 2018b; SWRCB 2018a).

OCSD Auto Shop (T0605938718)

The OCSD Auto Shop is located within Plant No. 1 at 10844 Ellis Avenue in Fountain Valley. This site which is located in the northern portion of Plant No.1 and has been the subject of ongoing site assessments and remediation under regulatory oversight of the County of Orange Health Care Agency (OCHCA) since 2006. This site is not on the national priorities list. The

[3] Environmental cases are those sites that are suspected of releasing hazardous substances or have had cause for hazardous substances investigations and are identified on regulatory agency lists.

[4] Permitted hazardous materials uses are facilities that use hazardous materials or handle hazardous wastes that operate under appropriate permits and comply with current hazardous materials and hazardous waste regulations.

[5] Spill sites are locations where a spill has been reported to the State or federal regulatory agencies. Such spills do not always involve a release of hazardous materials.

Auto Shop was constructed in 1981. The construction included the installation of diesel and gasoline USTs. Multiple site investigations identified the existence of petroleum fuel constituents in subsurface soils and groundwater; therefore, quarterly groundwater sampling was initiated in November 2003. The primary chemicals of concern in the groundwater at the site are petroleum fuel hydrocarbons. Since the 2003 investigation, ten groundwater monitoring wells were installed to continue testing and monitoring. Groundwater is pumped in this area by production wells and used for municipal and domestic water supply. The drinking water supply is not a primary concern (SWRCB 2018b). Groundwater within this area travels southwest. Based on the results of the most recent groundwater monitoring report conducted in June 2017, it was concluded that (with the exception of tert-butyl alcohol [TBA]) contaminants of concern are at or below their respective water quality objectives (WQOs). It is expected that TBA concentrations will continue to degrade, with little potential for off-site migration (SWRCB 2018b; WPI 2017).

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 involve transport, use, and disposal of hazardous materials such as solvents, oils, grease, and cleaning fluids. Operation and maintenance activities associated with the proposed facilities would be similar to the existing conditions with periodic chemical deliveries and chemical storage in aboveground storage tanks. These storage tanks would be stored within a containment area with secondary containment areas to hold the tank volume and sprinkler system operations to confine and prevent any accidental spills.

All transport, use, and disposal of hazardous materials would comply with federal, state and local laws regulating the management and use of such materials (e.g., U.S. Occupational Safety and Health Standards). Construction specifications prepared for the proposed project would identify BMPs to ensure the lawful transport, use, and disposal of hazardous materials. Therefore, by complying with relevant federal, state, and local laws, the proposed project would not result in a significant hazard to the public or to the environment through the routine transport, use, or disposal of hazardous materials during operation of the proposed project. Impacts 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, while hazardous materials may be used or encountered during construction and operation of the proposed project, the transport, use, and disposal of hazardous materials 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 or operation of the proposed project, containment and clean up would be in accordance with existing applicable regulatory requirements. Construction specifications

prepared for the proposed project would identify BMPs to ensure the lawful transport, use, and disposal of hazardous materials. Therefore, potential impacts to the public or the environment related to reasonably foreseeable accident conditions involving hazardous materials would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Less than Significant Impact. The Robert Gisler Elementary School is located approximately 0.15 mile west of Plant No. 1. Construction activities would use limited quantities of hazardous materials such as gasoline and diesel fuel. Additionally, OCSD is required to comply with all relevant and applicable federal, State and local laws and regulations that pertain to the release of hazardous materials during construction of proposed facilities. Compliance with all applicable federal, State and local regulations would reduce potential impacts to the public or the environment regarding hazardous waste emissions within one-quarter mile of a school. Impacts would be less than significant.

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?

Less than Significant Impact. As mentioned above, Plant No. 1 has two closed LUST sites and one open LUST case within the northwestern portion of the plant, northwest of the project area. Typically, sites are deemed closed once they have demonstrated that the levels of existing contamination present no significant risk to human health or the environment. Two of the LUST sites at Plant No. 1 are closed cases because the tanks and affected soils have been removed and determined to have no residual soil contamination, if any exists, that pose a threat to human health or the environment. Further, no known releases have occurred from the existing permitted UST.

As mentioned above, groundwater movement travels southwest away from the proposed project area. Additionally, no past contamination has been recorded within the project area on Plant No.1. Further, contaminants of primary concern are at or below their respective WQOs (WPI 2017). Therefore, it is unlikely that contaminated soil and/or groundwater would be encountered during excavation, thereby posing a health threat to construction workers, the public, and the environment. Impacts to the public or the environment related to hazardous materials sites would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 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 nearest airport to the project area is the John Wayne Airport, located approximately 4.25 miles to the southeast at 18800 MacArthur Blvd in the City of Costa Mesa. Therefore, the proposed project is not located within an airport land use plan or within 2 miles of a public airport or public use airport. 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. No private airstrips exist in the vicinity of the project area. Therefore, the proposed project would not result in a safety hazard for people residing or working in the project area. No impact would occur.

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

Less than Significant Impact. Construction and operation of the proposed project would occur entirely within Plant No. 1. OCSD currently implements an Integrated Emergency Response Program (IERP) in accordance with Occupational Safety and Health Administration (OSHA) regulations to cover worker safety, spill prevention, emergency response and hazardous materials management for activities at Plant No. 1. The IERP includes safety procedures for operations and maintenance workers, which includes safety training, hazard communications, and personal protective equipment. Construction of the proposed project is not anticipated to physically interfere with an adopted emergency response plan or evacuation plan because all construction activities and staging areas including internal roadways would be within Plant No. 1. Construction activities would not interfere with emergency response access to Plant No. 1 or the project area. Impacts would be less than significant regarding interference 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?

No Impact. The project area is located within the developed Plant No. 1 property and is not located within or in the vicinity of a high fire hazard zone. The proposed project is not located adjacent to wildlands or near a substantial amount of dry brush that could expose people to wildfire risks. No impacts would occur.

4.10 Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
10. 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 the site or 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?	☐	☐	☒	☐
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 that would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water that 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) Inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐
k) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Discussion

Regional Hydrology

The project area is located in the Santa Ana River Watershed, which drains from the slopes of the San Bernardino Mountains to the valley floor of the Inland Empire, through the Prado Basin and on to Orange County and the Pacific Ocean. The Santa Ana River Watershed is the largest watershed in coastal Southern California consisting of over 2,800 square miles. The primary waterway in the Santa Ana River Watershed is the Santa Ana River, which travels nearly 100 miles from its origins near Big Bear Lake to the Pacific Ocean. The project area is within the

Lower Santa Ana River Hydraulic Area, which extends from Prado Dam to the Pacific Coast (SARWQCB 2016).

Topography and Drainage

Elevations within the project area range from 25 to 30 feet above mean sea level (amsl) on Plant No. 1. Due to minor elevation changes, the slope gradients within the project area are relatively flat. Site drainage at Plant No. 1 is conveyed by sheet flow (surface runoff) into existing onsite storm drains and then to the existing wastewater treatment facilities. Plant No. 1 is located adjacent to the Santa Ana River. Surface water in the region primarily consists of urban drainages flowing to the Santa Ana River.

Surface Water

The Santa Ana Region Basin Plan divides the Santa Ana River into six reaches (SARWQCB 2016). The project area is located within Reach 1, where the Santa Ana River transitions into empties to the Pacific Ocean. Reach 1 is a normally dry flood control channel. The portion of the Santa Ana River adjacent to the project area is not listed on the 303(d) list, which consists of "impaired" water bodies (SWRCB 2017).

Groundwater

The Orange County Groundwater Basin underlies central and northern Orange County and is bordered by the Santa Ana Mountains to the east, the Pacific Ocean to the west, the Newport-Inglewood Fault to the southwest and Coyote Hills to the north. Groundwater in the project area is found at shallow depths due its close proximity to the ocean. The depth to groundwater is tidally influenced and varies from season to season.

Flooding

Orange County is vulnerable to flooding during peak rainfall events. The U.S. Army Corp of Engineers (USACE) has significantly reduced flood risks along the Santa Ana River through the construction of concrete-lined levees and flood control channels along much of the river and its tributaries. Plant No. 1 is protected from the 100-year floodplain by the river levees constructed in 1995. The Federal Emergency Management Agency (FEMA) flood insurance maps show that Plant No. 1 is located in an area designated as Zone X, Area with Reduced Risk Due to Levee. This area is protected from the one-percent-annual-chance flood by levee, dike, or other structures subject to possible failure or overtopping during larger floods (FEMA 2017a; FEMA 2017b). The Orange County Flood Control District (OCFCD) now owns and maintains the river levees.

Tsunami, Seiche and Mudflow

Earthquakes can cause flooding due to tsunamis, seiches, or dam failure. Tsunamis are a potential hazard for areas adjacent to the ocean. Orange County has not experienced a major tsunami. The offshore islands provide some protection to the coastline from the impacts of tsunamis originating from distant seismic events. Plant No. 1 is located outside of the tsunami inundation area (CEMA 2009). Seiches are earthquake-induced waves in an enclosed or partially enclosed body of water,

which may produce flooding in local areas. The project area is not located near a body of water that could experience seiches.

Flood Inundation Maps prepared by the USACE show that the project area is located within the Prado Dam Inundation Area. The Prado Dam was completed in 1941 by the USACE to control flooding in the Lower Santa Ana River Basin. Prado Dam is a major component of the Santa Ana Mainstem Project, which extends from the upper canyon in the San Bernardino Mountains downstream to the Pacific Ocean at Newport Beach, along the Santa Ana River. The system is designed to provide various levels of flood protection ranging from 100 to 190 years for areas most susceptible to damage from flooding (USACE 2009; County of Orange 2005).

Environmental Evaluation

Would the project:

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

Less than Significant Impact. Construction and demolition activities including grading, excavation, and backfilling would result in substantial soil disturbance and exposure onsite. Disturbed and exposed soils could be moved by wind and water and result in erosion and sedimentation of stormwater runoff. Construction, rehabilitation, and demolition equipment would use chemicals and solvents such as fuel and lubricating grease for motorized heavy equipment, which could also come into contact with stormwater by way of inadvertent spills or releases. Due to the age of some facilities, hazardous materials may be encountered during demolition that could also mix with stormwater. Therefore, proposed project construction, demolition and rehabilitation has the potential to affect water quality.

Since construction and demolition areas would exceed an acre, these activities must comply with the State Water Resources Control Board (SWRCB) Construction General Permit (General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities [Order No. 2012-006-DWQ]). As part of permit compliance, the contractor would prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) that includes various best management practices (BMPs) that would be implemented during construction and demolition to protect water quality. Types of BMPs include erosion control, sediment control, waste management, and good housekeeping (SWRCB 2012). A notice of intent (NOI) to comply with the permit along with the completed SWPPP must be submitted to the SWRCB prior to construction activities.

A well just south of the Plant No. 1 site on Gisler Avenue measured groundwater levels at approximately 14 feet below the ground surface in 2010 (DWR 2017). Therefore, dewatering of groundwater may be necessary during excavation activities; discharges of groundwater to surface waters may negatively impact water quality. If dewatering is required, compliance with SWRCB General Waste Discharge Requirements (WDRs) (Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality [Order No. R8-2003-0061]) is mandatory. The WDRs include provisions mandating notification, testing, and reporting of dewatered discharges to ensure surface water quality is not impacted by dewatering (SWRCB

2003). Therefore, impacts to water quality resulting from construction and demolition activities would be less than significant.

Chemicals and wastewater associated with operation or maintenance of the newly constructed or rehabilitated facilities could be accidentally released and could come into contact with stormwater, resulting in water quality degradation. However, all stormwater runoff at Plant No. 1 is captured, treated and discharged to the Pacific Ocean along with treated wastewater. Further, the OCSD also prepared its On-Site Stormwater Management Plan (OSSWMP) to comply with the NPDES permit issued by the Santa Ana Regional Water Quality Control Board (SARWQCB) for wastewater discharges from Plant No. 1 as well as the requirements of the State Industrial General Permit (General Permit for Storm Water Discharges Associated with Industrial Activities [Order No. 2014-0057-DWQ]). The OSSWMP details BMPs that must be implemented onsite during Plant No. 1 operation, including spill response, preventative maintenance, and material handling and storage BMPs (OCSD 2005). All constructed and rehabilitated structures would continue to comply with the OSSWMP to ensure water quality is protected during operation. Therefore, no substantial adverse impacts to water quality would occur and operational 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)?

Less than Significant Impact. Water would be required onsite during construction and demolition, mainly for dust control. Water would also be required for operation of the newly constructed facilities. However, all water would be sourced from treated water onsite; therefore, the project's water supply would not come directly from groundwater and would not deplete groundwater supplies. As described in Response a) above, nearby well data indicates groundwater could be relatively shallow on the Plant No. 1 site and dewatering may be required during construction. However, dewatering would only remove the groundwater necessary to effectively complete construction, demolition and rehabilitation activities; this amount of groundwater is not expected to be so large that it would substantially deplete groundwater supplies. Impacts to groundwater supplies would be less than significant.

The newly constructed facilities would add to the impervious surfaces on the Plant No. 1 site; however, demolition would remove 10 structures from the site. Further, the majority of the Plant No. 1 site is paved. Therefore, the net change in impervious surfaces onsite would be minimal, and groundwater recharge would not substantially be affected by the proposed project. Impacts to groundwater recharge would be less than significant.

c) Substantially alter the existing drainage pattern of the site or 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. Construction and demolition activities would disturb and expose soil, which could be moved by wind and water, resulting in erosion and sedimentation of stormwater runoff. However, since construction and demolition would exceed acre, these activities must comply with the SWRCB Construction General Permit and prepare a SWPPP that includes erosion and sediment control BMPs implemented during construction and demolition to protect water quality. An NOI to comply with the permit along with the completed SWPPP must be submitted to the SWRCB prior to construction activities. Therefore, impacts related to erosion and sedimentation would be less than significant during construction.

Demolition of existing structures and construction of new structures on the Plant No. 1 site would permanently alter the site's topography, which could change drainage patterns such that erosion or sedimentation could occur. However, the Plant No. 1 site would remain mostly paved during operation, with minimal amounts of exposed soil and thereby minimal potential for erosion or sedimentation. Although altered drainage patterns could cause erosion and sedimentation if allowed to flow offsite, all stormwater runoff at Plant No. 1 is captured, treated and discharged to the Pacific Ocean along with treated wastewater. Therefore, impacts related to erosion and sedimentation during operation 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 that would result in flooding on- or off-site?

Less than Significant Impact. As stated above, demolition of existing structures and construction of new structures on the Plant No. 1 site would permanently alter the site's topography. Resulting alterations to the site's drainage pattern could result in flooding on or offsite, as the site would remain mostly paved with little infiltration potential. However, all stormwater runoff at Plant No. 1 is captured, treated and discharged to the Pacific Ocean along with treated wastewater. Capture of stormwater runoff would prevent flooding from occurring on or offsite. Therefore, impacts related to flooding would be less than significant.

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

Less than Significant Impact. During operation, all stormwater runoff at Plant No. 1 would continue to be captured, treated and discharged to the Pacific Ocean along with treated wastewater. An existing lift station that collects stormwater in the area of Power Building 3A would be removed as part of project demolition, which could impact the ability of stormwater to be collected onsite. However, since the proposed project would both demolish and construct facilities on the Plant No. 1 site and the site would remain mainly paved, the net change in impervious surfaces onsite would be minimal and stormwater runoff is not expected to increase

such that the remaining stormwater capture facilities would be exceeded. Therefore, impacts related to flooding would be less than significant.

f) Otherwise substantially degrade water quality?

Less than Significant Impact. See the response to a), above.

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 Plant No. 1 site does not contain housing and the proposed project does not include the construction of housing components. There would be no impact regarding placement of housing within a flood zone.

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

Less than Significant Impact. The project area is located adjacent to the Santa Ana River. The area is protected from flooding by walls and levees constructed by the U.S. Army Corps of Engineers in 1995. As mentioned above, the FEMA Flood Insurance Rate Map (FIRM) for the project area shows that the project area is located within the 500-year floodplain, or Zone X, "Reduced Risk Due to Levees" location. The OCFCD owns and maintains the Santa Ana River levees. Further, OCSD routinely implements levee repairs and soil stabilization projects along the Santa Ana River embankment. Accordingly, the project will have a less than significant flooding impacts on structures.

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 area is located downstream of the Prado Dam and within the inundation area of Prado Dam. Improvements to Prado Dam to provide downstream protection from a 100-year flood have been completed. Although the proposed project improvements would be located within the inundation area of Prado Dam, failure of Prado Dam is not expected because Prado Dam was recently improved within the last 20 years and regularly maintained by the USACE. In addition, the Santa Ana River levee provides protection to the wastewater treatment facilities on Plant No. 1, adjacent to the River from a 100-year flood. Failure of the River levee is also not expected because the levee included recent improvements and is regularly maintained. Therefore, the proposed facilities would result in less than significant flooding impacts as a result of the failure of a levee or dam.

j) Inundation by seiche, tsunami, or mudflow?

Less than Significant Impact. As mentioned above, no enclosed bodies of water are located near the project area. Therefore, the implementation of the proposed project would not expose people or structures to a significant risk of loss, injury or death involving inundation by seiche. Impacts would be less than significant. Further, project is not located within a State-identified tsunami

inundation area. Additionally, given the highly developed condition of the project site, mudflows are not likely to occur and impacts would be less than significant.

k) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact. The Santa Ana RWQCB Water Quality Control Plan (Basin Plan) sets water quality objectives that are qualitative and quantitative in order to protect the beneficial uses within the basin. The water quality constituents that have numerical limits for groundwater include: arsenic, bacteria, barium, boron, chloride, cyanide, total dissolved solids, fluoride, metals, Methylene Blue-Activated Substances, pH, radioactivity, sodium, and sulfate. As described above, construction activities would require water for dust control; however, all water would be sourced from treated water onsite and not from groundwater. Further, dewatering may be required during construction. However, dewatering would only remove the groundwater necessary to effectively complete construction, demolition and rehabilitation activities; this amount of groundwater is not expected to be so large that it would substantially deplete groundwater supplies. All dewatering would be stored and treated onsite where it would eventually be discharged into the Pacific Ocean or recycled back into the groundwater basin via the Orange County Water District's (OCWD) Groundwater Replenishment System (GWRS) under existing permits from the Santa Ana Regional Water Quality Control Board further described above. This project does not involve groundwater extraction and would not otherwise interfere with management of the basin. As a result, there would be no conflict with implementation of a water quality control plan or groundwater management plan and no impacts would occur.

4.11 Land Use and Land Use Planning

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

Discussion

Plant No. 1 is located in the City of Fountain Valley, which is geographically located just north of the cities of Huntington Beach, Costa Mesa, and Newport Beach, and just south of the cities of Santa Ana and Anaheim. The City is entirely land-locked and heavily urbanized with a mix of residential, commercial and industrial uses. The City contains predominantly flat terrain and is largely characterized by one or two-story structures (City of Fountain Valley 1995). Plant No. 1 which is zoned as Specific Plan (SP) (City of Fountain Valley 2013).

Environmental Evaluation

Would the project:

a) Physically divide an established community?

No Impact. The proposed project does not propose any action that could divide an established community. The physical division of an established community generally refers to the construction of a 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. Given the proposed project would construct facilities on the existing Plant No. 1, the proposed project would result in no impact to the physical division of 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?

No Impact. The proposed project facilities would be consistent with the existing treatment facilities and on-site uses. The project area is designated under Specific Plan land uses and is zoned for Specific Plan Area – Orange County Sanitation District. The Fountain Valley General Plan designates Plant No. 1 as a Specific Plan Area and is zoned as SP -Orange County Sanitation District. Plant No. 1 contains light industrial and manufacturing uses. The property is developed

with wastewater treatment facilities and other habitable structures for employees. The proposed project facilities would be located within the Plant No. 1 boundary. The project would include headworks facilities that support the process of wastewater treatment. These uses are compatible with the existing character of the site and would not require any changes in zoning. The proposed project components would not conflict with City of Fountain Valley General Plan goals and policies, nor would they conflict with allowable uses within the OCSD SP or existing neighboring land uses. No impacts would occur.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. Refer to response f) within the Biological Resources Section, above.

4.12 Mineral Resources

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

Discussion

Minerals are naturally occurring chemical elements or compounds, or groups of elements or compounds that were not formed by organisms. Naturally occurring concentrations of minerals in the earth's crust are known as mineral deposits. Mineral resources are mineral deposits from which the economic extraction of a commodity (such as gold or copper) is currently potentially feasible. In addition to metallic minerals, materials used for construction (e.g., sand and aggregate), industrial and chemical processes (e.g., salt), and fuel (e.g., crude oil) are considered mineral resources in California.

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 USGS' Mineral Resources Data System (USGS 2018), the project area 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, one oil well exists on Plant; however, this well is "plugged" and therefore is no longer active (DOC 2018). 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 City of Fountain Valley General Plan (City of Fountain Valley 1995) does not identify the project area as a mineral resource zone. Therefore, the implementation of the proposed project would not result in the loss of a locally important mineral resource recovery site. No impacts would occur.

4.13 Noise

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
13. NOISE — Would the project result in:				
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?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) 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 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?	☐	☐	☐	☒
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

Noise is defined as unwanted sound. Sound becomes unwanted when it creates a nuisance that interferes with normal activities, or when it causes physical harm and adversely affects human health. The standard unit of measurement of the loudness of sound is the decibel (dB). The zero point on the dB scale is based on the lowest sound level that a healthy, unimpaired human ear can detect. Changes of 3 dB or fewer are only perceptible in laboratory environments. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness.[6]

Numerous methods have been developed to measure sound over a period of time, including: Equivalent Sound Level (L_{eq}) and Maximum Noise event (L_{max}). Noise level can vary pending on the noise source and duration. Below is description of the units of measure used in this analysis to describe the noise environment.[7]

- L_{eq}: Time variations in noise exposure are typically expressed as a statistical description of the sound pressure level that is exceeded over some fraction of a given observation period (called L_{eq}). For example, the noise levels exceeded on 10 percent of readings is called L_{10}, the median (50th percentile) reading is called L_{50}, etc.

- L_{max}: The maximum noise level recorded during a noise event is typically expressed as L_{max}.

6 M David Egan, *Architectural Acoustics*, Chapter 1, March, 1988.

7 California Department of Transportation, *Technical Noise Supplement* (TeNS), Section 2.2.2.2, September, 2013.

The attenuation of sound is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in noise models, soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/ for each doubling of distance from the point source is typically observed over soft ground with landscaping, as compared with a 6.0 dBA/for each doubling of distance over hard ground such as asphalt, concrete, stone and very hard packed earth. [8]

City of Fountain Valley

Chapter 6.28 of the FVMC serves as the City's Noise Ordinance, which establishes stationary noise standards to control unnecessary, excessive, and annoying noise levels in the City. **Table 11** identifies the applicable stationary noise standards for interior and exterior areas of designated noise zones established in the FVMC.

TABLE 11
FOUNTAIN VALLEY EXTERIOR NOISE STANDARDS

Noise Zone	Interior Noise Standards	Exterior Noise Standards	Time Period
1 – All residential properties.	55 dBA 45 dBA	55 dBA 50 dBA	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.

SOURCE: City of Fountain Valley, 2018

The exterior noise levels shown in Table 11 are meant to be further applied as noise standards based on the duration of the noise; i.e., the louder the noise, the shorter the time it can last. According to Section 6.28.050 of the FVMC, it is unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, either incorporated or unincorporated, to exceed the noise standard shown in Table 11:

a) For a cumulative period of more than 30 minutes in any hour;

b) Plus 5 dB(A) for a cumulative period of more than 15 minutes in any hour;

c) Plus 10 dB(A) for a cumulative period of more than 5 minutes in any hour;

d) Plus 15 dB(A) for a cumulative period of more than 1 minute in any hour; or

e) Plus 20 dB(A) for any period of time.

Section 6.28.050(c) further states that in the event the ambient noise level exceeds any of the noise limit categories provided above, the cumulative period noise level applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level

[8] California Department of Transportation, *Technical Noise Supplement* (TeNS), Section 2.1.4.2, September 2013.

exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

According to Section 6.28.070(5) of the Fountain Valley Municipal Code (FVMC), noise sources associated with construction, repair, remodeling, or grading of any real property are exempt from the City Noise Ordinance, provided said activities do not take place between the hours of 8:00 P.M. and 7:00 A.M. on Monday through Friday, or 8:00 P.M. and 9:00 A.M. Saturdays, or at any time on Sunday or a federal holiday.

City of Costa Mesa

Chapter XIII of Title 13 of the CMMC serves as the City's Noise Ordinance, which establishes stationary noise standards to prohibit unnecessary, excessive and annoying noises from all sources subject to its police power. **Table 12** identifies the applicable stationary noise standards for exterior residential property within the city of Costa Mesa.

TABLE 12
COSTA MESA RESIDENTIAL EXTERIOR NOISE STANDARDS

Noise Zone	Exterior Noise Standards	Time Period
All residential properties.	55 dBA 50 dBA	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.

SOURCE: City of Costa Mesa Municipal Code Section 13-280

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by 5 dBA.

It shall be unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, either within or outside the city, to exceed:

(1) The noise standard for a cumulative period of more than 30 minutes in any hour;

(2 The noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour;

(3) The noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour;

(4) The noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour; or

(5) The noise standard plus 20 dBA for any period of time.

In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

The exterior noise standards shown in Table 12 shall not apply to the following exterior areas of multi-family residential development or live/work units located within a mixed-use overlay district where the base zoning district is nonresidential, approved pursuant to a master plan, and subject to the land use regulations of an urban plan:

(1) Private balconies or patios regardless of size;

(2) Private or community roof decks/roof terraces;

(3) Internal courtyards and landscaped walkways that do not include resident-serving, active recreational uses such as community pool, spa, tennis courts, barbeque, and picnic areas.

In high-rise residential developments in the North Costa Mesa Specific Plan, the exterior noise standards shown in subsection (a) shall only apply to the common outdoor recreational amenity areas located on the ground level. Recreational amenity areas located above the ground level and private balconies and patios shall be exempt from this standard.

According to the section 13-279, the provision of the Costa Mesa Municipal Code (CMMC) shall not apply construction equipment, vehicles, or work between the hours of 7:00 A.M. and 7:00 P.M. Mondays through Fridays, 9:00 A.M. and 6:00 P.M. Saturdays. Similar to the City of Fountain Valley, the City of Costa Mesa, construction noise is exempt within the city code.

Existing Conditions

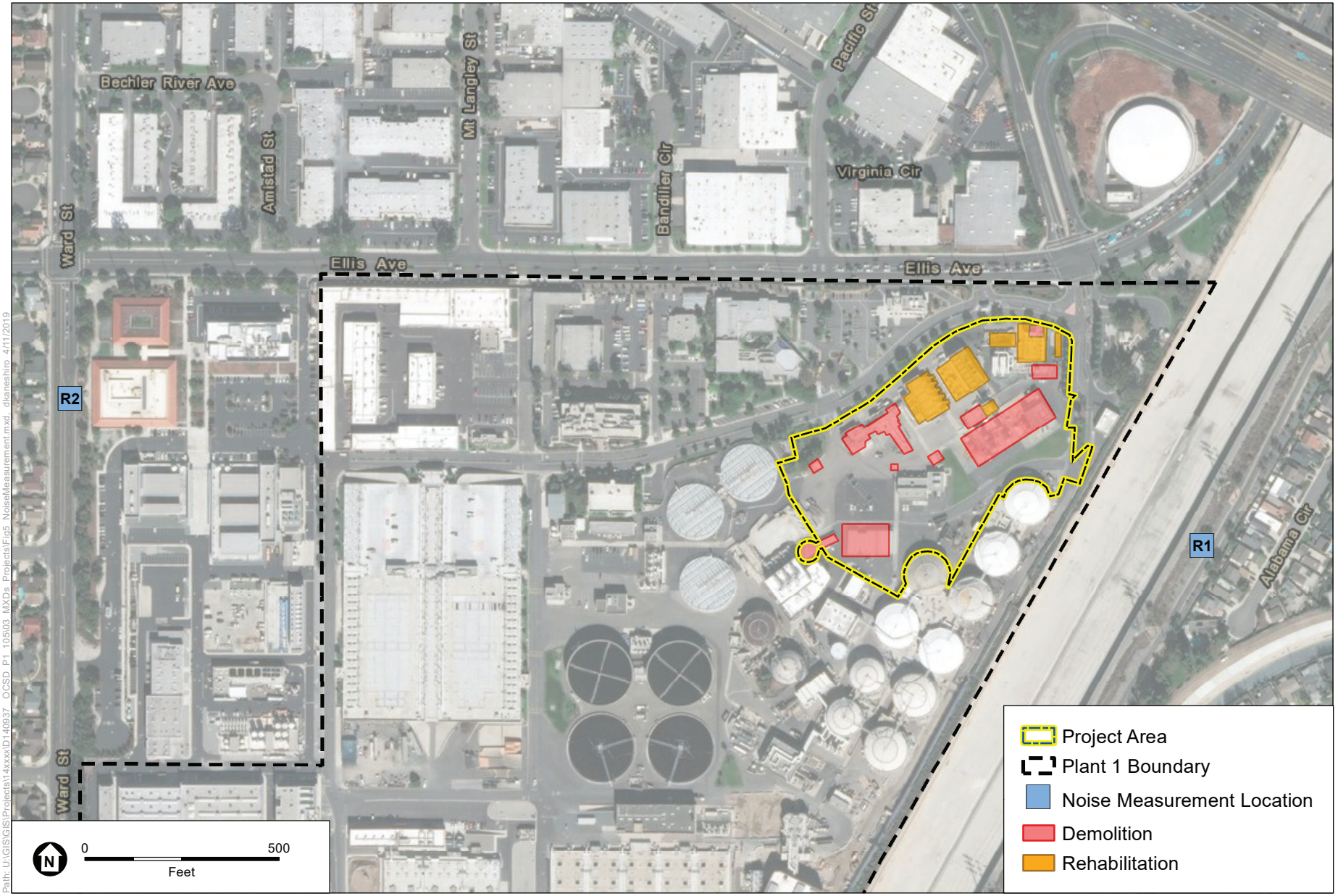
The proposed project is bound by Ellis Avenue to the north, the OCWD and Ward Street to the west, Garfield Avenue to the south, and the Santa Ana River and Santa Ana River Trail to the east. Residential neighborhoods are located west of Ward Street with the nearest residential property located east of the Santa Ana River approximately 500 feet east of the project site. Industrial uses are located to the south across Garfield Avenue and recreational uses exist along the Santa Ana River Trail are located approximately 50 feet east of the project site on top of the existing berm that separates Plant No. 1 from the Santa Ana River. Existing noise sensitive uses in the vicinity of the project site include the following:

- Residential Uses: Located to the east across the Santa Ana River and to the west across Ward Street.

Ambient Noise Levels

The predominant existing noise source surrounding the project site is traffic noise from the Ward Street to the west, Ellis Avenue to the north, and Garfield Avenue to the south. Secondary noise sources include general residential-related activities such as gardening and refuse service activities.

Ambient noise measurements were conducted at two locations, representing the nearby land uses in the vicinity of the project site to establish conservative ambient noise levels. The measurement locations along with existing development and nearby future development are shown on **Figure 5, Noise Measurement Locations**. Short-term (15-minute) noise measurements were conducted at locations R1 and R2. Ambient sound measurements were conducted on Friday, December 15, 2017 to characterize the existing noise environment in the project vicinity.



SOURCE: ESRI

Headworks Rehabilitation and Expansion Project (Project No. P1-105)

Figure 5
Noise Measurement Locations

ESA

The ambient noise measurements were conducted using the Casella CEL-63X Sound Level Meter ("SLM"). The Casella CEL-63X SLM is a Type 2 standard instrument as defined in the American National Standard Institute S1.4. All instruments were calibrated and operated according to the applicable manufacturer specification. The microphone was placed at a minimum height of 5 feet above the local grade, at the following locations as shown in Figure 5:

- Measurement Location R1: This measurement location represents the existing noise environment of single-family residential uses to the west of the project site along Alabama Circle located in the City of Costa Mesa. The sound level meter was placed at a residential use along the Santa Ana River.
- Measurement Location R2: This measurement location represents the existing noise environment of residential uses located to the west across Ward Street. The sound level meter was placed at a residential building along Ward Street.

As shown in **Table 13**, the existing ambient daytime noise levels at the nearest the noise-sensitive residential receptors (Location R1) in the City of Costa Mesa is 40 dBA that would not exceed the City of Costa Mesa's exterior noise standards for residential areas of 55 dBA during the daytime. The existing ambient daytime noise level at the noise-sensitive residential receptors (Location R2) along Ward Street in the City of Fountain Valley is 71 dBA that would exceed the City of Fountain Valley's exterior noise standards for residential areas of 55 dBA during the daytime. The ambient noise levels in the immediate project vicinity are representative of a noisy urban area. All construction noise and haul truck noise calculations prepared for the noise analysis below are located in **Appendix C**.

TABLE 13
SUMMARY OF AMBIENT NOISE MEASUREMENTS

Location, Duration, Existing Land Uses and, Date of Measurements	Measured Ambient Noise Levels (dBA) Hourly L_{eq}
R1 – Residential Uses in Costa Mesa	
December 15, 2017 (2:53 P.M. to 3:08 P.M.)/Friday	40
R2 – Residential Uses in Fountain Valley	
December 15, 2017 (3:24 P.M. to 3:39 P.M.)/Friday	71

Source: ESA, 2017.

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. Noise is defined as unwanted sound; however, not all unwanted sound rises to the level of a potentially significant noise impact. To differentiate unwanted sound from potentially significant noise impacts, the City of Fountain Valley and the City of Costa Mesa have established noise regulations that take into account noise-sensitive land uses. The

following analysis evaluates potential noise impacts at nearby noise-sensitive land uses in each jurisdiction resulting from construction and operation of the proposed project.

Construction

On-Site Construction Noise

Short-term construction noise impacts are related primarily to the use of heavy construction equipment. Construction equipment can be considered to operate in two modes: stationary and mobile. Stationary equipment operates in one location for one or more days at a time, with a fixed-power operation. Mobile equipment moves around a construction site with power applied in cyclic fashion (such as bulldozers, graders, and loaders). Individual pieces of construction equipment anticipated during construction of the proposed project could produce maximum noise levels of 75 dBA to 101 dBA L_{max} at a reference distance of 50 feet from the noise source, as shown in **Table 14**. These maximum noise levels would occur when equipment is operating at full power. The estimated usage factor for the equipment is also shown in Table 14. The usage factors are based on Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) User's Guide (FHWA 2006).

TABLE 14
CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Construction Equipment	Noise Level at 50 Feet (dBA, Lmax)	Estimated Usage Factor, %
Backhoe Loader	79	40%
Compactor (Ground)	83	20%
Concrete Mixer Trucks	79	40%
Cranes	81	40%
Debris Truck	76	20%
Dozer	82	40%
Elevated work platform	75	20%
Forklift	75	10%
Generator Sets	81	50%
Groundwater Pumps	81	50%
Paver	77	50%
Pile Driver (Impact)	101	20%
Skid Steer Loaders	80	40%
Telehandler	75	10%
Trackhoe	80	40%
Trackhoe with hammer attachment	85	50%
Water Trucks	80	10%
Wheel Loaders	80	40%

Source: FHWA, 2006.

Construction equipment would intermittently operate over an 8-hour period. Over the course of a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are being operated concurrently (Appendix C). The proposed project's estimated construction noise levels were calculated for a scenario in which all construction equipment was assumed to be operating simultaneously to the affected receptors to present a conservative impact analysis. The estimated noise levels at the off-site sensitive receptors were calculated using the FHWA's RCNM, and were based on the concurrent operation of a maximum 25 pieces of equipment (see Table 14 and Appendix C) which is considered a worst-case evaluation because the proposed project would use less overall equipment on a daily basis, and as such would generate lower noise levels. The nearest sensitive receptors are single-family residential uses located approximately 500 feet to the east of the project site along the Santa Ana River in the City of Costa Mesa. Single-family residences are located approximately 1,900 feet to the west of the project area along Ward Street in the City of Fountain Valley.

Appendix C lists the pieces of equipment (for a maximum of 25) required for rehabilitation, demolition, and new structure construction activities, along with their distance from the nearest sensitive receptors and estimated noise shielding based on location. The peak day construction noise levels experienced by the off-site sensitive receptors would be up to 47 dBA L_{eq} at the single-family residential uses located to the east of the project area in the City of Costa Mesa and 48 dBA L_{eq} at the single-family residential uses located to the west of the project area in the City of Fountain Valley (see Appendix C). Sensitive receptors (R1) located to the east of the project site in the City of Costa Mesa are fully shielded from the construction site by existing earth berms along the Santa Ana River and such shielding would provide approximately 25 dBA noise reduction from the construction activities. [9] Receptors (R2) located to the west of the project area in the City of Fountain Valley are almost fully shielded from the construction site by existing structures and walls and such shielding is included in the analyses representing a 15 dBA reduction in noise levels.

Under the City of Fountain Valley Noise Ordinance, construction noise would be exempt when it occurs between the hours of 7:00 A.M. and 8:00 P.M., Monday through Friday or 9:00 A.M. and 8:00 P.M. on Saturdays. In addition, under the City of Costa Mesa Noise Ordinance, construction noise would be exempt when it occurs between the hours of 7:00 A.M. and 7:00 P.M., Monday through Friday or 9:00 A.M. and 6:00 P.M. on Saturdays. All of the construction activity would be conducted between the hours of 7:00 a.m. and 5:00 p.m. Monday through Friday. These time periods would comply with the FVMC's and CMMC's allowable construction hours. Therefore, there would not be any conflict with the noise ordinance and potential construction noise impacts would be less than significant.

Off-Site Construction Noise

Construction truck and worker's trips would occur throughout the construction period. Haul trucks would travel on approved truck routes designated within the City of Fountain Valley. Given the project area's proximity to Interstate 405 (I-405), haul truck traffic would take the most direct route to the appropriate freeway ramps. Haul trucks would exit the project area onto north

9 California Department of Transportation, TeNS, Section 5.1.5, September 2013.

on Euclid Street and towards I-405. Haul trucks also would travel Ellis Avenue and Ward Street towards to Freeway I-405 ramps. The haul route will be reviewed and approved by the City.

An estimated maximum of approximately 100 haul truck round trips and 120 worker's vehicle trips would occur per day. Construction related traffic alone would generate noise levels of approximately 60.0 dBA L_{eq} along Euclid Street, Ellis Avenue, and Ward Street (Appendix C). Under the City of Fountain Valley Noise Ordinance, construction noise would be exempt when it occurs between the hours of 7:00 A.M. and 8:00 P.M., Monday through Friday or 9:00 A.M. and 8:00 P.M. on Saturdays. All of the construction activity would be conducted between the hours of 7:00 a.m. and 5:00 p.m. Monday through Friday. Therefore, there would not be any conflict with the noise ordinance and potential construction noise impacts would be less than significant.

Operations

The proposed project would require a nominal increase in OCSD full-time employees for operation and maintenance of rehabilitated and newly constructed facilities. No changes in the number of truck trips associated with chemical deliveries would occur with the proposed project. Similar to existing conditions, the chemical deliveries to Plant No. 1 would be periodic. Operation of the proposed new structures would result in continued onsite chemical use and storage. Once the proposed project is operational, noise levels generated at the project area would mainly occur from the grit pump station. Representative noise levels from an existing pump station at Plant No. 1 were obtained in 2016 (ESA 2018). Pump related noise levels were measured inside of the pump station and outside of the pump station at 5 feet from a louver. A noise level of 80 dBA L_{eq} was measured inside of the pump station and noise level of 66 dBA L_{eq} was measured at 5 feet from the louver outside of the pump station. Based on these measurements, the pump station house with louvers provides a noise level reduction of approximately 14 dBA.

Receptors in the City of Fountain Valley are almost fully shielded from the project area by existing structures and walls and such shielding is included in the analyses representing a 15 dBA reduction in noise levels. Sensitive receptors in the City of Costa Mesa are fully shielded from the project area by existing earth berms along the Santa Ana River and such shielding would provide approximately 25 dBA noise reduction from the operational noise.

Based on a noise level source strength of 66 dBA at a reference distance of 5 feet, and accounting for distance attenuation between 15 and 25 dBA for the City of Fountain Valley and Costa Mesa, respectively, pump related noise would be reduced to 51 dBA at the nearest noise sensitive uses. Further, the grit pump station would be located below-grade, which would provide further shielding of sound up to 14 dBA (similar to pump housing above). As such, pump related noise is anticipated to be around 37 dBA from above-grade, and would not exceed the significance threshold of 40 dBA (the lowest ambient noise level as shown in Table 13). Operation of the project would not expose persons to, or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, Therefore, impacts would be less than significant.

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

Less than Significant Impact. Common sources of vibration impacts from construction activities include; blasting, pile-driving and operation of heavy earth-moving equipment. Sensitive receptors for vibration include structures (especially older masonry structures), people and vibration sensitive equipment. Presently, the State of California, City of Fountain Valley or the City of Costa Mesa does not quantify the level at which excessive groundborne vibration occurs. Groundborne vibration levels resulting from construction activities have been estimated by the Federal Transit Authority (FTA) in its Transit Noise and Vibration Impact Assessment (FTA 2006). The manual provides practical guidance to evaluating vibration impacts from construction activities. The manual establishes numeric thresholds for construction related and transportation related vibration impacts. There are several different methods that are used to quantify vibration impacts. The peak particle velocity (PPV) is defined to describe vibration impacts to buildings. The FTA Guidance Manual determines that potential damage to non-engineered timber and masonry buildings could occur at 0.2 in/s PPV for construction vibration sources. The Peak Particle Velocity levels of vibration impacts are shown in **Table 15**.

TABLE 15
VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

	Approximate PPV (in/sec)				
Equipment	**25 Feet**	**50 Feet**	**100 Feet**	**500 Feet**	**2,100 Feet**
Pile Driver (Impact)	1.518	0.537	0.190	0.017	0.002
Upper range					
Typical	0.644	0.228	0.081	0.007	0.001
Pile Driver (Sonic)	0.734	0.260	0.092	0.008	0.001
Upper range					
Typical	0.170	0.060	0.021	0.0019	0.0002
Large Bulldozer	0.089	0.031	0.001	0.017	0.0001
Loaded Trucks	0.076	0.027	0.0008	0.015	0.0001
Jackhammer	0.035	0.012	0.0004	0.007	0.0005
Small Bulldozer	0.003	0.001	0.00003	0.0006	0.000004

SOURCE: FTA, 2006.

Vibration can result from the use of heavy construction equipment such as an impact pile driver, a dozer, and a loaded truck. As shown in Table 15, the significance threshold of 0.2 in/s PPV that could result in damage to unreinforced buildings would dissipate beyond 25 feet from the operation of a large dozer and 100 feet from the operation of a pile driver. The closest residential uses would be approximately 500 feet from where construction activities would occur. At this distance, the residential uses would be exposed to up to 0.017 in/s PPV to the east of the project site and up to 0.002 in/s PPV to the west of the project site. As described, vibration levels at the sensitive receptor locations would not exceed the vibration impact significance threshold of 0.2 in/s PPV. Potential vibration impacts would be less than significant.

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

Less than Significant Impact. Operation of proposed facilities would only require periodic maintenance, not daily staffing or deliveries. The proposed project would not require a significant increase in OCSD full-time employees for operation and maintenance of rehabilitated and newly constructed facilities.

No changes in the number of truck trips associated with chemical deliveries would occur with the proposed project. Similar to existing conditions, the chemical deliveries to Plant No. 1 would be periodic. Operation of the proposed new structures would result in continued onsite chemical use and storage. Similar to existing storage, chemicals would continue to be stored in aboveground chemical storage tanks. As discussed previously under subsection (b) above, the grit pump station would be located below-grade and would not generate noise levels above the ambient noise levels at nearby noise sensitive receptor locations. Therefore, the operation of proposed facilities would not substantially increase existing operation noise levels within the project vicinity. As such, there would not be a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the proposed project, and impacts would be less than significant.

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. As discussed previously above, the peak day construction noise levels experienced by the off-site sensitive receptors would be up to 47 dBA L_{eq} at the single-family residential uses located to the east of the project area in the City of Costa Mesa and 48 dBA L_{eq} at the single-family residential uses located to the west of the project area in the City of Fountain Valley.

A project would normally have a significant impact on noise levels from construction if the project would exceed the ambient noise levels by 10 dBA or more at a noise-sensitive use. Based on the measured noise levels at the nearest off-site sensitive receptors to the project area, it was determined that construction noise levels would not exceed the ambient noise levels by 10 dBA at the off-site sensitive receptors to the west of the project site in the City of Fountain Valley or to the east of the project site in the City of Costa Mesa. Furthermore, the nearest noise sensitive receptors to the east of the project area would be exposed to up to 47 dBA L_{eq}, which is a low noise level for urban day time environments and would not be considered an excessive increase or nuisance. Furthermore, the temporary noise would be less than 10 dBA L_{eq} greater than the ambient levels measured in the City of Costa Mesa (Table 13). In addition, the nearest noise sensitive receptors to the west of the project area would be exposed to up to 48 dBA L_{eq}, which would not exceed the daytime ambient noise level of 71 dBA L_{eq}. Noise levels of 47-48 dBA can be compared to a quiet urban neighborhood during the day (exterior noise) or a dishwasher running in the next room (interior noise) (CalTrans 2019). Noise levels of this nature would not cause human annoyance or be harmful to sensitive receptors at the closest locations the project site. Furthermore, construction noise levels are exempt from the FVMC and CMMC. Therefore, the proposed project would result in less than significant increases in temporary noise levels.

As discussed previously the proposed project's construction related traffic alone would generate noise levels of approximately 60.0 dBA L_{eq} along Euclid Street, Ellis Avenue, and Ward Street. No noise sensitive receptors would be located along Euclid Street and Ellis Avenue. The single-family residential uses (R2) to the west of the project site are located along Ward Street. Noise levels of up to 60 dBA L_{eq} from construction related traffic would not exceed the ambient noise level of 71 dBA L_{eq} (refer to Table 13) at the single-family residential uses (R2) along Ward Street. As such, construction noise impacts associated with off-site construction vehicles would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The nearest airport to the project area is the John Wayne Airport, located approximately 4 miles to the east. Therefore, the proposed project is not located within an airport land use plan or within 2 miles of a public airport or public use airport. No impact would occur.

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?

No Impact. The project area is not located within the vicinity of a private airstrip. No impacts would occur.

4.14 Population and Housing

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
14. 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, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

The proposed project is located in Orange County, which encompasses approximately 798 square miles of land and is located along the Pacific Ocean between Los Angeles County to the north and northwest, San Bernardino County to the northeast, Riverside County to the east, and San Diego County to the southeast. The County includes 34 incorporated cities that are highly populated and urbanized (County of Orange 2017).

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)?

Less than Significant Impact. The proposed project does not include construction of new homes or businesses that would result in a direct increase in population or create a substantial number of jobs. Construction activities would require temporary employment. The maximum number of construction workers at the project site at once would be 200 workers and these opportunities are expected to be filled by workers within the local economy. Between February 2018 and February 2019, construction jobs reported an overall payroll employment loss of 3,300 jobs. In February 2019, there was an unemployment average of 3.0 percent, County-wide with a drop of 3.2 percent in construction specifically (101,400 persons) (EDD 2019). Given that there was an average of 101,400 persons within the County involved in construction activities, it is reasonable to assume that there are available workers for the construction activities associated with the proposed project. Because the majority of the work force is located in the County which is highly populated, there would be an adequate number of local workers that could be available for construction jobs and could commute to the temporary construction jobs rather than relocate and induce growth in the area.

The proposed project would not increase the facility's treament capacity or require capacity amendments to the facility's NPDES permit. Rather, the proposed project would allow OCSD to continue to provide wastewater treatment services in its service area and to meet forecasted demand and potential growth in the service area, consistent with the District's approved Strategic Plan. The implementation of the proposed project would result in less than significant impacts related to inducement of population growth.

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

No Impact. There are no existing residences on Plant No. 1, and no residences would be condemned or displaced by the proposed project. 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 would not remove housing and would not displace people, necessitating the construction of replacement housing elsewhere. Therefore, no impacts would occur.

4.15 Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
15. PUBLIC SERVICES — Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion

Fire

The Fountain Valley Fire Department provides fire protection within the City (City of Fountain Valley 2018a). The nearest station to the project area is Fire Station 1 located approximately 1.56 miles northwest at 17737 Bushard Street.

Police

The City of Fountain Valley is provided with police protection services by the Fountain Valley Police Department (City of Fountain Valley 2018b). The police station is located 1.2 miles northwest of the project area at 10200 Slater Avenue.

Schools

The project area lies within the Fountain Valley School District (FVSD) (FVSD 2018). The nearest school, the Robert Gisler Elementary School, is located approximately 0.15 mile west of Plant No. 1.

Parks

The project area is not located adjacent to any parks and does not include parkland. The closest park is Ellis Park located .05-mile northwest of the project area.

Environmental Evaluation

Would the project:

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

i) Fire protection?

No Impact. The proposed project would not change existing demand for fire protection services because operation would not result in a substantial increase in employees or population. Therefore, the proposed project would not substantially increase the need for new fire department staff or new facilities and no impacts would occur.

ii) Police protection?

No Impact. The proposed project does not include new homes or businesses that would require any additional services or extended response times for police protection services beyond those required with the existing on-site uses. Therefore, the Fountain Valley Police Department would not be required to expand or construct new police stations to serve the proposed project. No impacts would occur with the proposed project because additional fire protection facilities would not be needed.

iii) Schools?

No Impact. The student generation rates within FVSD would not be substantially affected or altered by the redevelopment of the proposed project. The proposed project would not affect local school enrollment. No school facilities would be impacted by the proposed project. In addition, no construction impacts would occur with the proposed project because school facilities would not be needed.

iv) Parks?

No Impact. The proposed project would not interfere with or have adverse impacts on parks. The proposed project would not involve new housing or employment opportunities that would prompt the need for new parks. The project area is located adjacent to the Santa Ana River; however, construction and operation of the proposed project would not impact the use of nearby recreational uses.

v) Other public facilities?

No Impact. The proposed project would not introduce inhabitants to the project area that would require additional public facilities. No impacts would occur with the proposed project because public facilities would not be needed.

4.16 Recreation

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

Discussion

Orange County Parks (OC Parks) maintains the parks and provides recreational services for the project area. The nearest recreational facility is the Santa Ana River Trail located adjacent to the project area.

Environmental Evaluation

Would the project:

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

No Impact. The proposed project would not directly introduce new residents within the City. Therefore, the proposed project would not increase the use of these existing recreational facilities within the City and would result in no impact to the physical deterioration of recreational facilities.

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

No Impact. The implementation of the proposed project would not require recreational facilities to serve the project. Therefore, the proposed project would not result in an adverse physical effect on the environment from the construction or expansion of additional recreational facilities because the proposed project would not require recreational facilities.

4.17 Transportation and Traffic

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

Discussion

The regional transportation system of the project area is comprised of an interconnected network of roadways, local transit systems, and pedestrian and bicycle facilities. Major regional roadways include the Interstate-405 (I-405) to the northeast, Beach Boulevard [State Route 39 (SR-39)] to the west, Costa Mesa Freeway [State Route 55 (SR-55)] to the east and Pacific Coast Highway (PCH) to the south. Ward Street west of Plant No.1 is classified as a secondary arterial.

- **Interstate 405 (I-405)**, also known as the San Diego Freeway, is a major north-south freeway in western Orange County that provides regional access to coastal cities in Orange and Los Angeles counties. It crosses the northern portion of the City.
- **Beach Boulevard (SR-39)** is an eight lane north-south principal arterial designated as a "Smart Street Corridor" by the Orange County Transportation Agency. Beach Boulevard begins at PCH in the City of Huntington Beach and extends north through the cities of Westminster, Garden Grove, Buena Park, and Anaheim. Within City limits, Beach Boulevard has up to approximately 76,000 ADTs and as few as 12,000 ADT as the roadway approaches PCH (Stantec 2017).

Local Roadways

The proposed project is located south of I-405. The roadways that provide local access to Plant No. 1 are below.

Ward Street is a four lane north-south secondary arterial. It extends from Yorktown Avenue in the City of Huntington Beach to Warner Avenue in the City of Fountain Valley. Ward Street has a Class II bike lane in each direction and a posted speed limit of 45 miles per hour.

Ellis Avenue is a four lane east-west facility. It extends from Euclid Street in the City of Fountain Valley to Beach Boulevard in the City of Huntington Beach.

Traffic Volumes

Based on a review of traffic data from the Fountain Valley Crossings Specific Plan Transportation Impact Analysis Final Report and the City of Costa Mesa General Plan Update Traffic Analysis, existing and future projected peak hour traffic volumes for intersections anticipated to be used by construction employees and by trucks for construction and operational activities were obtained. Within the City of Fountain Valley, the nearest designated truck routes to Plant No. 1 is Euclid Avenue on the north side of I-405 and Brookhurst Street to the east.

Public Transportation

The project vicinity is served by the Orange County Transportation Authority (OCTA) and local bus service. Currently, bus routes are located along Brookhurst Street, Ward Street, and Ellis Avenue in the City of Fountain Valley.

Bicycle Transportation

The project vicinity is served by various bicycle paths. Currently, the City of Fountain Valley has bike lanes along Ellis Avenue, Ward Street and Garfield Avenue.

TABLE 16
EXISTING AND FUTURE PROJECTED PEAK HOUR TRAFFIC VOLUMES

	Existing 2014/2015 Peak Hour Traffic Volumes		Future 2035/2040 Projected Peak Hour Traffic Volume	
Intersections	**AM**	**PM**	**AM**	**PM**
City of Fountain Valley[1]				
Euclid Avenue/I-405 Ramp	3,329	3,672	4,272	4,736
Ellis Avenue/I-405 Ramp	3,492	3,357	3,802	3,632
Ellis Avenue/Ward Street	3,352	3,226	4,257	4,058
Brookhurst Street/Talbert Avenue	4,509	5,172	5,021	5,734
City of Costa Mesa[3]				
Victoria Avenue/Placentia Avenue	3,990	4,450	4,270	4,840
Victoria Avenue/Harbor Boulevard	4,020	4,960	4,680	5,720

1 Fehr & Peers. 2017. Fountain Valley Crossings Specific Plan Transportation Impact Analysis Final Report. Available at: http://www.fountainvalley.org/DocumentCenter/View/5841, accessed on September 8, 2017. Existing volumes are 2015 and future volumes is 2035.

2 Stantec Consulting Services Inc. 2017. General Plan Circulation Update, City of Huntington Beach, CA. Available at: http://www.huntingtonbeachca.gov/files/users/planning/Volume-III-Appendix-B-Circulation-Traffic-Study.pdf, accessed on September 8, 2017. Existing volumes are 2014 and future volumes is 2040.

3 Stantec Consulting Services Inc. 2016. City of Costa Mesa General Plan Update Traffic Analysis. Available at: http://www.costamesaca.gov/ftp/generalplan2015-2035/Appendix%20C%20-%20Traffic%20Study.pdf, accessed on September 8, 2017. Existing volumes are 2015 and future volumes is 2035.

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. Access to the project would primarily utilize the I-405 Freeway, the Euclid Street off-ramp, Ellis Avenue, Ward Street and Garfield Avenue. Project construction traffic would utilize the entrance along Garfield Avenue. No detours, lane closures, or road closures are anticipated as a result of the proposed construction activities.

Direct traffic impacts, such as local congestion and disruption of traffic flow from construction of the proposed project would be temporary. Construction activities that would generate off-site traffic would include the delivery of construction vehicles and equipment to the project area, the daily arrival and departure of construction workers, the off-hauling of excavated soil, and the delivery of materials throughout the construction period. The estimated haul truck traffic would vary depending on the construction activity. The haul trucks would exit the staging area and travel approximately 50 feet to Ellis Avenue and off to local roadways and highways.

Construction activities would require crews ranging from 150 to 200 construction workers depending on the construction phase. Each construction worker is assumed to commute to Plant No. 1. It is anticipated that no more than five truck deliveries of construction material would occur each day. Therefore, a maximum of 205 vehicles would travel to Plant No. 1 during construction activities which would represent 410 one-way average daily trips. Furthermore, to account for the size of the truck used for the truck deliveries, it is assumed that each of the 10 one-way truck trips result in a passenger car equivalent (PCE) ratio of 2:1 which results in a worst-case 100 one-way average daily PCE trips (80 one-way construction worker trips and 20 one-way truck PCE trips). This worst-case average daily trip volume would occur periodically for approximately 4.5 years during construction activities. Operational activities would not significantly increase employee trips because a nominal addition of OCSD employees would be needed with the proposed project.

The maximum average daily PCE trips traveling to and from Plant No. 1 associated with the proposed project is 410 trips. Peak hour trips are commonly estimated at approximately 10 percent of average daily trips. Therefore, there could be approximately 41 peak hour trips to/from Plant No. 1. As shown in Table 16, all analyzed intersections currently have at least 3,000 peak hour trips. Therefore, the addition of 41 peak hour trips would represent less than 0.8 percent of the peak hour trips at the intersections. Therefore, the proposed project would not exceed the significance criteria of contributing one percent or more to peak hour intersection trips.

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.

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?

No Impact. Implementation of the proposed project would not significantly increase employees traveling to the project area. Employees currently provide periodic maintenance activities at the existing facilities. These maintenance activities would continue with the proposed project. Therefore, no increase in long-term traffic would occur to the project area.

Congestion management programs (and level of service standards established by congestion management agencies) are intended to monitor and address long-term traffic conditions related to future development that generate permanent (ongoing) traffic increases, and do not apply to temporary impacts associated with construction projects. Proposed project construction would be transitory in nature, and effects on roadway operations would be temporary (see discussion a) above). Because the proposed project would not increase long-term traffic volumes to the project area, no long-term impacts to the levels of service on roadways would occur.

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. The nearest airport to the project area is John Wayne Airport, a public airport approximately 4.25 miles southeast 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)?

No Impact. The proposed project would be implemented entirely within Plant No. 1 and does not include the construction or design of any roadway infrastructure that would cause a safety risk to vehicle operations. Neither construction nor operation of the proposed project would adversely alter the physical configuration of the existing roadway network serving the area, and would not introduce unsafe design features. The proposed project also would not introduce uses (types of vehicles) that are incompatible with existing uses already served by the area's road system. There would be no impact.

e) Result in inadequate emergency access?

No Impact. Onsite operational activities would involve minimal and infrequent traffic in and out of the project area similar to the traffic that currently occurs for the existing facilities at Plant No. 1. The proposed project would not result in interference with emergency response access. The proposed project would not impact long-term 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?

No Impact. The proposed project would not conflict with adopted policies, plans, or programs related to public transit or alternative modes of transportation. One local bus route is located near the proposed project (City of Fountain Valley 2008). Route 37 serviced by OCTA runs north of the project area on Ellis Avenue and Ward Street (OCTA 2018). The nearest bus stop is located approximately 140 feet north of the north side of Plant No. 1 along Ellis Avenue and Mount Langley Street (OCTA 2017). The Santa Ana River Trail allows pedestrians to travel along the Santa Ana River just adjacent to the project area; however, all construction and operation would take place within Plant No. 1 and would not impact travel along this trail or the bus route. No impacts would occur.

4.18 Tribal Cultural Resources

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

Discussion

Tribal Cultural Resources Definition

Tribal cultural resources are defined 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 of Historical Resources (California Register) or included in a local register of historical resources, or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant. A cultural landscape that meets these criteria is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. Historical resources, unique archaeological resources, or non-unique archaeological resources may also be tribal cultural resources if they meet these criteria.

Natural Setting

The project is located in the City of Fountain Valley, Orange County, in southern California. The topography of Orange County includes a combination of mountains, hills, flatlands, and shorelines. Urbanized Orange County is predominantly within an alluvial plain, semi-enclosed by the Puente and Chino Hills to the north, the San Joaquin Hills to the south, and the Santiago Foothills and the Santa Ana Mountains to the east. The Puente and Chino Hills, which identify the northern limit of the plains, extend for 22 miles and reach a peak height of 7,780 feet. To the east and southeast of the plains are the Santa Ana Mountains, which have a peak height of 5,691-feet. The Santa Ana River is located adjacent to and just east of the proposed project area.

The City of Fountain Valley is located in the Santa Ana Valley-Capistrano Valley Province, "which is a lowland strip separating the coastal hills from the Santa Ana Mountains" (City of Fountain Valley 2015). The majority of Fountain Valley is located on a gentle sloping flood zone. The soils in the proposed project area consist primarily of alluvial sediments with interbedded silts and sands (Fountain Valley General Plan 1995:5-3).

Ethnographic Setting

The project is located at the southern extent of Gabrielino-Tongva territory, near the boundary with the Juaneño, or more properly Acjachemen, to the south. Traditionally, the boundary between the two is identified as either Aliso Creek or the drainage divide to the north of the creek. Both are included here.

Gabrielino-Tongva

Prior to European colonization, the Gabrielino-Tongva, a Takic-speaking group, occupied a diverse area that included: the watersheds of the Los Angeles, San Gabriel, and Santa Ana rivers; the Los Angeles basin; and the islands of San Clemente, San Nicolas, and Santa Catalina (Kroeber 1925). The Gabrielino-Tongva are reported to have been second only to the Chumash in terms of population size and regional influence (Bean and Smith 1978).

The Gabrielino-Tongva were hunter-gatherers and lived in permanent communities located near the presence of a stable food supply. Community populations generally ranged from 50-100 inhabitants, although larger settlements may have existed. The Gabrielino-Tongva are estimated to have had a population numbering around 5,000 in the pre-contact period, with many recorded villages along the drainages mentioned above and in the Los Angeles basin proper (Kroeber 1925).

Beginning with the Spanish Period and the establishment of Mission San Gabriel Arcángel, Native Americans throughout the Los Angeles area suffered severe depopulation and their traditional culture was radically altered. Nonetheless, Gabrielino-Tongva descendants still reside in the greater Los Angeles and Orange County areas and maintain an active interest in their heritage.

Juaneño-Acjachemen

The Juaneño or Acjachemen, also Takic-speaking, occupied a more restricted area extending across southern Orange County and northern San Diego County. Juaneño territory extended along the Pacific coast from midway between Arroyo San Onofre and Las Pulgas Canyon in the south to Aliso Creek in the north, and continued east into the Santa Ana Mountains from Santiago Peak in the northwest to the headwaters of Arroyo San Mateo in the southeast (Kroeber 1925). The Juaneño were bounded by the Gabrielino-Tongva to the north, and the Luiseño to the east and south.

The Juaneño-Acjachemen, like the Gabrielino-Tongva, subsisted on small game, coastal marine resources, and a wide variety of plant foods such as grass seeds and acorns. Their houses were conical thatched reed, brush, or bark structures. The Juaneño inhabited permanent villages centered around patrilineal clans, with each village headed by a chief, known as a nu (Kroeber 1925; 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).

The Juaneño-Acjachemen population was estimated to have numbered approximately 1,000 at the time of European contact. Beginning with the Spanish Period and the establishment of Mission San Juan Capistrano, the Juaneño-Acjachemen suffered severe depopulation and their traditional culture was radically altered. Nonetheless, descendants still reside in the Orange County area and maintain an active interest in their heritage.

Previous Native American Consultation

On May 2, 2017, OCSD notified the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notification of projects within the OCSD's service area, pursuant to Public Resources Code Section 21080.3.1. Letters were sent via certified mail to Mr. Andrew Salas, Chairman for the Gabrieleño Band of Mission Indians – Kizh Nation; Ms. Joyce Stanfield Perry, Tribal Manager for the Juaneño Band of Mission Indians/Acjachemen Nation; and Anthony Morales, Chief for the San Gabriel Band of Mission Indians. The letters included a description of projects located on OCSD Plant No. 1 and Plant No. 2. The letters were for a separate set of projects than the proposed project, but covers Plant No. 1 in the City of Fountain Valley which is where the proposed project is located.

On May 18, 2017, Mr. Salas replied via email and provided a response letter pertaining to the AB 52 consultation. Mr. Salas indicated that the letter was a request for consultation and that the OCSD Plant No. 1 lies within their ancestral territory and more specifically "within a sensitive area and may cause a substantial adverse change in the significance" of tribal cultural resources. Furthermore, Mr. Salas also mentioned that their "Elder Committee & tribal historians are the experts for [their] Tribe and are able to provide a more complete history…regarding the location of historic villages, trade routes, cemeteries and sacred/religious sites in the project area".

On September 29, 2017, the OCSD received a response back from Mr. Salas Office Administrator, and a teleconference meeting was conducted on October 18, 2017 and attended by Andy Salas, Kizh Gabrielino Band of Mission Indians Tribal Chairman, and Matt Teutimez, Kizh Gabrielino Band of Mission Indians, OCSD Staff and ESA archaeologist Sara Dietler. During the meeting, representatives of the Gabrieleno Band of Mission Indians explained the reasons for their concerns at the site stemming from its proximity to historic villages and resource gathering areas near freshwater resources along the coast. In summary, Mr. Salas and Mr. Teutimez stated, that the project location was a marsh area during prehistoric times, with three large villages that overlapped the Bolsa Chica and Huntington Beach areas. These villages include *Lopuuknga, Moyogna, and Mutuucheynga* Native Americans relied on the Santa Ana River, as it provided food and plant resources and was along a nearby trading route located near the modern day Brookhurst Boulevard and Beach Boulevard and leading up to the Azusa foothills. During the Rancho period, this area was part of the Rancho Los Nietos land grant, owned by Manuel Nietos (Mr. Salas' great uncle). Native Americans worked and lived on the ranches, although much of the tribal land was restricted and tribal history was lost over time. The rerouting of the Santa Ana River in the 1930's, and the backfilling of the marshes and wetlands in the 1950's, could indicate that there are cultural resources that are present in that fill pushed up from the marshes. Or the fill and development on the site could be capping archaeological sites that could be unearthed during ground disturbance. These materials are of a high value to the tribe.

Mr. Salas and Mr. Teutimez further explained that although they are not aware of the existence of any known tribal cultural resources within Plant No. 1 or Plant No. 2, they are concerned about the sensitivity of the site based on the known history and other sites in the area. OCSD agreed to remain in contact with the tribe as projects were implemented, and noted that Native American monitoring would be required during any excavations within the project area.

Current Native American Consultation

On October 11, 2018 and October 16, 2018, OCSD notified the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notification of projects within the OCSD's service area, pursuant to Public Resources Code Section 21080.3.1. Letters were sent via certified mail to Mr. Andrew Salas, Chairman for the Gabrieleño Band of Mission Indians – Kizh Nation and Anthony Morales, Chief for the San Gabriel Band of Mission Indians on October 11th; and Ms. Joyce Stanfield Perry, Tribal Manager for the Juaneño Band of Mission Indians/Acjachemen Nation on October 18th. The letters included a description of the proposed project located on OCSD Plant No. 1.

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(k)

No Impact. No tribal cultural resources have been identified within the project area. Results provided by the NAHC on September 1, 2017 indicated that the SLF search yielded negative results. OCSD conducted consultation with tribal representatives from the Gabrieleño Band of Mission Indians – Kizh Nation in October 2017, and although a high sensitivity was expressed, no known tribal cultural resources were identified as a result of the consultation (ESA 2018). Therefore, the implementation of the proposed project would result in no impacts to known tribal cultural resources.

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.

No Impact. See response a), above.

4.19 Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
18. UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications, 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 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?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

Water Facilities and Supply

Water distribution service within the City of Fountain Valley is provided by the Fountain Valley Water Utility (FVWU), which operates as a division of the City of Fountain Valley Public Works Department. The FVWU operates two 5-million-gallon storage and distribution reservoirs at two sites with a combined capacity of ten million gallons. In addition, the water distribution system includes 202 miles of distribution piping, approximately 17,131 service connections, and 2,050 fire hydrants (City of Fountain Valley 2016).

The FVWU receives its water from three main sources, recycled water from Orange County Water District's (OCWD) Green Acres Project (GAP), local well water from the Lower Santa Ana River Groundwater basin, which is managed by the OCWD, and imported water from the Municipal Water District of Orange County (MWDOC). MWDOC is Orange County's wholesale supplier and is a member agency of the Metropolitan Water District of Southern California (Metropolitan). The FVWU implements various management measures, a water shortage contingency plan, and various water conservation programs in order to ensure adequate water supply through the 2040 planning year (City of Fountain Valley 2016).

Wastewater Facilities

The FVWU operates and maintains the local sewer collection pipes that feed into OCSD's trunk sewer system to convey wastewater to OCSD's treatment plants. FVWU's sewer system includes 133 miles of sewer lines, 2,600 manholes and one lift station (City of Fountain Valley 2016).

Orange County Sanitation District

OCSD is responsible for collecting, treating, disposing, and recycling wastewater from residential, commercial, and industrial sources for more than 2.6 million residents within a 471 square mile service area located in northern and central Orange County. OCSD's service area includes 20 cities, 4 special districts, and the County. It operates the third largest wastewater system on the West Coast and operates 396 miles of sewers, 15 pumping stations, and two treatment plants. OCSD has joined the OCWD in recycling wastewater by developing the Groundwater Replenishment System which is a water purification project.

OCSD currently treats approximately 188 million gallons per day (mgd) of wastewater at two treatment plants; Plant No. 1 located in the City of Fountain Valley and Plant No. 2 located in Huntington Beach. Plant No. 1 treats wastewater generated by the northern portion of Huntington Beach and the other served cities, and Plant No. 2 treats the remainder of the City's sewage. Plant No. 2 provides both advanced primary and secondary treatment which is then discharged into the ocean disposal system. Plant No. 2 has a current average flow of 74 mgd. Approximately 130 mgd of secondary treated effluent from Plant No. 1 is diverted to the OCWD's Groundwater Replenishment System for further treatment and discharge to spreading basins, reclaimed water use and groundwater barrier protection.

Storm Drainage Systems

The City of Fountain Valley storm drainage system is operated by the cities' Public Works Departments and the OCFCD. The storm drainage system protects residents and development from flooding by removing water runoff from streets and transporting it to the ocean. OCFCD owns, operates, and maintains the region's flood control facilities while the cities' Public Works Departments are responsible for their own sub-regional and local drainage facilities. Recent improvements to the regional storm drainage system have increased capacity to accommodate a 100-year storm event.

Plant No. 1 is characterized by relatively flat topography and have internal drainage systems. The plant-wide internal drainage systems are designed to collect and treat stormwater and collect wastewater and chemical spills from the treatment facilities within each site. Stormwater runoff is currently captured, treated, and disposed through the ocean outfall.

Solid Waste Management

The cities of Fountain Valley Public Works Department is responsible for weekly residential and commercial trash collection services and contracts with Rainbow Disposal Company, Inc, which is currently associated with Republic Services (Republic Services 2017; City of Fountain Valley 2017a). All trash collected by the cities refuse services are sorted and processed at a Materials Recovery Facility (MRF) within the City of Huntington Beach. The Rainbow Disposal Company/Republic Services operates a MRF located at 17121 Nichols Street with a design

capacity of approximately 2,800 tons per day (tpd). Non-recyclable materials and solid waste are then transported to the appropriate landfill.

The Orange County Integrated Waste Management Department (OCIWMD) owns and operates three active landfills serving the Orange County region. These include the Frank R. Bowerman Landfill (11002 Bee Canyon Access Road, Irvine); Olinda Alpha Landfill (1942 N. Valencia Avenue, Brea), and the Prima Deshecha Landfill (32250 La Pata Avenue, San Juan Capistrano). The Olinda Alpha Landfill and the Prima Deshecha Landfill are open to the public while the Frank Bowerman Landfill is for commercial use only. All three landfills are permitted as Class III landfills. Class III landfills accept only non-hazardous municipal solid waste for disposal; no hazardous or liquid waste can be accepted. **Table 17** describes the maximum permitted capacity of the serving landfills.

TABLE 17
CAPACITY OF ORANGE COUNTY LANDFILLS

Landfill	Daily Maximum (tons)	Maximum Capacity (cubic yards)	Remaining Capacity (cubic yards)	Anticipated Closure Date
Frank R. Bowerman	11,500	266,000,000	205,000,000	2053
Olinda Alpha	8,000	148,800,000	34,200,000	2021
Prima Deshecha	4,000	172,900,000	87,384,799	2067

SOURCE: CalRecycle, 2008; CalRecycle, 2014; CalRecycle, 2005

The landfill closest to the project area is the Frank R. Bowerman Landfill, a 725-acre, non-hazardous, municipal solid waste landfill located approximately 13 miles northeast of the project area. The Frank R. Bowerman Landfill is permitted to receive 11,500 tpd, receives a daily average of approximately 6,800 tpd (Orange County Waste & Recycling 2017; City of Fountain Valley 2017b), and is scheduled to close in the year 2053 (Orange County Waste & Recycling 2017). The landfill is subject to regular inspection by state regulatory agencies such as the California Department of Resource Recycling and Recovery (CalRecycle), the California Regional Water Quality Control Board (RWQCB), and the South Coast Air Quality Management District (SCAQMD).

Environmental Evaluation

Would the project:

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

No Impact. During construction of the proposed project, a minimal amount of wastewater would be generated by construction workers and collected by portable toilet facilities. All waste generated in portable toilets would be collected by a City-permitted portable toilet waste hauler and appropriately disposed of at one of the liquid waste disposal stations. These waste disposal stations have been appropriately permitted by the RWQCB. In addition, surface water generated

by storms or by construction activities would be collected by the onsite drainage system and directed to the onsite wastewater treatment facilities.

During operation of the proposed project, the facilities themselves would not generate wastewater, and therefore would not exceed wastewater treatment requirements. In addition, surface water drainage at Plant No. 1 would continue to be collected and conveyed to the treatment facilities. All facilities on-site would be in compliance with permit conditions under RWQCB Order R-8-2004-002, and subsequent amendment R8-2008-0058. Compliance with the permit conditions would ensure that all RWQCB requirements would not be exceeded. Therefore, the implementation of the proposed project would result in no impacts related to the exceedance of wastewater treatment requirements.

b) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications, the construction of which could cause significant environmental effects?

No Impact. The proposed project would rehabilitate existing process facilities at Plant No. 1, demolish the Metering and Diversion Structure, Headworks No. 1 Structure, Power Building 3A, Chlorine Building, Headworks Odor Control structure, and multiple chemical facilities, and construct new structures and a new tunnel extension to the new Power Building 3. As described previously, the proposed project would not require new or expanded water or waste water facilities. Additionally, the proposed project would not require the expansion of any off-site stormwater drainage facilities. The existing plant-wide storm water drainage system has sufficient capacity for the rehabilitated and new facilities and would not require expansion as a result of the proposed project. No improvements are currently planned to support the implementation of new facilities or rehabilitation of existing facilities, that require new electric power, natural gas, or telecommunications facilities. (See also Section 4.6, Energy above.) Therefore, implementation of the proposed project would result in no environmental impacts from construction of additional water, wastewater, storm water drainage, electric, natural gas, or telecommunication facilities because no new facilities would be required.

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. Refer to Question b), above.

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

Less than Significant Impact. Water needs of the project during construction would be relatively minor and temporary. Water from Plant No. 1 could be used for various construction related activities, such as dust suppression. After construction, the proposed project would not include uses that would increase the demand for water. Overall water use is not expected to change as a result of this project. The proposed project would have sufficient water supplies available and less than significant impacts 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. As discussed above, operation of the proposed project would not generate any wastewater. OCSD would not be required to provide future capacity as a result of proposed project implementation. The proposed project has adequate capacity to serve current treatment demands. No impacts 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 the removal of approximately 12,500 cubic yards of material during demolition of the 10 existing structures. The generation of material from proposed project implementation is considered minimal compared to the remaining capacity at the nearest landfill which is Frank R. Bowerman. The Frank R. Bowerman Landfill is located at 11002 Bee Canyon Access Road in Irvine. The landfill is permitted to accept up to 11,500 tons per day and is projected to have capacity until 2053 (Orange County Waste and Recycling 2017). Because the proposed project would only generate construction waste temporarily and no long-term waste would be generated, the implementation of the proposed project would result in less than significant impacts on daily permitted capacity of the Frank R. Bowerman Landfill.

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

No Impact. The proposed project would comply with all federal, State, and local statutes and regulations related to solid waste, including the California Integrated Waste Management Act and City of Fountain Valley requirements for solid waste generated during the construction process. No impacts would occur.

4.20 Wildfire

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
20. Wildfire—If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risk, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Environmental Evaluation

Would the Project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. As discussed in response to Question 4.9(g), Hazards and Hazardous Materials, implementation of the proposed project is not anticipated to substantially impair an adopted emergency response plan or evacuation plan because all proposed facilities would be within the boundaries of the Plant No. 1 property. Construction activities would not interfere with emergency response access to the project vicinity. No impacts would occur.

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

No Impact. As discussed in response to Question 4.9(h), Hazards and Hazardous Materials, the project area is fully developed with pavement and facilities, and is not located within a fire safety hazard zone. Further, the project area is not located within a valley or somewhere susceptible to prevailing winds, and the project area is flat and does not contain slopes. Therefore, implementation of the proposed project would not construct or operate facilities within an area vulnerable to wildland fires, and would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. No impacts would occur.

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

No Impact. The proposed project would not result in the installation of permanent roads, fuel breaks, emergency water sources or new power lines. Rehabilitation and construction activities of new structure include various piping and electrical controls that may require maintenance. However, as described previously, the project facilities would be implemented within a developed area and not within a fire hazard safety zone. Therefore, implementation of utilities within the already developed Plant No. 1 property, would not result in temporary or ongoing impacts to the environment.

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

No Impact. As discussed in Sections 4.7, Geology, Soils and Seismicity, and 4.10, Hydrology and Water Quality above, the project would not result in increased drainage or runoff that could contribute to landslide or flooding impacts. No impact would occur.

4.21 Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
21. MANDATORY FINDINGS OF SIGNIFICANCE —				
a) Does the project 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) Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

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 Incorporated. The proposed project would not degrade the quality of the environment or substantially affect populations or communities of fish or wildlife or their habitat, reduce the number or restrict the range of rare or endangered plants or animals, or involve the removal of trees. The proposed project would involve aboveground rehabilitation and replacement of various waste water treatment facilities and temporary ground disturbance activities during demolition. Common, urban-adapted avian species could nest in landscape vegetation located adjacent to the project area and implementation of the proposed project could directly or indirectly impact nesting birds, if construction activities occur during the breeding season (generally defined as February 15 to August 31 for songbirds and January 15 to August 31 for raptors). As such, impacts to nesting birds is considered a potentially significant impact which would require mitigation. Mitigation Measure BIO-1 has been included to reduce impacts to nesting birds to less than significant by requiring identification and avoidance of active nests (and an appropriately-sized buffer) if it is infeasible to schedule construction outside the avian nesting season.

Further, it is not anticipated that any cultural resource would exist due to the area being previously disturbed during the construction of the original plant. If ground disturbance activities extend more than two feet below ground surface, there is a possibility of construction activities resulting in significant impacts to archaeological and paleontological resources. Mitigation Measures CUL-1 through CUL-8 have been included to reduce potential impacts to cultural resources to less than significant. The proposed project would not eliminate important example of 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)?

Less than Significant with Mitigation Incorporated. The proposed project would not result in potentially significant project-level impacts after mitigation. Limited cumulative developments are proposed in the vicinity of the project site. The implementation of the proposed project would result in potential significant impacts related to air quality (potential construction health effects on sensitive receptors), biological resources (potential for nesting species when construction occurs), and cultural resources (potential impacts on unknown archaeological resources, paleontological resources and human remains if ground disturbance occurs below two feet from ground surface). Mitigation measures are provided for air quality, biological resources, and cultural resources so that impacts would be less than significant. The implementation of these mitigation measures would also reduce any project contribution to cumulative impacts to less than cumulatively considerable. The proposed project would also result in less than significant and no impacts to many of the environmental categories such as aesthetics, agriculture, geology/soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, utilities and service systems and energy. The implementation of the proposed project would nominally contribute to cumulative impacts on these environmental categories, and the project's contribution would be less than cumulatively considerable.

c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant Impact. Construction of the proposed project would not result in substantial adverse effects, either direct or indirect, on human beings. The project would provide important public utility infrastructure improvements that would improve safety and efficiency of wastewater treatment and disposal for the entire region. The improvement to the public utility would ensure that environmental impacts to public health and water quality would be minimized. Impacts to human beings would be less than significant.

SECTION 5
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