Public Review Draft

JB LATHAM TREATMENT PLANT FACILITY IMPROVEMENTS PACKAGE B FINAL DESIGN

Initial Study/Mitigated Negative Declaration

Prepared for
South Orange County Wastewater Authority

May 2018

ESA

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JB LATHAM TREATMENT PLANT FACILITY IMPROVEMENTS PACKAGE B FINAL DESIGN

Initial Study/Mitigated Negative Declaration

1 Introduction

The South Orange County Wastewater Authority (SOCWA) proposes improvements to their JB Latham Treatment Plant (JBLTP). The JBLTP is a conventional activated sludge, secondary treatment facility owned and operated by the SOCWA on behalf of the four member agencies (Moulton Niguel Water District, South Coast Water District, City of San Juan Capistrano, and Santa Margarita Water District).

1.1 Statutory Authority and Requirements

In accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Sections 21000–21177) and pursuant to Section 15063 of Title 14 of the California Code of Regulations (CCR), SOCWA, acting in the capacity of Lead Agency, is required to undertake the preparation of an Initial Study (IS) to determine if the proposed project would have a significant environmental impact. If a Lead Agency finds that there is no 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 find that the project would not have a significant effect on the environment and must prepare a Negative Declaration or Mitigated Negative Declaration (MND) for that project. Such determination can be made only if "there is no substantial evidence in light of the whole record before the Lead Agency" (Section 21080(c), Public Resources Code).

The environmental documentation prepared in accordance with CEQA is intended as an informal document undertaken to provide an environmental basis for subsequent discretionary actions upon the project. The resulting documentation is not a policy document and its approval and/or certification neither presupposes nor mandates any actions on the part of those agencies from whom permits and other discretionary approvals would be required. The environmental documentation and supporting analysis is subject to a public review period. During this review, public agency comments on the document should be addressed to the SOCWA. SOCWA 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 SOCWA Board of Directors.

1.2 Purpose

Acting as the CEQA Lead Agency, SOCWA 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 15070 to 15075 of the CEQA Guidelines of 1970 (as amended) and CCR, Title 14, Division, Chapter 3. 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.

1.3 Incorporation by Reference

Documents relating to this IS/MND have been cited and incorporated, in accordance with Sections 15148 and 15150 of the CEQA Guidelines. This incorporation eliminates the need for inclusion of voluminous engineering and technical reports within the IS/MND. The information presented herein for the proposed project is summarized from the *Final JVLTP Package B Planning, Technical Memorandum No. 1 Liquid Treatment Train Analysis* (Carollo, 2017).

2 Project Description

2.1 Project Location and Setting

The proposed project would occur entirely within the existing JB Latham Treatment Plant (JBLTP) Facility, located in southern Orange County at 34156 Del Obispo Street in the City of Dana Point, California (**Figure 1** and **Figure 2**). The existing JBLTP site is located in an urbanized area. North of the site is Del Obispo Park that includes baseball fields, tennis courts, handball courts, basketball court, picnic tables, playground, and open grassy area. Also north of the project site is the Dana Point Community Center. West of the site is Del Obispo Street and a residential community with one and two story homes. The community is elevated above Del Obispo Street and the site. To the south is a recently graded area that is under construction for residential condominiums. Further to the south is Doheny Park Plaza adjacent to Pacific Coast Highway. To the east is San Juan Creek that has a width of approximately 260 feet. San Juan Creek Trail is located along the western bank of the San Juan Creek adjacent to the site. East of San Juan Creek is an industrial area.

2.2 Description of Project Elements

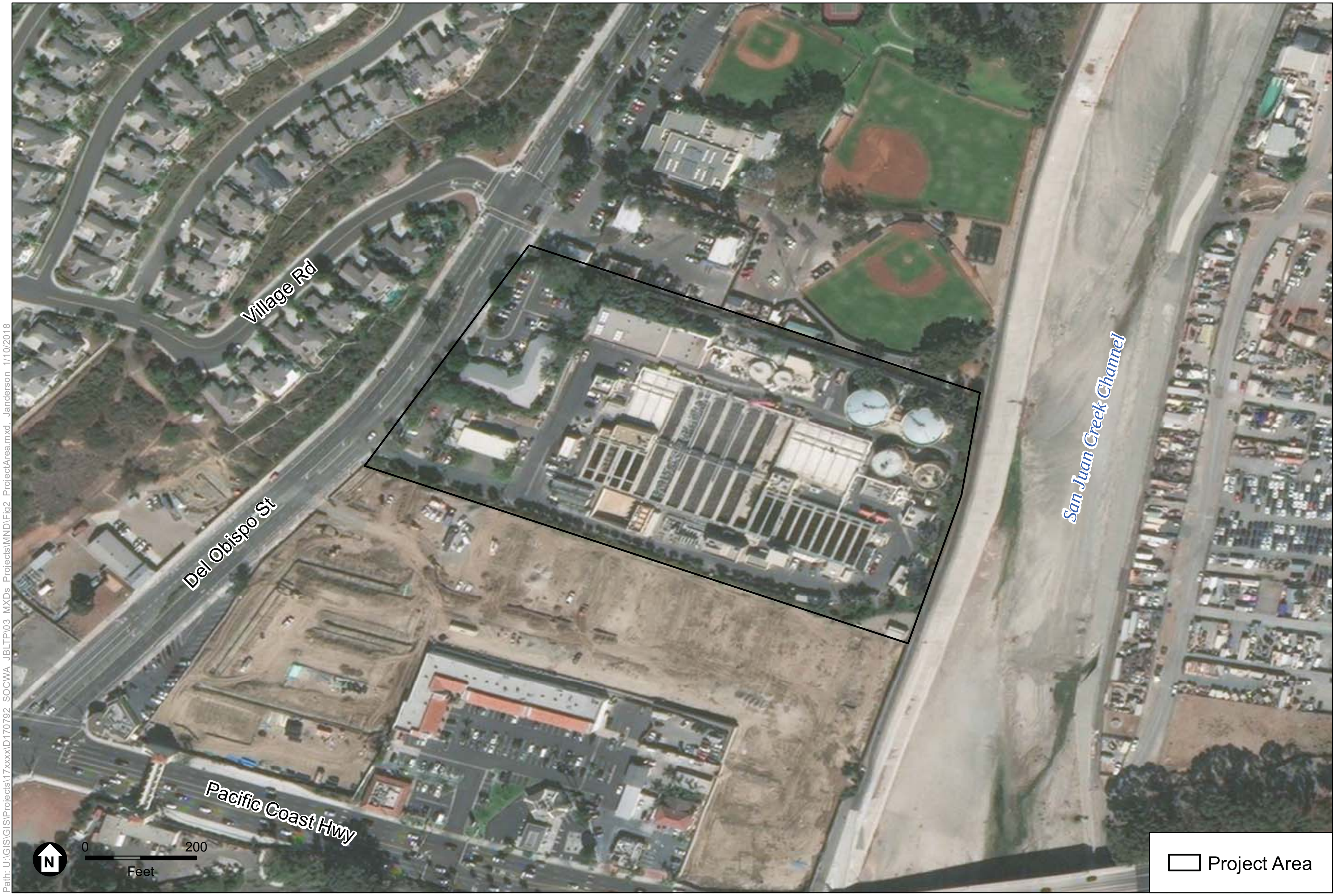
The JBLTP is a conventional activated sludge, secondary treatment facility owned and operated by the SOCWA. The proposed improvements are identified below and include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition. Each of the 18 Project Elements listed below are identified on **Figure 3**.

SOURCE: ESRI

JBLTP Facility Improvements Package B Final Design

Figure 1
Regional Location

ESA

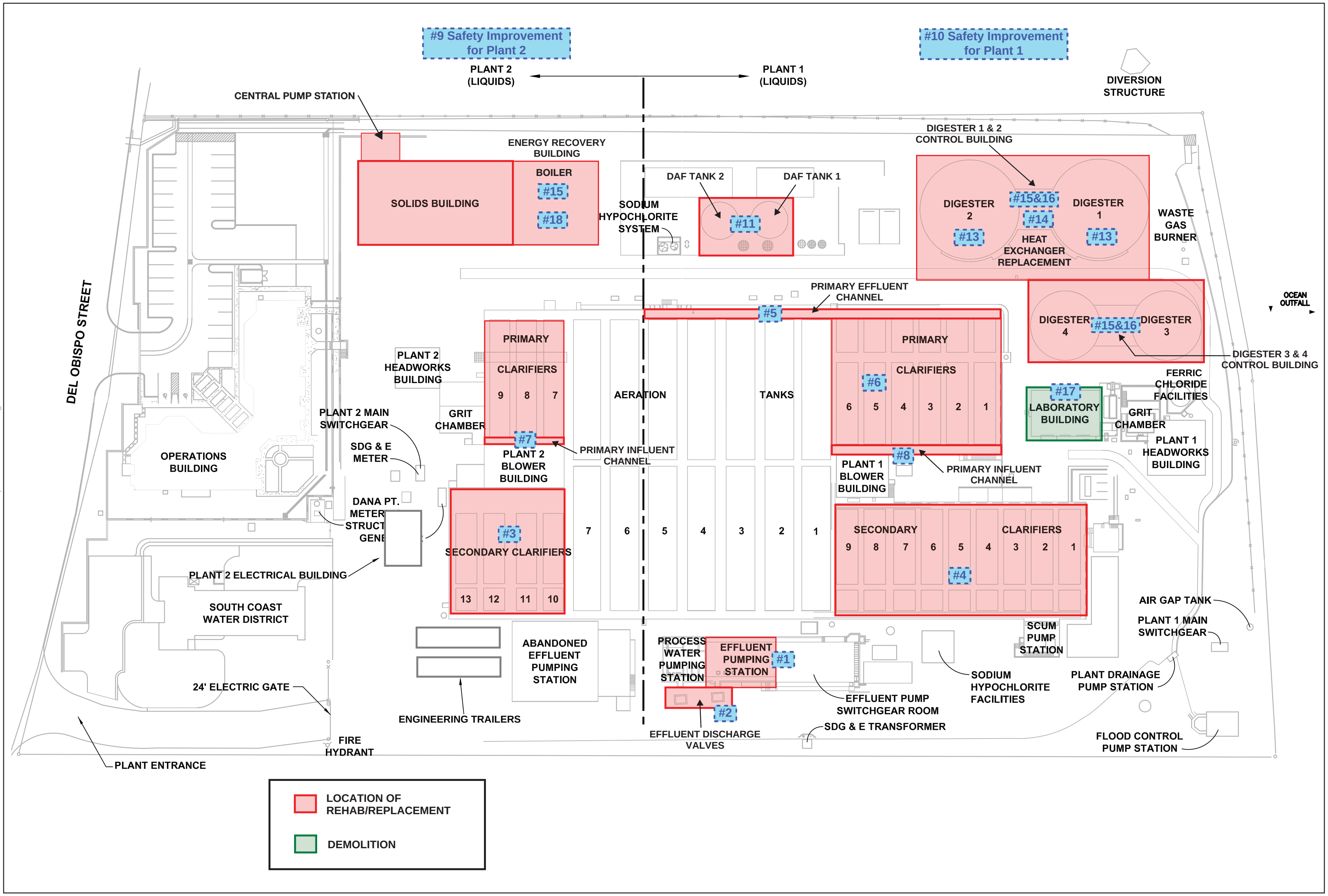


SOURCE: ESRI

JBLTP Facility Improvements Package B Final Design

Figure 2
Project Area

ESA



SOURCE: Carollo Engineers, 2018

Figure 3
Site Plan

Effluent Pump Station Piping Modifications

Project Element 1: The 24-inch discharge pipeline from the 30-inch by 24-inch reducer section will be replaced with a 24-inch by 30-inch increaser section. The replacement includes the 24-inch check valve, actuator and pressure indicator. The flow meter will remain in place. The temporary handling of effluent during the replacement will occur.

Effluent Discharge Valves Replacement

Project Element 2: Two effluent discharge valves connecting the Chlorine Contact Basin to the San Juan Creek Ocean Outfall will be replaced.

Secondary Sedimentation Basins Modifications (Secondary Clarifiers 10 through 13 on Figure 1)

Project Element 3: The rotating scum skimmers, telescoping valves and drain valve assembly will be replaced.

Secondary Sedimentation Basins Modifications (Secondary Clarifiers 1 through 9 on Figure 1)

Project Element 4: The chain and flight assembly (note that the drives have already been replaced) and telescoping valves will be replaced, and repairs to damaged concrete on the crosswalks adjacent to the drive unit will be provided.

Primary Effluent Channel

Project Element 5: The basin protective coating will be replaced, the concrete surface and cracks will be repaired, the channel slide gates with drop gate assemblies will be replaced, and the diamond plate covers, supporting angles and grating rebate will be replaced. Work along the channel diamond plate covers includes modification of aeration drain piping and foul air ducting above the deck.

Primary Sedimentation Basins (Primary Clarifiers 1 through 6 on Figure 1)

Project Element 6: The basin protective coating will be replaced, the concrete surfaces and cracks will be repaired, and the launders, scum beach, and scum skimmers, and basin and hatch covers will be replaced. The switches will be disconnected and all new electrical conduits (includes power supply to scum skimmer drives, basin lights and power receptacles) will be rerouted from the north side of the Primary Sedimentation Basins, along the east wall of the Basins through Primary Sludge Valve Tunnel to the motor control center in the Blower Room. There are four discharge valves per digester.

Plant 2 Primary Influent Channel

Project Element 7: The lining, gates, rebate and diamond plates in the Influent Channel will be replaced. The covers of the Primary Sedimentation Basin will be temporarily removed during construction and the covers will be restored after the completion of the improvement at the Plant 2 Influent Channel.

Plant 1 Primary Influent Channel

Project Element 8: The basin protective coating will be replaced, the concrete surface and cracks will be repaired, and the inlet gates, diamond plate covers and grating rebate will be replaced. The primary sedimentation basins' chain and flight and collector drive control will be relocated, as necessary.

Safety Related Items for Liquids Facility

Project Element 9: Various structures within the Liquids Facility portion of the treatment plant will include modifications to roofs, hatch-skylight, fixed ladders, and handrails.

Safety Related Items for Solids Facility

Project Element 10: Various structures within the Solids Facility portion of the treatment plant will include modifications to roofs, hatch-skylight, fixed ladders, and handrails.

Modification of the Existing Thickening and Digestion System

Project Element 11: The metal structures of the DAF units are known to have structural defects due to corrosion. This modification includes patching up structure, sand blasting and recoating the interior of the DAFs, replacement of DAF covers and handrails, and replacement and coating collector mechanism. This modification also includes an upgrade containing a dissolution tank, recirculation pump, compressor, thicken waste activated sludge (TWAS) pumps, aboveground piping and valves. The instrumentation and control system, all wiring, aboveground conduit and Motor Control Center (MCC) buckets are also included.

Centrate Drainage Pump Station and Discharge Line

Project Element 12: The existing centrate piping runs between the Energy Recovery Building and Plant 1 Headworks Building. The original drainage line was modified in 2008, however the system is still subject to flow backing up. This improvement includes a pump, re-routed discharge line, pump station control and power supply.

Digesters 1 and 2 Mixing System Improvements

Project Element 13: Improvements include replacement of the existing pumps and control valves. The existing mix pumps are to be replaced with chopper type pumps.

Heat Exchanger Replacement

Project Element 14: The four existing heat exchangers located between Digesters 1 and 2 and between 3 and 4 will be replaced along with the aboveground piping.

Boilers Replacement

Project Element 15: The boilers and control system located in the Digester 1 and 2 Control Building and Digester 3 and 4 Control Building will be replaced.

Digester Control Buildings

Project Element 16: The gas monitoring system and lighting will be replaced and the roof will be removed and reconstructed at Digester Control Building 1 and 2. All HVAC equipment and penetrations through the roof will be replaced and a walkway on the roof will be reinforced at Digester Control Building 3 and 4. A new stairway for each digester to the top of Digesters 3 and 4 will be included.

Laboratory Demolition

Project Element 17: Because SOCWA has shifted its laboratory function to the Regional Treatment Plant, the existing laboratory that dates back to the 1960's and has a dimension of approximately 47 feet by 33 feet by 12.7 feet tall will be demolished.

Energy Recovery Building Improvements

Project Element 18: A 25-foot-long monorail system will be provided on the upper floor of the Energy Recovery Building to allow storage of equipment. The weight capacity of the monorail crane will be 2 tons. An independent support system for the monorail system will be provided on the ceiling. In addition, the existing built-up roof and skylight support curbs have aged and will be replaced.

2.3 Project Construction

Construction of the project elements are anticipated to begin in 2019 and completed within approximately two years.

Construction Equipment and Workforce

The majority of the construction activities include replacement and repairs of existing equipment and structures. The project also includes new piping, safety-related modifications, and structural demolition of the existing laboratory building which encompasses approximately 1,550 square feet. The total construction crew for the proposed project is expected to range from 10 to 30 workers, but would vary depending on activity.

Construction Activities Associated with Replacements and Repairs

- Forklift
- Crane
- Welders
- Concrete/mortar mixer
- Air compressor
- Sand Blaster

- Aerial Lifts

Construction Activities Associated with New Piping

- Excavator
- Backhoe
- Crane
- Compactor
- Paver
- Concrete/mortar mixer

Construction Activities Associated with Safety-Related Modifications

- Crane
- Forklift
- Aerial Lift
- Concrete/Industrial Saw

Construction Activities Associated with Demolition

- Concrete/Industrial Saws
- Excavator
- Rubber Tire Dozer

Construction Staging Area and Site Access

During construction of the proposed project, staging of equipment and materials would occur along the drive isle in the southeast portion of the project site. Adequate access in the southeast area of the site would be provided during construction activities.

2.4 Project Operation and Maintenance

After implementation of the proposed project elements, the operations at the JBLTP would remain the same. Maintenance activities at the JBLTP are expected to be reduced due to the proposed repairs and replacements of older equipment. No new operation or maintenance personnel would occur with the proposed project.

2.5 Project Approvals

The South Orange County Wastewater Authority is the Lead Agency and has primary approval of the proposed project. As a Responsible Agency, the City of Dana Point has discretionary approval for the issuance of a Coastal Development Permit for the project.

2.6 Public Review Process

As required by Sections 15072 and 15073 of the CEQA Guidelines, a Notice of Intent to Adopt a Mitigated Negative Declaration (MND) as well as the MND was circulated to the public, public agencies, the County of Orange County Clerk and the State Clearinghouse for 30 days beginning on June 5, 2018 and ending on July 5, 2018. Written comments on the environmental documentation shall be sent to South Orange County Wastewater Authority, 34156 Del Obispo Street, Dana Point, CA 92629, attention Ms. Roni Young on or before July 5, 2018.

3 Initial Study Checklist

3.1 Background

1.	**Project Title:** JB Latham Treatment Plant Facility Improvements Package B Final Design
2.	**Lead Agency Name and Address:** South Orange County Wastewater Authority 34156 Del Obispo Street Dana Point, CA 92629
3.	**Contact Person and Phone Number:** Ms. Roni Young, Associate Engineer (714) 593-7462
4.	**Project Location:** South Orange County Wastewater Authority JB Latham Treatment Plant 34156 Del Obispo Street Dana Point, CA 92629
5.	**Project Sponsor's Name and Address:** South Orange County Wastewater Authority 34156 Del Obispo Street Dana Point, CA 92629
6.	**General Plan Designation(s):** Community Facility
7.	**Zoning:** DP Specific Plan Overlay

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	☐ 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
☐ Energy	☒ 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.

4 Environmental Analysis

Sections 4.1 through 4.20 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
- 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
- Energy
- Mandatory Findings of Significance

The environmental analysis in the following sections is patterned after the IS Checklist recommended by the CEQA Guidelines, as amended, and used by SOCWA in its environmental review process. For the preliminary environmental assessment undertaken as part of this IS's preparation, a determination that there is a potential for significant effects indicates the need to more fully analyze the development's impacts and to identify mitigation.

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?	☐	☐	☒	☐

Environmental Evaluation

Would the project:

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

Less than Significant Impact. The City of Dana Point General Plan identifies a wide variety of scenic resources within the city, including but not limited to Monarch Beach, high points and ridgelines that provide views of the coastline and Catalina, scenic vistas of the Pacific Ocean and the Dana Point Harbor, and inland views of the foothills and valleys (City of Dana Point 1991). Further, the City of Dana Point General Plan designates local parks and lookouts that provide views of the coastal terrace and Pacific Ocean as scenic resources, which include: Pine Bluffs Park, Gazebo Park, Leyton Park, Lantern Bay Park, Heritage Park, Blue Lantern Lookout Point, and Salt Creek Beach Park (City of Dana Point, 1991).

The project area is not officially designated as a scenic vista. However, the JBLTP is located within the City of Dana Point's Coastal Zone and is located near visual resources and assets that contribute to the aesthetic characterization of the Coastal Zone (City of Dana Point, 2018). Visual resources that contribute to the coastal scenic vista in the project vicinity include Doheny State Beach, the Pacific Ocean and the San Juan Creek Trail. The San Juan Creek Trail extends along the eastern boundary of JBLTP, adjacent to the project area. Along the San Juan Creek Trail, there are intermittent views of JBLTP structures. The views are partially obstructed by existing landscaping and topography.

Short-term construction impacts would include facility construction, rehabilitation activities and demolition. The construction equipment may be visible from public views from the San Juan Creek Trail. Due to the limited area of disturbance entirely within an existing industrial complex and the temporary nature of the construction activities, project construction would not significantly impact surrounding scenic vistas or obstruct views of the Pacific Ocean.

Once constructed, the proposed improvements may be visible from recreational users of the San Juan Creek Trail; however, they would blend in with the existing facilities and would not obscure views or change the visual character of the treatment plant site. Once constructed, the proposed improvements would not be taller or larger in size than the existing facilities within the JBLTP. The proposed improvements would serve the existing treatment plant functions and would be designed to be architecturally consistent with existing buildings at the JBLTP. Therefore, the proposed improvements would not contrast with existing facilities at JBLTP, and the improved facilities would not obstruct public views of the neighboring San Juan Creek Trail. 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. Based on a review of the California Department of Transportation (Caltrans) List of Scenic Highways, the project area is not located along an officially Designated State Scenic Highway (Caltrans, 2018). The nearest officially Designated State Scenic Highway, State Highway 91, is located approximately 28 miles northeast of the City. Pacific Coast Highway (PCH) throughout the County of Orange is designated as an Eligible Scenic Highway but is not officially designated. The nearest portion of PCH is located approximately 500 feet south of the project site at the PCH bridge over San Juan Creek. Views from motorists traveling on the PCH bridge over San Juan Creek have views of the project site; however, since the proposed project would not increase the height or size of any of the structures on the project site, views from PCH would not be impacted.

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

Less than Significant Impact. The proposed improvements would be constructed within the existing JBLTP property. The JBLTP is located within the City of Dana Point's Coastal Zone and is located near visual resources and assets that contribute to the visual characterization of the Coastal Zone. However, the proposed improvements would have an appearance similar to existing JBLTP facilities. Once constructed, the proposed improvements would not be taller or larger in size than the existing facilities within the JBLTP. All proposed improvements would be compatible with the existing visual character of JBLTP. Because the proposed improvements are within the JBLTP boundary and are consistent with the existing JBLTP uses and design, the proposed project would not alter or degrade the visual character of the area. 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 Impact. There are two primary sources of light: light emanating from building interiors that pass through windows and light from exterior sources (e.g., street lighting, parking lot lighting, building illumination, security lighting, and landscape lighting). Depending upon the location of the light 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 onsite uses associated with JBLTP facilities. Security lighting on site 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.

Project Element 16 as described in Section 2.2 above, includes the replacement of lighting at Digester Control Building 1 and 2. Similar to the existing facilities within JBLTP, outdoor lighting would be confined to the immediate area and would not spill over into adjacent areas or create light beams into the night sky. No changes to the on-site security lighting would occur. 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.

Buildings with large facades constructed of reflective surfaces (e.g., brightly colored building facades, metal surfaces, and reflective glass) could increase existing levels of daytime glare. The proposed improvements would not be implemented with large reflective surfaces; therefore, no glare impacts would occur.

References

California Department of Transportation (Caltrans), 2018. Officially Designated Scenic Highway, Orange County. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/, accessed February 22, 2018.

City of Dana Point, 1991. City of Dana Point General Plan, Conservation/Open Space Element. Available at: http://www.danapoint.org/home/showdocument?id=205, accessed February 22, 2018.

City of Dana Point, 2018. Post – LCP Certification, Coastal Zone Jurisdiction. Available at: http://www.danapoint.org/Home/ShowDocument?id=107, accessed February 22, 2018.

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?	☐	☐	☐	☒

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 would occur regarding conversion of existing agriculture uses or Williamson Act contracts.

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 proposed project area is currently zoned as DP Specific Plan Overlay. 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 2(a) through 2(d). The project area is developed with wastewater treatment and conveyance facilities and impervious surfaces. 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.

References

California Department of Conservation (CDC), 2004. Agricultural Preserves, Williamson Act Parcels, Orange County, California. 2004.

CDC, 2018. California Important Farmland Finder. Available at: https://maps.conservation.ca.gov/dlrp/ciff/, accessed February 22, 2018.

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

In accordance with the requirements under CEQA, this section provides an estimate of air quality emissions for the project and the potential impacts from associated construction activities. Because the proposed project includes the repair and replacement of existing components and is not adding new processes, there will be no new operational activities, and therefore, no new operational emissions. As operational emissions from the site will not change from the current existing conditions, operational activities are not addressed in this analysis. The analysis in this section is summarized from the Air Quality, Greenhouse Gas and Energy Technical Report included in **Appendix A** of this IS/MND (ESA, 2018).

The project area is located in the South Coast Air Basin, which consists of Orange County, Los Angeles County (excluding the Antelope Valley portion), and the western, non-desert portions of San Bernardino and Riverside Counties, in addition to the San Gorgonio Pass area in Riverside County. The South Coast Air Quality Management District (SCAQMD) is responsible for air quality planning in the Air Basin and developing rules and regulations to bring the area into attainment of the ambient air quality standards.

Environmental Evaluation

Would the project:

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

Less than Significant Impact. SCAQMD is required, pursuant to the CAA, to reduce emissions of criteria pollutants for which the Air Basin is in non-attainment of the NAAQS (e.g., ozone and $PM_{2.5}$). SCAQMD's Air Quality Management Plan contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving the NAAQS. These strategies are developed, in part, based on regional growth projections prepared by the SCAG.

Under this criterion, the SCAQMD recommends that lead agencies demonstrate that a project would not directly obstruct implementation of an applicable air quality plan and that a project be consistent with the assumptions (typically land-use related, such as resultant employment or residential units) upon which the air quality plan is based. The proposed project would result in an increase in short-term employment compared to existing conditions. Although the proposed project will require many workers over the construction process, these jobs are temporary in nature. Construction jobs under the proposed project would not conflict with the long-term employment projections upon which the AQMP is based, specifically as the majority of construction workers are contracted and are not hired specifically for a single construction job.

Control strategies in the AQMP with potential applicability to short-term emissions from construction activities include strategies denoted in the AQMP as MOB-08 and MOB-10, which are intended to reduce emissions from on-road and off-road heavy-duty vehicles and equipment by accelerating replacement of older, emissions-prone engines with newer engines meeting more stringent emission standards. The proposed project would utilize low-VOC coatings during construction activities to avoid excessive VOC emissions. Trucks and other vehicles in loading and unloading queues would be parked with engines off to reduce vehicle emissions during construction activities. Additionally, the proposed project would comply with CARB requirements to minimize short-term emissions from on-road and off-road diesel equipment. The proposed project would also comply with SCAQMD regulations for controlling fugitive dust pursuant to SCAQMD Rule 403.

Compliance with these requirements is consistent with and meets or exceeds the AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities. Because the project would not conflict with the control strategies intended to reduce emissions from construction equipment, the project would not conflict with or obstruct implementation of the AQMP, and impacts 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 Impact. Construction of the project has the potential to generate temporary criteria pollutant emissions through the use of heavy-duty construction equipment that include dozers and excavators, and through vehicle trips generated from workers and haul trucks traveling to and from the project area. In addition, fugitive dust emissions would result from demolition and some soil-handling activities. Mobile source emissions, primarily NO_X, would result from the use of construction equipment such as dozers and loaders. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of construction activity, and prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources.

Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source emissions factors. The emissions estimated from the CalEEMod (Version 2016.3.2) software is based on outputs from the OFFROAD and EMFAC models, which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, including on- and off-road vehicles and equipment. The output values used in this analysis were adjusted to be project-specific based on equipment types and the construction schedule. Detailed assumptions and model results are provided in Appendix A of this MND.

Based on criteria set forth in the SCAQMD CEQA Air Quality Handbook, a project would have the potential to violate an air quality standard or contribute substantially to an existing violation and result in a significant impact with regard to construction emissions if regional emissions from both direct and indirect sources would exceed any of the SCAQMD prescribed threshold levels.

The worst-case daily construction emissions were calculated to determine maximum daily construction emissions (pounds per day) for the project. Results of the criteria pollutant calculations are presented in **Table 1**, *Maximum Unmitigated Regional Construction Emissions*. As shown therein, construction-related daily emissions for the criteria and precursor pollutants (VOC, NO_X, CO, SO_X, PM10, and PM2.5) would be below SCAQMD significance thresholds. These calculations include appropriate dust control measures required to be implemented during each phase of development, as required by SCAQMD Rule 403 (Control of Fugitive Dust). Therefore, with respect to regional emissions from construction activities, impacts would be less than significant.

TABLE 1
MAXIMUM UNMITIGATED REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY)[a]

Source	VOC	NO_X	CO	SO_2	PM10[b]	PM2.5[b]
Onsite	4	42	27	<1	2	2
Offsite	<1	3	3	<1	1	<1
Maximum Daily Construction Emissions	**5**	**45**	**30**	**<1**	**3**	**2**
SCAQMD Significance Threshold	75	100	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

NOTES:
[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix A.
[b] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

SOURCE: ESA, 2018

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 Impact. The SCAQMD's approach for assessing cumulative impacts related to operations is based on attainment of ambient air quality standards in accordance with the requirements of the Federal and State Clean Air Acts. As discussed earlier, the SCAQMD has developed a comprehensive plan, the AQMP, which addresses the region's cumulative air quality condition.

A significant impact may occur if a project were to add a cumulatively considerable contribution of a federal or state non-attainment pollutant. The Basin is currently in non-attainment for ozone (federal and state standards), PM10 (state standards only) and PM2.5 (federal and state standards); therefore, related projects could cause ambient concentrations to exceed an air quality standard or contribute to an existing or projected air quality exceedance. Cumulative impacts to air quality are evaluated under two sets of thresholds for CEQA and the SCAQMD.

In particular, CEQA Guidelines Sections 15064(h)(3) provides guidance in determining the significance of cumulative impacts. Specifically, Section 15064(h)(3) states in part that:

> *A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g., water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency*

For purposes of the cumulative air quality analysis with respect to CEQA Guidelines Section 15064(h)(3), the proposed project's incremental contribution to cumulative air quality impacts is determined based on compliance with the SCAQMD adopted AQMP. As discussed previously under Impact a), the proposed project would be consistent with the AQMP and would not have a cumulatively considerable air quality impact.

As the project is not part of an ongoing regulatory program, the SCAQMD also recommends that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality. The project would result in construction emissions of criteria pollutants for which the project area is in non-attainment. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant. The Air Basin is currently in non-attainment under federal or state standards for ozone, PM10, and PM2.5. As detailed in Impacts b) and d), the emissions from construction of the project are not predicted to exceed any applicable SCAQMD regional or local impact threshold, and therefore, are not expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Therefore, the project would not result in a cumulatively considerable net increase in construction non-attainment pollutants or ozone precursors and impacts would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant with Mitigation Incorporated. Certain population groups are especially sensitive to air pollution and should be given special consideration when evaluating potential air quality impacts. These population groups include children, the elderly, persons with pre-existing respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. As defined in the SCAQMD CEQA Air Quality Handbook, a sensitive receptor to air quality is defined as any of the following land use categories: (1) long-term health care facilities; (2) rehabilitation centers; (3) convalescent centers; (4) retirement homes; (5) residences; (6) schools; (7) parks and playgrounds; (8) child care centers; and (9) athletic fields.

Localized Construction Impacts

The localized effects from the on-site portion of the construction emissions are evaluated at nearby sensitive receptor locations potentially impacted by the project according to the SCAQMD's Localized Significance Threshold Methodology. The localized significance thresholds are only applicable to NO_X, CO, PM10, and PM2.5. The analysis of localized air quality impacts focuses only on the on-site activities of a project, and does not include emissions that are generated offsite such as from on-road haul or delivery truck trips.

The project site is located in the SCAQMD SRA 21. The SOCWA site encompasses approximately nine acres. As a worst-case assumption, construction activities are assumed to occur over approximately seven acres of the project site. The nearest off-site air quality sensitive receptors would be located adjacent to the pproject site. Therefore, the SCAQMD localized significance threshold (LST) screening criteria applicable to a 5-acre site in SRA 21 with sensitive receptors located at 25 meters was used.

Using the Localized Significance Threshold Methodology, the results of the analysis determined localized project-related construction emissions would be below the SCAQMD thresholds of significance. Results of the pollutant calculations are presented in **Table 2**, *Unmitigated Localized Construction Emissions*. The increase in daily criteria and precursor pollutants emissions (NO_X, CO, PM10, and PM2.5) during construction activities would be below the SCAQMD thresholds of significance. Therefore, project-related localized construction emissions would result in a less than significant impact.

TABLE 2
UNMITIGATED LOCALIZED CONSTRUCTION EMISSIONS ANALYSIS (POUNDS PER DAY)[a]

Source	NO_X	CO	PM10[b]	PM2.5[b]
Maximum Daily Construction Emissions	**42**	**27**	**2**	**2**
SCAQMD Significance Threshold	109	1,804	12	8
Exceeds Threshold?	No	No	No	No

NOTES:
[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix A.
[b] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

SOURCE: ESA, 2018

Construction Related TAC Impacts

The greatest potential for TAC emissions during project construction would be related to diesel particulate matter emissions associated with heavy-duty equipment during demolition, grading and excavation, and building construction activities. Construction activities associated with the pproject would be sporadic, transitory, and short term in nature. The project's health risk calculations were performed using a spreadsheet tool consistent with the OEHHA guidance, which incorporates the algorithms, equations, and a variable described above as well as in the OEHHA guidance, and incorporates the results of the AERSCREEN dispersion model. The detailed health risk analysis is included in Appendix A of this MND.

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 75 in one million. The maximum impact would occur at approximately 328 feet (100 meters) 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 would not have any mitigation, such as mechanical filtration and exposure would occur with windows open. The unmitigated cancer risk exceeds the significance of 10 in one million, and therefore, represents a potentially significant impact.

Implementation of mitigation measure MM-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 MM-AQ-1, cancer risk from construction activities are reduced to approximately 8 in one million. This is below the 10 in one million threshold, and therefore, with implementation of mitigation, the project impacts would be reduced to less than significant levels.

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 0.08 before mitigation and would not exceed the threshold of 1.0. With implementation of Mitigation Measure MM-AQ-1 as required above, the chronic impact would be further reduced to 0.009.

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 the significance threshold with the implementation of MM-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 after the implementation of MM-AQ-1.

Mitigation Measures

The following mitigation measure will be implemented to reduce impacts to air quality from project-related construction activities.

> **AQ-1**: Mobile off-road construction equipment (wheeled or tracked) used during construction of the project shall meet or exceed the USEPA Tier 4 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. The mitigation applies to off-road equipment and does not apply to on-road vehicles.

Significance Determination after Mitigation

Within implementation of Mitigation Measure AQ-1, potential impacts to sensitive receptors would be reduced to less than significant.

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

Less than Significant Impact. Potential sources that may emit odors during project construction activities include diesel trucks and equipment and the use of architectural coatings and solvents. According to the SCAQMD CEQA Air Quality Handbook, construction equipment is not a listed source of odors. Compliance with existing regulations, including the CARB anti-idling regulation that limits idling to five minutes or less at any location would minimize the potential for odorous emissions. SCAQMD Rule 1113 (Architectural Coatings) limits the amount of VOCs from architectural coatings and solvents.

Construction-related odors would be temporary, and cease upon construction completion. The closest sensitive receptors (residential uses) to the project site are located adjacent and south of the site. Construction in the immediate vicinity of the residences would also be of relatively short duration, and odors would be typical of construction and grading projects, and regulated by the ARB and SCAQMD. The prevailing winds in this area (typically offshore toward the east) would minimize construction-related odors reaching the residential communities to the west and the south. Through adherence with mandatory compliance with SCAQMD Rules, no construction activities or materials are proposed which would create objectionable odors. Because the project construction would not cause objectionable odors and would be of relatively limited duration, impacts are anticipated to be less than significant.

References

ESA, 2018. JD Latham Treatment Plant Facility Improvements Package Final Design Air Quality, Greenhouse Gas, and Energy Technical Report. February.

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

The following analysis is a summary of the information from the Biological Resources Assessment prepared by ESA located in **Appendix B** of this IS/MND. The Biological Resources Assessment documents the existing biological conditions on the project site and includes a discussion of the sensitive biological resources that have a potential to occur, an analysis of potential impacts to biological resources as a result of project implementation, and recommendations to avoid or minimize impacts below a level of significance. Methodology used for the assessment included a review of available literature and databases and a field survey conducted within the project area by ESA on January 28, 2018.

General Site Characteristics

The project area is located within a developed area of the City of Dana Point. Surrounding land uses consist of commercial and residential developments, a park to the north, and San Juan Creek to the east. The project area is also mapped within the boundaries of the Coastal Subarea Plan of the Orange County Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). The site occurs on relatively flat land, at an elevation range of approximately 15 feet above mean sea level (AMSL) to 20 feet AMSL. The project area is entirely developed, consisting of very little vegetation throughout most of the site; however, non-native landscaped trees occur along the boundaries of the project site. San Juan Creek, a concrete-lined channel with no riparian vegetation adjacent to the project site, is located to the east of the project site. The project area has been developed since the early 1960's, and no native vegetation or natural biological conditions occur on the project area.

Soils

Based on a review of the U.S. Department of Agriculture Soils Map for the project area, the historically mapped soils on the project area consist of Metz sandy loam and Sorrento clay loam. However, the development on the project site has significantly altered the natural composition and compaction of the previously mapped soils. The observed surface soils have been covered with concrete and asphalt, except in areas where landscaped trees occur. No native soils currently exist on the project area.

Vegetation Communities and Land Cover Types

The vegetation communities and land cover types previously occurring on the project site have been significantly altered and the current land cover on the project site consists entirely of developed land, as further described below.

Developed Land

Developed land comprises the entirety of the project site. The majority of the project site consists of buildings, tanks, and plant infrastructure necessary to the operations of the facility. No exposed surface soils, besides at the base of landscaped trees, occur on the project site. The only vegetation observed within developed areas includes non-native landscaped trees that occur along the boundaries of the project site. Non-native landscaped trees observed include Peruvian pepper tree (*Schinus molle*), pine tree (*Pinus* sp.), blue gum (*Eucalyptus globulus*), Mexican fan palm (*Washingtonia robusta*), and acacia (*Acacia* sp.).

Wildlife

Wildlife observed during the field reconnaissance included avian species commonly observed in upland settings and urban environments including house finch (*Carpodacus mexicanus*), European starling (*Sturnus vulgaris*), yellow-rumped warbler (*Setophaga coronata*), common raven (*Corvus corax*), and Anna's hummingbird (*Calypte anna*). No mammal, reptile, amphibian, or fish species were observed on the project area during the survey.

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?

No Impact. The project area is entirely developed and lacks native soils capable of supporting any sensitive natural community known to occur in the general area. Based on the results of the Biological Resources Assessment conducted for the proposed project and a site survey, there is low potential for special-status plant species or wildlife species to occur on JBLTP due to the lack of suitable onsite habitat (ESA, 2018). San Juan Creek is located adjacent to the eastern boundary of the JBLTP property, which could support riparian woodlands and forests; however, the portion of San Juan Creek adjacent to the project area is regularly maintained to reduce flow restriction and lacks any established native vegetation growing within the channel. Therefore, there is no potential for a sensitive natural community and because of the lack of suitable onsite habitat, no impacts to special –status plant or wildlife species would occur.

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 the JBLTP 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 San Juan Creek. 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. The JBLTP is developed with water and wastewater treatment facilities. The locations where the proposed project improvements and demolition would occur are paved and/or in a disturbed condition. The Biological Resources Assessment conducted for the proposed project determined that there are no jurisdictional resources occur within the boundaries of the JBLTP property. Further, the project area is flat, lacking drainage features, and is surrounded by development with no connectivity to jurisdictional resources. San Juan Creek is located just east of the project area, but will not be directly impacted by the proposed project. Therefore, no 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?

Less than Significant Impact with Mitigation Incorporated. The JBLTP is a developed property that has been improved with buildings, wastewater treatment facilities, internal access roads and parking areas. As a result, the project area lacks suitable habitat or provide linkages to suitable habitat to support wildlife movement. However, the existing landscaped trees along the boundaries of the project area provide suitable nesting habitat for avian species. No sign of active nesting was observed during the field survey conducted for the proposed project; however, the survey was conducted outside the general avian nesting season of February 1 through August 31. Construction noise and vibration during the nesting season could result in a potentially significant impact.

Mitigation Measure

BIO-1: All proposed project activities (including, but not limited to, staging and disturbances to native and non-native vegetation, structures, and substrates) is recommended to occur outside of the avian nesting season, which generally runs from February 1 through August 31, to avoid take of nesting birds, eggs, chicks, or fledglings.

If construction activities occur during the avian breeding season, a qualified biologist with experience in conducting nesting bird surveys shall conduct a pre-construction clearance survey for active nests within 500 feet of the proposed construction area and no more than ten days prior to the initiation of project construction activities. If a protected native bird is found, flagging, stakes, and/or construction fencing and noise attenuation shall be used, if necessary, to demarcate a suitable buffer zone. The buffer zone will be determined by the qualified biologist and will depend on the sensitivity of the species and proximity of the nest to the construction area. A qualified biological monitor shall be present onsite during construction to ensure that these activities remain within the project footprint (i.e., outside the demarcated buffer) and that the flagging/stakes/fencing is being maintained, and to minimize the likelihood that active nests are abandoned or fail due to project construction activities. The 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. In addition, the frequency of monitoring construction activities will be determined by the qualified biologist.

Project construction personnel, including all contractors working onsite, will be instructed on the sensitivity of the area. The project proponent shall delay all project construction activities within the buffer zone until a qualified biologist has determined that the juveniles have fledged, the nest is vacated, and there is no evidence of a second attempt at nesting.

If there is a lapse of construction activities associated with the proposed project 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 Determination after Mitigation

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

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

No Impact. Several non-native and landscaped trees are mapped along the boundaries of the JBLTP. Street and parkway trees within the City of Dana Point that are proposed to be removed require written authorization from the City manager street in accordance with Municipal Code §13.04.050 Care of Natural Resources, and §14.01.610 Landscape Maintenance Within the Parkway Area. However, the proposed project does not include the removal of street or parkway trees, and thus, the municipal code ordinances do not apply to the proposed project. Therefore, there would be no impact to local policies or ordinances, particularly ones applying to tree protection.

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 boundaries of the Coastal Subarea Plan of the Orange County NCCP/HCP. Construction activities would be contained entirely within the JBLTP property and would not result in impacts to coastal sage scrub habitat or coastal California gnatcatcher, a target planning species of the Orange County NCCP/HCP. Further, the project area does not occur within land designated for conservation by the Orange County NCCP/HCP. Therefore, construction and operation of the proposed improvement would not conflict with the goals and provisions of the Orange County NCCP/HCP, and no impacts would occur.

References

Environmental Science Associates (ESA), 2018. *Biological Resources Assessment for the SOCWA JB Latham Treatment Plant Facility Improvement Project, Orange County, California*. February 16, 2018.

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 the Cultural Resources Assessment and Paleontological Resources Assessment prepared by ESA and located in **Appendix C** of this IS/MND. Both assessments include discussions of existing conditions of the project area, an analysis of potential impacts as a result of the proposed project, and recommendations to avoid or minimize impacts below a level of significance. Methodology used for the Cultural Resources Assessment includes a review of available literature, a records search conducted on January 17, 2018 by staff at the California Historical Resources Information System (CHRIS) South Central Coastal Information Center (SCCIC), a desktop archeological review of the project area, a California Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search conducted on January 9, 2018, and a field survey conducted within the project area on January 25, 2018 by ESA. Methodology used for the Paleontological Resources Assessment includes a review of available scientific literature and a records search conducted on January 9, 2018 at the Natural History Museum of Los Angeles County.

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. Based on a historical evaluation (ESA, 2018), the JBLTP, which consists of multiple buildings, structures, and features associated with the activated sludge method of wastewater treatment, is recommended not eligible for listing in the California Register under four criteria, and, therefore, does not qualify as a historical resource pursuant to CEQA. The JBLTP is not directly associated with important events in the history of pumping or treating wastewater, or with the lives of persons significant in the history of wastewater systems in Orange County, and no known historical resources are located within the project area. The proposed project would demolish the existing laboratory building; however, this structure is not considered a historic resource. Further, architectural designs of the proposed improvements would be compatible with the surrounding structures. Therefore, the proposed project would not result in a substantial adverse change to the significance of a historic resource.

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

Less than Significant Impact with Mitigation Incorporated. No archaeological resources are known within the project area; however, the project area is considered highly sensitive for subsurface archaeological resources. The Cultural Resources Assessment prepared for the proposed project indicates that archaeological deposits could underlie the project area and would likely be located beneath two feet of fill. Therefore, if project construction activities result in ground disturbing activities that exceed two feet in depth, the project would have the potential to impact subsurface archaeological deposits that may qualify as historical resources or unique archaeological resources. This potential impact to unknown historical resources or unique archaeological resources is considered significant.

Mitigation Measures

CUL-1: Prior to the start of ground-disturbing activities that exceed two feet in depth, SOCWA 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 Mitigation Measures CUL-2 through CUL-4, below.

CUL-2: Prior to the start of ground-disturbing activities that exceed two feet in depth, 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, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. SOCWA shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

CUL-3: An archaeological monitor (working under the direct supervision of the qualified archaeologist) shall observe ground-disturbing activities within the project area that exceed a depth of two feet deep. The qualified archaeologist, in coordination with SOCWA, may reduce or discontinue monitoring if it is determined that the possibility of encountering buried archaeological deposits is low based on observations of soil stratigraphy or other factors. Archaeological monitoring shall be conducted by an archaeologist familiar with the types of archaeological resources that could be encountered within the project area. The archaeological monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of a discovery until the qualified archaeologist has evaluated the discovery and determined appropriate treatment (as prescribed below in Mitigation Measure 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 monitoring report that details the results of monitoring. The report shall be submitted to SOCWA. A copy of the final report shall be filed at the SCCIC.

CUL-4: In the event of the unanticipated discovery of archaeological materials, SOCWA shall immediately cease all work activities in the area (within approximately 50 feet) of the discovery until it can be evaluated by a qualified archaeologist. Construction shall not resume until the qualified archaeologist has conferred with SOCWA on the significance of the resource.

If it is determined that the discovered archaeological resource constitutes a historical resource or a unique archaeological resource pursuant to CEQA and 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. The treatment plan shall be implemented by the qualified archaeologist in consultation with SOCWA that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource. If the archaeological resource is determined to be Native American, then SOCWA shall consult with appropriate Native American representatives in determining treatment for the Native American resources to ensure cultural values ascribed to the resource are considered.

Significance Determination after Mitigation

Implementation of Mitigation Measures CUL-1 through CUL-4 would reduce impacts to archaeological resources to less than significant levels 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 Impact with Mitigation Incorporated. The sediments found at the surface and in the subsurface of the project site are identified as younger alluvial floodplain deposits (Qya) and older alluvial floodplain deposits (Qoa). Both of these deposits have high paleontological sensitivity because they are old enough to preserve fossil resources and based on the records search, these sediment deposits have yielded significant fossil resources as little as a third of a mile from the project site. In addition, the project site was found to have approximately two feet of artificial fill. Therefore, ground disturbance that exceeds two feet in depth may encounter fossil resources, the destruction of which would constitute a significant impact under CEQA. As a result, construction activities could result in significant impacts to paleontological resources.

Mitigation Measures

CUL-5: A qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards (SVP, 2010) (Qualified Paleontologist) shall be retained prior to ground-disturbing activities that exceed two feet in depth. The Qualified Paleontologist shall provide technical and compliance oversight of all work as it relates to paleontological resources, shall attend the project kick-off meeting and project progress meetings on a regular basis, and shall report to the site in the event potential paleontological resources are encountered.

CUL-6: The Qualified Paleontologist shall conduct construction worker paleontological resources sensitivity training prior to the start of ground-disturbing activities that exceed two feet in depth (including vegetation removal, pavement removal, etc.). In the event construction crews are phased, additional trainings shall be conducted for new construction personnel. The training session shall focus on the recognition of the types of paleontological resources that could be encountered within the project site and the procedures to be followed if they are found. Documentation shall be retained demonstrating that all construction personnel attended the training.

CUL-7: Full-time paleontological resources monitoring shall be conducted for all ground disturbing activities that exceed two feet in depth and occurring in previously undisturbed sediments of younger alluvial floodplain deposits (Qya) and older alluvial floodplain deposits (Qoa). The upper two feet of artificial fill has no paleontological sensitivity and does not need to be monitored. The Qualified Paleontologist, based on observations of subsurface soil stratigraphy and/or other factors, may increase, reduce, or discontinue monitoring, as warranted. Monitoring may be reduced or discontinued by the Qualified Paleontologist, in coordination with SOCWA, based on observations of subsurface conditions. Paleontological resources monitoring shall be performed by a qualified paleontological monitor (meeting the standards of the SVP) under the direction of the Qualified Paleontologist. Monitors shall have the authority to temporarily halt or divert work away from exposed fossils in order to recover the fossil specimens. Any significant fossils collected during project-related excavations shall be prepared to the point of identification and curated into an accredited repository with retrievable storage. Monitors shall prepare daily logs detailing the types of activities and soils observed, and any discoveries. The Qualified Paleontologist shall prepare a final monitoring and mitigation report to document the results of the monitoring effort.

CUL-8: If construction or other project personnel discover any potential fossils during construction, regardless of the depth of work or location, work at the discovery location shall cease in a 50-foot radius of the discovery until the Qualified Paleontologist has assessed the discovery and made recommendations as to the appropriate treatment. If the find is deemed significant, it should be salvaged following the standards of the SVP (SVP, 2010) and curated with a certified repository.

Significance Determination after Mitigation

Implementation of Mitigation Measures CUL-5 through CUL-8 would reduce impacts to paleontological resources to less than significant levels by requiring 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 Impact 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.

Mitigation Measures

CUL-9: If human remains are encountered, all work will halt work in the vicinity (within 100 feet) of the discovery and the Orange County Coroner will be contacted 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 (as amended by AB 2641). The NAHC will designate an MLD for the remains per PRC Section 5097.98. Until the landowner has conferred with the MLD, SOCWA will ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.

Significance Determination after Mitigation

Implementation of Mitigation Measure CUL-9 would reduce impacts to human remains to less than significant levels, 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.

References

Environmental Science Associates (ESA), 2018. *J.B Latham Treatment Plant Facility Improvements Project, Dana Point, California, Cultural Resources Assessment Report*. February 2018.

Environmental Science Associates (ESA), 2018. *J.B Latham Treatment Plant Facility Improvements Project, Dana Point, California, Paleontological Resources Assessment Report*. February 2018.

4.6 Geology, Soils, and Seismicity

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

Environmental Evaluation

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)

No Impact. 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 project area is not within a designated AP Zone. Further, there is no evidence of active or potentially active fault traces that transverse the project site (City of Dana Point, 1991; CGS, 2001). Therefore, there would be no earthquake fault rupture impact on the proposed project associated with a known earthquake fault.

ii) Strong seismic ground shaking?

Less than Significant Impact. The project area lies within a region that is seismically active. In the event of an earthquake in Southern California, some seismic ground shaking would likely be experienced in the project area sometime during the operational life of the improvements. As discussed above, there are no known active faults within the immediate project area. However, fault traces of the Newport-Inglewood-Rose Canyon fault are located within four miles of the project area. 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. Ground shaking could result in structural damage to new facilities, which in turn could affect operation of related systems. Most of the facilities that would be rehabilitated or replaced are non-habitable; however, the existing full time employees would be on-site and exposed to groundshaking.

The existing structural elements within the project area have gone through appropriate design-level geotechnical evaluations prior to final design and construction as required to comply with the 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. SOCWA would design the proposed improvements to the existing facilities in conformance with applicable standards established by the CBC. These design standards consider proximity to potential seismic sources and the maximum anticipated groundshaking possible. Compliance with these building safety design standards would reduce the potential to threaten the safety of existing on-site workers, and therefore, reduce the potential impacts associated with groundshaking to 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 project area is located within a liquefaction hazard zone (CGS, 2001). Thus, in the event of a large earthquake with a high acceleration of seismic shaking, the potential for liquefaction exists.

As discussed above, the proposed improvements would 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 facility 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 (see Seismic Hazards Mapping Act discussion in Section 3.6.2). The project improvements 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 (CGS, 2001). 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. Construction activities for proposed projects such as excavation and grading could result in soil erosion. Nominal excavation would occur for the proposed project, therefore, substantial soil erosion or loss of topsoil is not expected to occur. However, soil exposed during demolition activities and repaving for the proposed project could be subject to erosion if exposed to heavy rain, winds, or other storm events.

SOCWA would be required to comply with the City of Dana Point's erosion control, sediment control, non-stormwater and waste and material management Best Management Practices (BMPs) (City of Dana Point, 2018a) to minimize the loss of topsoil or substantial erosion as specified by the City's MS4 Permit (issued by the San Diego Regional Water Quality Control Board[SDRWQCB]) and City of Dana Point Ordinance No. 03-17 (City of Dana Point 2018b; City of Dana Point 2018c). Adherence to these conditions would ensure that potential soil erosion and loss of topsoil impacts would be minimized to less than significant.

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 Dana Point General Plan (City of Dana Point, 1991). Therefore, no impacts related to subsidence are anticipated.

Refer to response a) iii) and a) iv) 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. Because nominal excavation and no new structures would occur with project implementation, subterranean facilities are not proposed and the proposed project would result in less than significant impacts regarding liquefaction or collapse due to 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. When expansive soils swell, the change in volume can exert significant pressures on loads that are placed on them, such as loads resulting from structure foundations or underground utilities, and can result in structural distress and/or damage. Based on a review of the U.S. Department of Agriculture Soils Map for the project area, the historically mapped soils on the project area consist of Metz sandy loam and Sorrento clay loam. These soils are characterized as having a moderate-to-high shrink-swell potential. The presence of expansive soils could decrease the structural stability of the proposed improvements, which could result in structural or operational failure of facilities and or threaten the health and safety of on-site workers. Such impacts are considered potentially significant. However, as described above, all existing facilities on-site have undergone appropriate design-level geotechnical investigations. The proposed facilities 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 the installation of septic tanks or alternative waste disposal systems. No impact would occur.

References

City of Dana Point, 2018a. Best Management Practices (BMP) Requirements for Construction Projects. Available at: http://www.danapoint.org/department/public-works-engineering/environmental/best-management-practices-bmp-requirements-for-construction-projects#State, accessed February 22, 2018.

City of Dana Point, 2018b. Regulations. Available at: http://www.danapoint.org/department/public-works-engineering/environmental/ocean-water-quality-surface-runoff/regulations, accessed February 22, 2018.

City of Dana Point, 2018c. Ordinance No. 03-17. Available at: http://www.danapoint.org/home/showdocument?id=21171, accessed February 22, 2018.

Department of Conservation (DOC), 1997. State of California Seismic Hazard Zones, Newport Beach Quadrangle Official Map. April 17, 1997.

4.7 Greenhouse Gas Emissions

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

Discussion

In accordance with the requirements under CEQA, this section provides an estimate of Greenhouse Gas emissions for the project and the potential impacts from associated construction activities. Because the project includes the repair and replacement of existing components and is not adding new processes, there will be no new operational activities, and therefore, no new operational emissions. As operational emissions from the site will not change from the current existing conditions, operational activities are not addressed in this analysis. The analysis in this section is summarized from the full analysis included in the Air Quality, Greenhouse Gas, and Energy Technical Report, located in Appendix A of this document (ESA, 2018).

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. For purposes of this analysis, it is considered reasonable and consistent with criteria pollutant calculations to consider project construction activities such as demolition, hauling, and construction worker trips. Since potential impacts resulting from GHG emissions are long-term rather than acute, GHG emissions are calculated on an annual basis. CalEEMod outputs GHG emissions of CO_2, CH_4, N_2O, and CO_2e. In order to report total GHG emissions using the CO_2e metric, the GWP ratios corresponding to the warming potential of CO_2 over a 100-year period is used in this analysis.

The following analysis evaluates potential impacts associated with construction of each of the Project Elements including emissions from the onsite equipment, worker, and vendor trips. **Table 3,** *Unmitigated Construction GHG Emissions,* presents the total estimated GHG emissions for the construction of the project in annual metric tons of carbon dioxide equivalents (MT CO_2e). GHG emissions are cumulative and typically the amortized emissions are added to the increase in operational emissions and compared to the regional threshold. In this case, there is no increase in operational activities so the only annual GHG emissions increase would be related to the construction emissions. As shown in Table 3, the amortized construction emissions are below the regulatory threshold of 3,000 MT CO_2e, and therefore, emissions would be less than significant.

TABLE 3
UNMITIGATED CONSTRUCTION GHG EMISSIONS (MT CO_2E)[a]

Source	MT CO_2e
Annual Construction Emissions	390
Total Construction Emissions (2 year construction period)	779
Amortized Construction Emissions[b]	26
Threshold	3,000
Exceeds Threshold?	No

NOTES:
[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix A.
[b] Emissions are amortized over an anticipated 30-year project lifetime.

SOURCE: ESA, 2018

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 significance of GHG emissions from the project is evaluated based on whether the project is consistent with the relevant statewide and regional mandates, plans, policies and regulations designed to reduce GHG emissions. The following analysis evaluates potential impacts associated with construction of the Project elements over the approximate 2-year construction period.

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 and upgrades of existing facilities as well as the demolition of the onsite laboratory building. The proposed activities 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 program 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 applicable 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 program 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 long-term vehicle traffic within the City or the region as there are no changes to the existing employee base. There would be a temporary daily increase to the site associated with construction workers, however, these workers would be traveling within the Region, regardless if the project was implemented as construction workers tend to be employed by a company and not hired specifically for one job. Therefore, the proposed project would not conflict with the implementation of SB 375. No mitigation is required.

As discussed above, the proposed program would be consistent with the CARB Scoping Plan and with SB 375. Therefore, the proposed program would have a less than significant impact related to applicable GHG plans and policies.

References

ESA, 2018. *JD Latham Treatment Plant Facility Improvements Package Final Design Air Quality, Greenhouse Gas, and Energy Technical Report*. February 2018.

4.8 Hazards and Hazardous Materials

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

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. In addition, mold-contaminated materials, asbestos, and lead may be encountered during rehabilitation work and demolition of the existing Laboratory Building (Project Element 17). Operation and maintenance activities associated with the proposed improvements would also require routine transport, storage, use, and disposal of hazardous materials for purposes of treatment of wastewater and solids (e.g., chlorine, sodium hypochlorite, hydrogen peroxide). Hazardous materials would be stored in appropriate containers within the various facilities and would be used in accordance with State and local regulations.

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?

No Impact. The project area is not located within 0.25 mile of a school. The Saint Edward's Catholic School is located 0.3 miles northwest of JBLTP at 33866 Calle La Primavera. Nonetheless, in the event of an accidental release during construction, containment and clean up would occur in accordance with existing applicable regulatory requirements to protect school attendees.

Operation and maintenance activities associated with the proposed improvements would require routine transport, storage, use, and disposal of hazardous materials for purposes of treatment of wastewater and solids (e.g., chlorine, sodium hypochlorite, hydrogen peroxide). Hazardous materials would be stored in accordance with existing local and state regulations and would not impact Saint Edward's Catholic School. Therefore, no impacts would occur regarding accidental release of hazardous materials within 0.25 mile of a 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?

No Impact. The proposed project would be implemented entirely within Plant 2. 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). A database search of hazardous materials sites using the online DTSC EnviroStor and State Water Resources Control Board (SWRCB) GeoTracker databases identified the project area as having one closed leaking underground storage tank (LUST) cases (DTSC, 2018b; SWRCB, 2015).

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. The LUST at JBLTP is a closed case because the tank 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.

Two additional open LUST sites were identified within 0.25-mile radius of the project area: Chevron Gas Station and Mobile Gas Station. These locations and the immediate project area are not listed on any other regulatory agency list as having had a known release of hazardous materials. Therefore, no significant hazards to the public or the environment would occur.

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 17.5 miles to the northwest 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. The nearest private airstrip is GSA Laguna Niguel Helistop, located approximately 6.7 miles northwest 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 the JBLTP. SOCWA currently implements an Emergency Response Program 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 JBLTP. The Emergency Response Program 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 JBLTP. Construction activities would not interfere with emergency response access to JBLTP or 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 JBLTP property located within the coastal zone and is not located within or in the vicinity of a high fire hazard zone (CAL FIRE, 2011). 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.

References

California Department of Forestry and Fire Protection (CAL FIRE), 2011. Very High Fire Hazard Severity Zones in LRA, Orange County. Available at: http://frap.fire.ca.gov/webdata/maps/orange/fhszl_map.30.pdf, accessed February 23, 2018.

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State Water Resources Control Board (SWRCB), 2015. GeoTracker. Available at: https://geotracker.waterboards.ca.gov/, accessed February 23, 2018.

4.9 Hydrology and Water Quality

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
9.	**HYDROLOGY AND WATER QUALITY — Would the project:**				
a)	Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of 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?	☐	☐	☒	☐

Environmental Evaluation

Would the project:

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

Less than Significant Impact. The proposed project may include nominal earthwork activities such as excavation or grading; however, the proposed project would require site preparation, demolition, and repaving which could include the stockpiling of soils. These construction activities may involve the disturbance of surface soils. Once disturbed, these soils could be exposed to the effects of wind and water erosion causing sedimentation in stormwater runoff. Construction would also involve use of chemicals and solvents such as fuel and lubricating grease for motorized heavy equipment. Inadvertent spills or releases of such chemicals could cause an adverse water quality impact. Please refer to the Hazards and Hazardous Materials section above for additional information.

As discussed above, SOCWA would be required to comply with the City of Dana Point's erosion control, sediment control, non-stormwater, stormwater, and waste and material management BMPs to minimize the loss of topsoil or substantial erosion, which could cause sedimentation in stormwater runoff. BMPs that could be used to enhance erosion control include scheduling to avoid wet weather events; hydraulic mulching; hydroseeding; using soil binders; straw mulching; using geotextiles, plastic covers, and erosion control blankets/mats; and wood mulching. BMPs would also include practices for proper handling of chemicals such as avoidance of fueling at the construction site and overtopping during fueling, and installation of containment pans. These BMPs would be implemented in accordance with the City's MS4 Permit, issued by the SDRWQCB and City of Dana Point Ordinance No. 03-17. Further, implementation of the construction BMPs would be consistent with the Orange County Stormwater Program and would begin with the commencement of construction and continue through the completion of the project (OC Public Works, 2018).

The implementation of standard construction procedures and precautions, and compliance with the Orange County Stormwater Program requirements would also ensure that the water quality impacts related to the handling of hazardous materials from proposed project construction would be less than significant.

Additionally, SOCWA frequently updates their On-Site Stormwater Management Plan (SWMP). The SWMP regulates stormwater management for construction at and operation of the JBLTP. The SWMP is frequently updated and complies with the City's MS4 Permit, local ordinances, and the Orange County stormwater Program, described above. 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. The proposed project would not result in an impact to groundwater supplies. During construction, the project area may be watered during dry and windy conditions to prevent dust and debris from migrating off-site. The demand for construction watering would be minor and temporary during intermittent construction times. Construction activities such as dewatering could potentially deplete groundwater supplies or interfere with groundwater recharge. Because the proposed project may include nominal excavation or subsurface trenching, no dewatering would be required. Therefore, the proposed project would not substantially deplete groundwater supplies or interfere with groundwater recharge during construction. Impacts would be less than significant.

The proposed project includes the construction of upgraded or replacement of wastewater treatment equipment and facilities at JBLTP. Operation of the proposed improvements would have no direct effect on groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table. No impact would occur.

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. The proposed project would not alter the course of a stream or river. Earth-moving activities would occur during demolition and repaving that would slightly alter the topography of the project area. Erosion control measures (introduced above) would be implemented to reduce surface runoff impacts during construction. These control measures would reduce potential impacts to less than significant.

During operation, the proposed project would not involve activities that could substantially impact local drainage patterns such as substantial grading, topographic alteration, or impacts to drainages or storm drain facilities. However, following demolition of the laboratory building, a portion of the project area would be highly disturbed and this could alter the existing drainage pattern of the site. This area would be repaved to accommodate potential changes in overland flow after project implementation. The existing plant-wide drainage system is adequate to capture/convey flows to JBLTP headworks. Therefore, the proposed project would not alter the existing drainage pattern of the project area in a way such that substantial flooding, erosion, or siltation would occur. Impacts would be less than significant.

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

Less than Significant Impact. As stated above, the proposed project would not substantially alter the local drainage pattern. Stormwater runoff within the project area is currently captured and conveyed to the headworks for treatment prior to discharge to the ocean. The proposed project would use minimal water during construction and operation and would thereby not generate a large amount of runoff as a result of on-site activities. No stream or river traverses the project site. San Juan Creek is located just east of the project area but project implementation would not increase the rate or amount of surface runoff in a manner which would result in flooding on-site, off-site, or into the San Juan Creek. BMPs discussed above would control drainage on-site, thereby reducing its potential to cause flooding. Therefore, flooding impacts resulting from drainage pattern alteration 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. The proposed project would be served by JBLTP's existing stormwater drainage system. Temporary construction activities such as demolition and repaving could introduce additional pollutants and sediment into the surface water runoff. Stormwater runoff generated on the project area during operation would continue to be conveyed to the JBLTP headworks. Stormwater from the project site would not be directly conveyed to adjacent properties including San Juan Creek. The proposed project would implement BMPs during construction and operation that would reduce the rate of stormwater runoff and pollutants. Therefore, the proposed project would not generate runoff that would exceed the existing stormwater drainage system or create additional polluted sources of runoff. Impacts regarding exceedance of storm drain systems and creation of polluted runoff would be less than significant.

f) Otherwise substantially degrade water quality?

Less than Significant Impact. Refer to response 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 FEMA Flood Insurance Rate Map (FIRM) for the project area (FIRM No. 06059C0508J) shows that the project area is located within Zone A "Without Base Flood Elevation (BFE)" and Zone X "Other Flood Areas" location. This area is within a 100-year flood zone within a regulatory floodway (FEMA, 2018); however, because no housing is proposed, there would be no impacts 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. As stated above, the project area is located adjacent to San Juan Creek and near the Pacific Ocean; however, the area is partially protected by the San Juan Creek Flood Control Channel, which is owned and maintained by the Orange County Flood Control District (OCFCD). The proposed improvements would not include resident populations. Further, the City of Dana Point has an Emergency Management and Homeland Security Program (City of Dana Point, 2018) which includes procedures and evacuation plans in the event of flooding. Additionally, the proposed improvements themselves would not impound water or increase the risk of loss, injury or death if a 100-year flood event were to occur within the project area. For these reasons, potential impacts related to placing structures within a 100-year flood hazard area would be considered less than significant.

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 not located in a City-designated dam inundation flood zone (City of Dana Point, 1991). Refer to discussion h) above. Therefore, impacts related to flooding including failure of a levee or dam would be less than significant.

j) Inundation by seiche, tsunami, or mudflow?

Less than Significant Impact. A seiche is the sloshing of a closed body of water from earthquake shaking (USGS, 2018a). No closed 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. Further, the proposed project would be located in a relatively flat area within the existing JBLTP boundary, which would not be susceptible to mudflows. No impacts regarding seiches or mudflows would occur.

A tsunami is a sea wave of local or distant origin that results from large-scale seafloor displacements associated with earthquakes, major submarine slides or exploding volcanic islands (USGS, 2018b). An event such as an earthquake creates a large displacement of water resulting in a rise or mounding at the ocean surface that moves away from this center as a sea wave. The California Geological Survey (CGS) has created maximum tsunami inundation maps to assist cities in the development of emergency response plans if such an event were to occur. The project area is located approximately 0.3-mile north of the Pacific Ocean and based on the tsunami inundation map, the site is located within the tsunami risk zone. No flood elevations are assigned to the mapped inundation line. There is no known means available to protect the existing JBLTP facilities or proposed improvements from a tsunami. However, because the proposed improvements would not include resident populations, and the City of Dana Point has an Emergency Management and Homeland Security Program which includes procedures and evacuation plans in the event of flooding caused by tsunamis, potential tsunami impacts are considered less than significant.

Refer to the Geology, Soils, and Seismicity Section above for potential impacts from landslides.

References

OC Public Works, 2018. OC Stormwater Program. Available at: http://www.ocwatersheds.com/programs/waterways/stormwater, accessed February 23, 2018.

City of Dana Point, 1991. City of Dana Point General Plan, Public Safety Element. Available at: http://www.danapoint.org/home/showdocument?id=198, accessed February 23, 2018.

City of Dana Point, 2018. CERT Program Details. Available at: http://www.danapoint.org/department/public-safety/emergency-services/cert/cert-program-details, accessed February 23, 2018.

Federal Emergency Management Agency (FEMA), 2018. FEMA Flood Map Service Center, Dana Point, CA. Available at: https://msc.fema.gov/portal, accessed February 23, 2018.

U.S. Geological Survey (USGS), 2018a. Seismic Seiches. Available at: https://earthquake.usgs.gov/learn/topics/seiche.php, accessed February 23, 2018.

USGS, 2018b. Earthquake Glossary, Tsunami. Available at: https://earthquake.usgs.gov/learn/glossary/?term=tsunami, accessed February 23, 2018.

4.10 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*
10. LAND USE AND LAND USE PLANNING — Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Physically divide an established community?

No Impact. The 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 the proposed improvements on the existing JBLTP property, 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?

Less than Significant Impact. The proposed improvements would be consistent with the existing treatment facilities and on-site uses. The project area is located within the City of Dana Point's Coastal Zone and is subject to the Local Coastal Program (LCP). The LCP consists of a Coastal Overlay District and the City of Dana Point General Plan Land Use Element (City of Dana Point, 1991). The Coastal Overlay District, found in the City of Dana Point Municipal Code Chapter 9.27, includes definitions, permitted, accessory and conditional uses within the coastal zone, and specific development standards to be used by decision makers when reviewing coastal-related issues and proposed development within the Coastal Zone boundary (City of Dana Point, 2018). The project area is designated under Community Facility land uses and is zoned as DP Specific Plan Area, with a Coastal Overlay Zone (City of Dana Point, 2012).

The proposed improvements would not introduce new uses or facilities that are larger in scale or structural heights that are greater than existing uses at the JBLTP; therefore, the proposed project would not conflict with the development limitations allowed in the Community Facility or Specific Plan Area Zone (City of Dana Point, 2018a).

The proposed project is located within the LCP Land Use designation “Appeal Jurisdiction” (P.R.C 30613). The area includes lands where the Coastal Commission has delegated original permit jurisdiction to the City of Dana Point for areas potentially subject to public trust but which are filled, developed or committed to urban uses (City of Dana Point, 2018).

A Coastal Development Permit (CDP) is required for all development, as defined in Section 9.75.040, located within the Coastal Overlay District, except for development specifically exempted pursuant to Section 9.69.040. According to Section 9.69.040(9), the proposed project is not exempt from a CDP because the proposed project includes improvements to a public works facility (City of Dana Point, 2018b). Therefore, to be consistent with both the General Plan and LCP, SOCWA would be required to obtain a CDP from the City of Dana Point for the proposed improvements on the project site prior to construction. Based on the proposed project not introducing new uses or facilities that are larger in scale or structural heights that are greater than existing uses at the JBLTP, the proposed improvements would be consistent with the current coastal policies of the City, and impacts would be less than significant.

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

No Impact. Refer to Impact f) within the Biological Resources section above.

References

City of Dana Point, 2018a. Dana Point Municipal Code. Chapter 9.27 Coastal Overlay District. Available at: https://qcode.us/codes/danapoint/, accessed February 23, 2018.

City of Dana Point, 2018b. Dana Point Municipal Code. Chapter 9.69 Coastal Development Permit, 9.69.040 Exemptions. Available at: https://qcode.us/codes/danapoint/, accessed February 23, 2018.

City of Dana Point, 2012. City of Dana Point Zoning Map. Available at: http://www.danapoint.org/Home/ShowDocument?id=111, accessed February 23, 2018.

4.11 Mineral Resources

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

Environmental Evaluation

Would the project:

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

No Impact. According to the 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 JBLTP; however, this well is "plugged" and abandoned, 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 Dana Point General Plan (City of Dana Point, 1991) 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.

References

California Department of Conservation (DOC), 2018. Division of Oil, Gas, and Geothermal Resources Well Finder. Available at: https://maps.conservation.ca.gov/doggr/wellfinder/#close, accessed February 23, 2018.

City of Dana Point, 1991. City of Dana Point General Plan, Conservation/Open Space Element. Available at: http://www.danapoint.org/home/showdocument?id=205, accessed February 23, 2018.

U.S. Geologic Survey (USGS), 2018. Mineral Resources Data System. Available at: https://mrdata.usgs.gov/mineral-resources/mrds-us.html, accessed February 23, 2018.

4.12 Noise

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
12. 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

The following analysis is based on the Noise and Vibration Technical Report prepared by ESA located in **Appendix D** of this IS/MND (ESA, 2018). The report describes the existing ambient noise in the project area, identifies applicable noise regulations, and evaluates potential short- and long-term noise impacts associated with the build-out of the project. Additionally, the report provides background information on vibration and evaluates potential impacts associated with the project's contribution to ambient vibration levels. Where applicable, measures to mitigate or minimize noise and vibration impacts associated with the project are included. Information used to prepare the analysis was obtained from SOCWA, City of Dana Point General Plan and Noise Ordinance.

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.

Numerous methods have been developed to measure sound over a period of time, including: Equivalent Sound Level (Leq), Community Noise Equivalent Level (CNEL), Day/Night Average Sound Level (Ldn) and Maximum Noise event (Lmax). Noise level can vary depending on the noise source and duration. Below are descriptions of the units of measure used in this analysis to describe the noise environment.

- Leq: 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 Leq). For example, the noise levels exceeded on 10 percent of readings is called L10, the median (50th percentile) reading is called L50, etc.
- CNEL: Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law requires that, for planning purposes, an artificial dB increment penalty be added to quiet-time noise levels in a 24-hour noise descriptor called CNEL.
- Ldn: Another commonly used method is the day/night average level or Ldn.
- Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by USEPA for developing criteria for the evaluation of community noise exposure.
- Lmax: The maximum noise level recorded during a noise event is typically expressed as Lmax.

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.

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.

Construction

Onsite Construction Noise

Construction of the proposed project would require the use of heavy equipment at the project site. During each stage of construction, there would be a different mix of equipment. As such, construction activity noise levels at and near the project site would fluctuate depending on the particular type, number, and duration of use of the various pieces of construction equipment.

Individual pieces of construction equipment anticipated during project construction could produce maximum noise levels of 74 dBA to 90 dBA L_{max} at a reference distance of 50 feet from the noise source, as shown in **Table 4,** *Construction Equipment Noise Levels*. 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 4. The usage factors are based on FHWA's RCNM User's Guide.[1]

TABLE 4
CONSTRUCTION EQUIPMENT NOISE LEVELS

Construction Equipment	Noise Level at 50 Feet (dBA, Lmax)	Estimated Usage Factor, %
Aerial Lift	75	20%
Air Compressor	78	50%
Backhoe	80	40%
Compactor (Ground)	83	20%
Concrete Mixer Trucks	79	40%
Concrete Saw	90	20%
Cranes	81	40%
Dozer	82	40%
Excavators	81	40%
Forklift	75	10%
Paver	77	50%
Sand Blaster	85	50%
Welders	74	40%

Source: FHWA Roadway Construction Noise Model, 2006.

During project construction, the nearest offsite sensitive receptors that would be exposed to increased noise levels would be the existing single-family residential uses and future residential condominiums located in proximity to the project site. Specifically, the nearest offsite noise sensitive receptors include the following:

- Single-family residences along Del Obispo Street approximately 250 feet west of the project construction site; and
- Future residential condominiums along Del Obispo Street approximately 30 feet south of the project construction site.
- Del Obispo Park and the Dana Point Community Center approximately 30 feet north of the project construction site.
- San Juan Creek Trail approximately 30 feet east of the project construction site.

Over the course of a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are being operated concurrently. As discussed previously, the project's estimated construction noise levels were calculated for a scenario in which all construction equipment was assumed to be operating simultaneously and some of them located at the construction area nearest to the affected receptors to present a conservative impact analysis.

1 Federal Highway Administration, Roadway Construction Noise Model User's Guide, 2006.

The estimated noise levels at the offsite sensitive receptors were calculated using the FHWA's RCNM, and were based on the concurrent operation of 15 pieces of equipment (i.e., dozer, backhoe, excavator, cranes, concrete truck, etc.) which is considered a worst-case evaluation because the project would use less overall equipment on a daily basis, and as such would generate lower noise levels. **Table 5**, *Estimated Construction Noise Levels at Offsite Sensitive Uses*, shows the estimated construction noise levels that would occur at the nearest offsite sensitive uses during a peak day of construction activity at the project site.

TABLE 5
ESTIMATED CONSTRUCTION NOISE LEVELS AT OFFSITE SENSITIVE USES

Offsite Sensitive Land Uses	Location	Approximate Distance to Project Construction Site (ft.)[1]	Estimated Maximum Construction Noise Levels (dBA L_{eq})
R1: Single-family residential uses	West of the project site	250	66[2]
R2: Future residential condominiums	South of the project site	30	81[2]
R3: Del Obispo Park and Dana Point Community Center	North of the project site	30	86
R4: San Juan Creek Trail	East of the project site	30	86

1 The distance represents the nearest construction area on the project site to the property line of the offsite receptor.
2 Receptors are partially shielded from the construction site by existing walls; and such shielding is included in the analyses representing a 5 dBA reduction in noise levels.
3 The significance thresholds are the lowest daytime ambient noise levels as shown in Table 1 plus 5 dBA.

SOURCE: ESA, 2016.

As discussed above, the noise threshold utilizing the OSHA standard limits of noise exposure is being used. This standard is 90 dB or less over eight continuous hours, or 105 dB or less over one continuous hour. As shown in Table 5, the estimated combined construction equipment noise level would be a maximum of 86 dBA over a course of one day (i.e., 8 hours). This noise level would not exceed the noise level standard of 90 dB over 8 continuous hours. Therefore, construction noise impacts would be less than significant.

Off-Site Construction Traffic Noise

Delivery truck and haul truck trips would occur throughout the construction period. Trucks traveling to and from the project site would be required to travel along Del Obispo Street. It is anticipated that a maximum of approximately 20 worker's vehicle trips and 10 truck trips would occur per day.

The project's construction related traffic would generate noise levels of approximately 48.9 dBA L_{eq} at along Del Obispo Street. As shown in Table 4, the existing noise levels along Del Obispo Street is 66.4 dBA L_{eq}. Noise levels of 48.9 dBA L_{eq} generated by construction-related traffic as shown in Appendix B would increase the ambient noise levels by 0.1 dBA along Del Obispo Street when combining the ambient noise levels and noise from project construction traffic. Additionally, the construction is temporary in nature and would only take place for temporarily after which the project would cease to have any significant lasting noise impact on the surrounding areas from construction trips. Therefore, off-site construction traffic noise 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. Construction activities at the project site have the potential to generate low levels of groundborne vibration as the operation of heavy equipment (i.e., compactor, backhoe, dozer, excavators, haul trucks, etc.) generates vibrations that propagate though the ground and diminish in intensity with distance from the source. No high-impact activities, such as pile driving or blasting, would be used during project construction. The nearest offsite receptors to the project site that could be exposed to vibration levels generated from project construction include future residential condominiums south of the project site. These residential condominiums are approximately 45 feet from the nearest construction area on the JBLTP. Groundborne vibrations from construction activities very rarely reach the levels that can damage structures, but they may be perceived in buildings very close to a construction site.

The PPV vibration velocities for several types of construction equipment, along with their corresponding RMS velocities (in VdB), that can generate perceptible vibration levels are identified in **Table 6**, *Vibration Source Levels for Construction Equipment*. Based on the information presented in Table 6, vibration velocities could range from 0.003 to 0.089 in/sec PPV at 25 feet from the source of activity.

TABLE 6
VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

	Approximate PPV (in/sec)					Approximate RMS (VdB)				
Equipment	**25 Feet**	**50 Feet**	**60 Feet**	**75 Feet**	**100 Feet**	**25 Feet**	**50 Feet**	**60 Feet**	**75 Feet**	**100 Feet**
Large Bulldozer	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Concrete Mixer Trucks	0.076	0.027	0.020	0.015	0.010	86	77	75	72	68
Small Bulldozer	0.003	0.001	0.0008	0.0006	0.0004	58	49	47	44	40

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

Table 7, *Groundborne Vibration Levels at Offsite Sensitive Uses Compared to Caltrans' and FTA Vibration Damage Potential Threshold*, shows the estimated construction-related groundborne vibration levels that could occur at the nearest offsite structures during construction at the project site and a comparison to the identified significance threshold.

As shown in Table 7, the vibration velocities forecasted to occur at the offsite sensitive receptors could potentially reach 0.037 in/sec PPV (or 79 VdB) at the nearest multiple-family residential (condominiums) uses.

TABLE 7
GROUNDBORNE VIBRATION LEVELS AT OFFSITE SENSITIVE USES COMPARED TO CALTRANS' AND FTA VIBRATION DAMAGE POTENTIAL THRESHOLD

Offsite Sensitive Land Use	Approximate Distance to Project Site (ft.)[a]	Estimated PPV (in/sec)/VdB	Caltrans' Vibration Damage Potential Threshold, PPV (in/sec)[b]	FTA Vibration Damage Potential Threshold, PPV (in/sec)[c]	Exceed Caltrans' or FTA Vibration Threshold? (Yes or No)
Future residential condominiums south of the project site	30	0.037/79	0.5	0.5	No

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

a Approximate distances are measured from the nearest construction area within the project site where vibration levels would be generated to the nearest offsite structure.
b Caltrans' Vibration Damage Potential Thresholds were taken from Table 4.
c FTA Vibration Damage Potential Thresholds were taken from Table 2.

SOURCE: ESA, 2018.

Under the FTA construction vibration damaged criteria, the existing residential structures are considered "reinforce-concrete, steel or timber (no plaster)". With respect to the vibration sources associated with project construction, it is anticipated that continuous/frequent intermittent sources of vibration, as defined under Caltrans' criteria, would occur from compaction activities at the project site, although no pile-driving would be required. As such, the vibration level criteria for continuous/frequent intermittent sources are used in this analysis.

Based on the information shown in Table 7, which shows an estimated PPV of 0.067 in/sec, none of the existing offsite residential structures (considered as "new residential structures" and "reinforced-concrete, steel or timber" under the Caltrans' and FTA construction vibration damage criteria, respectively) located south of the project site would be exposed to PPV groundborne vibration levels exceeding the FTA and Caltrans' 0.5 in/sec damage criteria. As such, the vibration impacts at these residential structures would be less than significant.

With respect to human annoyance, the City Noise Element identifies residential areas as noise-sensitive land uses. Currently, sensitive uses that are located nearest to the project site include the multiple-family uses immediately south of the project site. Under the Caltrans' vibration annoyance potential criteria, vibration levels exceeding 0.04 in/sec PPV for continuous/frequent intermittent sources would be considered distinctly perceptible. In addition, under the FTA vibration impact criteria for general assessment, residential receptors are considered to be a Category 2 land use. Vibration levels exceeding 80 VdB for infrequent events would be considered an impact at land uses under this FTA category. As shown in Table 7, the future residential receptors located immediately south of the project site would be exposed to vibration levels of 0.037 in/sec PPV (or 79 VdB) which would not exceed the Caltrans' 0.04 in/sec PPV distinctly perceptible threshold and would not exceeds the FTA's 80 VdB impact threshold. Thus, vibration impacts related to human annoyance would be less than significant.

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

No Impact. The proposed project would not change the operation of facilities on JBLTP. Therefore, operational noise impacts would not occur.

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 under Impact a) above, the proposed project's construction activities could expose the noise sensitive receptors. A project would normally have a significant impact on noise levels from construction if the project construction activities expose residents or workers to more than 90 dBA for over eight continuous hours, or more than 105 dB for over one continuous hour. It was determined that construction noise levels would not expose the noise sensitive receptors or workers to more than 90 dBA for over eight continuous hours at the nearest offsite sensitive receptors. Thus, short-term noise impacts from construction would be less than significant at these sensitive offsite locations.

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. As described above in impact analysis e), Hazards and Hazardous Materials, the nearest airport to the project area is the John Wayne Airport, located approximately 17.5 miles to the northwest. 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.

References

ESA, 2018. *JB Latham Treatment Plant Facility Improvements Project, Dana Point, California, Noise and Vibration Technical Report*. February 2018.

4.13 Population and Housing

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

Environmental Evaluation

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less than Significant Impact. A project could induce population growth in an area directly or indirectly. For example, direct population growth can occur by introducing new business or residential areas and indirect growth by extending roads or other infrastructure. The proposed project does not include construction of new homes or businesses that would result in a direct increase in population or create a substantial numbers of jobs. While the proposed project could result in temporary employment during construction, the on-site workforce for construction is expected to be negligible for a short duration. The construction workers would likely come from the existing labor pool in the general vicinity.

The proposed project is designed to accommodate existing wastewater treatment processes at the JBLTP by upgrading and improving various facilities. The proposed project would not increase the facility's treament capacity or require capacity amendments to the facility's National Pollutant Discharge Elimination System (NPDES) permit. Rather, the proposed project would allow SOCWA to continue to provide wastewater treatment services in its service area and to meet forecasted demand and potential growth in the service area. 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 the JBLTP site, 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.

4.14 Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
14. 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?	☐	☐	☐	☒

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. Fire services for the City of Dana Point are provided by Orange County Fire Authority (OCFA). OCFA stations 29 and 30 are located within the City of Dana Point, and provide the primary response for fire suppression and emergency medical services to the community (City of Dana Point, 2018a). The nearest station to the project area is Station 29 located approximately 0.50-mile east at 26111 Victoria Blvd. The proposed project would not change existing demand for fire protection services because operation would not result in an increase of onsite employees or population. Therefore, the proposed project would not increase the need for new fire department staff or new facilities and no impacts would occur.

ii) Police protection?

No Impact. The City of Dana Point is provided with police protection services by the Orange County Sheriff's Department (OCSD) (City of Dana Point, 2018b). The Dana Point Police Department is located 1.1 miles northwest of the project area at 33282 Street of the Golden Lantern No. 140. 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 OCSD 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 police protection facilities would not be needed.

iii) Schools?

No Impact. The project area lies within the Capistrano Unified School District (CUSD) service area (CUSD, 2018). The student generation rates within (CUSD) would not be affected or altered by the implementation of the proposed project. The proposed project would not affect local school enrollment. No school facilities would be impacted by the proposed project or be required to be constructed.

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 San Juan Creek Trail and Del Obispo Park; 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.

References

City of Dana Point, 2018a. Fire Services. Available at: http://www.danapoint.org/department/public-safety/fire-services, accessed February 23, 2018.

City of Dana Point, 2018b. Orange County Sheriff's Department. Available at: http://www.danapoint.org/department/public-safety/police-services, accessed February 23, 2018.

Capistrano Unified School District (CUSD), 2018. Capistrano Unified School District. Available at: http://capousd.ca.schoolloop.com/, accessed February 25, 2018.

4.15 Recreation

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
15. 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?	☐	☐	☐	☒

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. Orange County Parks (OC Parks) and the City of Dana Point maintain the local parks and provide recreational services for the project area. The nearest recreational facility is the San Juan Creek Trail and Del Obispo Park located adjacent to the project area (OC Parks, 2018). The proposed project would not directly introduce new residents within the project area. Therefore, the proposed project would not increase the use of these existing recreational facilities within the project area 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.

4.16 Transportation and Traffic

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
16. 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?	☐	☐	☐	☒

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. Project area access would be provided via the southern entrance located off Del Obispo Street on the west side of JBLTP. The Orange County Transit Authority and the City of Dana Point operate bus services in the project area. Route 91 runs on Del Obispo Street, with a southbound bus stop directly adjacent to the JBLTP site and a northbound bus stop at the corner of Del Obispo Street and Pacific Coast Highway.

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 and the delivery and disposal of materials throughout the construction period. The estimated haul truck traffic would vary depending on the construction activity; however, it is estimated that there would be a maximum of 10 trucks per day (including delivery and disposal). The haul trucks would exit the JBLTP site at Del Obispo Street The addition of a maximum of 10 trucks (20 one way trips) along Del Obispo Street would not substantially affect the capacity of Del Obispo Street or Pacific Coast Highway. Therefore, no significant construction traffic impacts would occur from off-site construction traffic.

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 increase permanent employees traveling to the project area. Employees currently provide routine facility maintenance activities at the existing JBLTP facilities. These maintenance activities would continue with the proposed improvements. 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 Impact 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 the John Wayne Airport, located approximately 17.5 miles to the northwest at 18800 MacArthur Blvd in the City of Costa Mesa. 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 the JBLTP 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. In addition, the proposed project 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. Refer to response to Impact g) from Hazards and Hazardous Materials, and Impacts a) and d) above.

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 the JBLTP. 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. There is currently one bus service (Route 91) on the west side of Del Obispo Street, just west of the JBLTP; however, project construction and operation would not disrupt services along this route. Further, the San Juan Creek Trail allows pedestrians to travel along San Juan Creek just adjacent to the project area; however, all construction and operation would take place within the JBLTP boundary, and would not impact travel along this trail. No impacts would occur.

4.17 Tribal Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
17. 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

On January 9, 2018, a Sacred Lands File Search (SLF) search request letter was sent to the Native American Heritage Commission (NAHC) in an effort to determine whether any sacred sites are listed on SLF for the project area. A response was provided on January 10, 2018 indicating negative results for Native American cultural resources within the project area.

On March 12, 2018, SOCWA sent AB 52 notification letters related to the proposed project to the following Native American Tribes in accordance with PRC Section 21080.3.1: Campo Band of Mission Indians, Ewilaapaayp Tribe, Juaneño Band of Mission Indians/Acjachemen Nation-Romero, Juaneño Band of Mission Indians/Acjachemen Nation-Belardes, Juaneño Band of Mission Indians/Acjachemen Nation, Jumul Indian Village, La Posta Band of Mission Indians, Manzanita Band of Kumeyaay Nation, Pauma Band of Luiseño Indians – Pauma and Yuima Reservation, San Pasqual Band of Mission Indians, Sycaun Band of Kumeyaay Nation, and Viejas Band of Kumeyaay Indians. The AB 52 notification letters that were sent to the Tribes included a description of the proposed project, a map depicting the project location, and contact information for SOCWA. See Appendix C of this IS/MND for copies of the AB 52 consultation letters.

SOCWA received one response from the Viejas Tribal Government dated March 19, 2018. The letter indicated that the project area has little cultural significance or ties to Viejas (see Appendix C). No other Tribes responded to the AB 52 notification letter.

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 on the project site. The results provided by the NAHC on January 10, 2018 indicated that the SLF search yielded negative results. SOCWA received one letter indicating that the project site has little or no cultural significance to the Viejas, and no other Tribes described any known tribal cultural resources within the area. Therefore, the implementation of the proposed project would result in no impacts to known tribal cultural resources. In the unexpected case that a potential tribal cultural resource is found, SOCWA would consult with appropriate Native American representatives in determining treatment for the Native American resources to ensure cultural values ascribed to the resource are considered, as required by Mitigation Measure CUL-4 provided in discussion 4.5. b), above.

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. Refer to discussion 17. a), above.

4.18 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 construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider 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?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

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

Less than Significant Impact. The project would include construction of improvements to various facilities and demolition within the JBLTP boundary. During project construction of the proposed facilities, 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 permitted portable toilet waste hauler and appropriately disposed of at the waste hauler station at JBLTP. These waste disposal stations are permitted by the San Diego 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. Therefore, impacts would be less than significant.

During operation, the proposed improvements would treat waste water. However, the facilities themselves would not generate wastewater, and therefore, would not exceed wastewater treatment requirements. In addition, surface water drainage at the JBLTP 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 R9-2012-0012, and subsequent amendment R9-2014-0105 (SWRCB, 2018). 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 construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact. The proposed project would upgrade and enhance the existing wastewater treatment facilities at JBLTP to accommodate for future expansions or construction of new wastewater treatment facilities on-site. The proposed project would not directly necessitate the construction or expansion of existing facilities, the construction of which could cause significant environmental effects. Therefore, impacts would be less than significant.

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?

Less than Significant Impact. The construction of proposed improvements would require activities such as pavement breaking and demolition, which would temporarily alter the project site's existing ground surface and drainage patterns. However, these potential changes to drainage courses would be temporary, and would not require the construction or expansion of stormwater drainage facilities in addition to those already located at the JBLTP. The JBLTP is equipped with an internal drainage system designed to collect and treat stormwater and collect wastewater and chemical spills from the treatment facilities, which is then conveyed back to the plant's headworks for treatment. Construction of the proposed improvements would not require a new system or require the expansion of any off-site stormwater drainage facilities. Impacts would be less than significant.

During operation, the proposed project would not involve activities that could substantially impact local drainage patterns such as substantial grading, topographic alteration, or impacts to drainages or storm drain facilities. However, following demolition of the laboratory building, a portion of the project area would be highly disturbed, and this could alter the existing drainage pattern of the site. This area would be repaved to accommodate potential changes in overland flow after project implementation. The existing plant-wide drainage system is adequate to capture/convey flows to JBLTP headworks. Therefore, the proposed project would modify the existing system but would not require a new system or require the expansion of any off-site stormwater drainage facilities. Impacts would be less than significant.

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 the JBLTP 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. SOCWA would not be required to provide future capacity as result of proposed project implementation. The proposed project would not impact wastewater treatment capacity.

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 substantial amount of solid waste. The construction contractor would be required to dispose of demolition material and solid wastes in accordance with local solid waste disposal requirements. Landfills in the project vicinity include the Frank R. Bowerman Landfill, Olinda Alpha Landfill, and Prima Deshecha Landfill, all of which have sufficient capacity to accommodate the solid waste disposal needs of the proposed project. The solid waste generated during construction of the proposed improvements would mainly consist of general construction debris, building material wrapping, and worker personal waste. In addition, the project also includes the demolition of the laboratory building.

The portion of construction waste that is not diverted for recycling would likely be disposed of at the Prima Deshecha Landfill located at 32250 Avenida La Pata in the City of San Juan Capistrano, located approximately 4.5 miles northeast of the project area. However, all the landfills within the project vicinity could serve the project. The three landfills permit thousands of tons of waste per day, which is well beyond the expected amount of waste that would be generated by the program during construction. Further, these landfills are expected to continue to operate for 5-40 more years, and combined, have adequate permitted remaining capacity of 326,584,799 cubic yards. The landfills are Class III which permits non-hazardous solid waste. Impacts regarding permitted remaining landfill capacity would be less than significant.

Operation of the proposed project would not change the projected number of daily or annual truck trips to and from JBLTP. Because the proposed project would not increase the amount of solid waste being diverted to landfills, the project would not exceed landfill capacities. Therefore, the project's impact on landfills would be less than significant.

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 and demolition requirements during construction of the proposed improvements. All construction materials would be hauled offsite by truck to an appropriately permitted recycled waste or solid waste facility. The daily amount of soil to be disposed per day would not exceed the maximum permitted capacity. The proposed program would be in compliance with all federal, State, and local statues related to solid waste disposal. Therefore, the proposed project would result in no impacts associated with solid waste statutes and regulations during construction activities.

The City of Dana Point and the County are required to comply with the California Integrated Waste Management Act of 1989, requiring diversion of solid waste from landfills through reuse and recycling. The project would be required to recycle during its operation; however, since the project would not alter existing operations, recycling would not be affected. The proposed project would result in no impacts associated with solid waste statutes and regulations during operational activities.

References

SWRCB, 2018. San Diego Region. ORDER NO. R9-2012-0012 as Amended by Order No. R9-2014-0105 NPDES NO. CA0107417. Available at: https://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2012/R9-2012-0012_Amended.pdf, accessed February 25, 2018.

CalRecycle, 2005. Prima Deshecha Sanitary Landfill (30-AB-0019). Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/30-AB-0019/Detail/, accessed February 25, 2018.

CalRecycle, 2008. Frank R. Bowerman Sanitary LF (30-AB-0360). Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/30-AB-0360/Detail/, accessed February 25, 2018.

CalRecycle, 2014. Olinda Alpha Sanitary Landfill (30-AB-0035). Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/30-AB-0035/Detail/, accessed February 25, 2018.

Orange County Waste & Recycling, 2018. Active Landfills. Available at: http://www.oclandfills.com/landfill, accessed February 25, 2018.

4.19 Energy

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

Environmental Evaluation

In accordance with the requirements under the California Environmental Quality Act (CEQA), this section provides an estimate of energy consumption for the project and the potential impacts from associated construction activities. Because the project includes the repair and replacement of existing components and is not adding new processes, there will be no new operational activities, and therefore, no new operational emissions. As operational emissions from the site will not change from the current existing conditions, operational activities are not addressed in this analysis. The analysis in this section is summarized from the full analysis included in Appendix A of this IS/MND.

The evaluation of the proposed project's potential impacts related to energy usage, including electricity, natural gas, and transportation fuel. Energy consumption during construction is assessed. The project's estimated energy consumption was calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2. Energy consumption associated the supply and conveyance of water used for dust control as well as electricity used for powering lighting, electronic equipment, and other construction activities is assumed to be negligible. Additionally, there is no consumption of natural gas associated with construction activities. Therefore, this analysis is limited to a discussion of transportation energy associated with construction activities.

Would the project:

a) Violate State or federal Energy standards?

Less than Significant Impact. The project would comply with applicable CARB regulations restricting the idling of heavy-duty diesel motor vehicles and governing the accelerated retrofitting, repowering, or replacement of heavy duty diesel on- and off-road equipment. As discussed previously, CARB has adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants. The measure prohibits diesel-fueled commercial vehicles greater than 10,000 pounds from idling for more than five minutes at any given time. While intended to reduce construction emissions, compliance with the above anti-idling and emissions regulations would also result in energy savings from the use of more fuel efficient engines. According to the CARB staff report that was prepared at the time the anti-idling Airborne Toxic Control Measure was being proposed for adoption in late 2004/early 2005, the regulation was estimated to reduce non-essential idling and associated emissions of diesel particulate matter and nitrogen oxide (NOx) emissions by 64 and 78 percent respectively in analysis year 2009. These reductions in emissions are directly attributable to overall reduced idling times and the resultant reduced fuel consumption.

CARB has also adopted emission standards for off-road diesel construction equipment of greater than 25 hp. The emissions standards are referred to as "tiers," with Tier 4 being the most stringent (i.e., least polluting). The requirements are phased in, with full implementation for large and medium fleets by 2023 and for small fleets by 2028. The project's mitigation would accelerate the use of cleaner construction equipment by using mobile off-road construction equipment (wheeled or tracked) that meets, at a minimum, the Tier 4 interim off-road emissions standards as specified in Mitigation Measure MM-AQ-1. Field testing by construction equipment manufacturers has shown that higher tier equipment results in lower fuel consumption. For example, Tier 4 interim engines have shown a 5 percent reduced fuel consumption compared to a Tier 3 engine. Similar reductions in fuel consumption have been shown for Tier 3 engines compared to a Tier 2 engine.

Although the Project is not developing any new buildings and is only upgrading existing operations, the Project would comply with or exceed the applicable provisions of Title 24 and the CALGreen Code in affect at the time of project approval.

With respect to transportation-related fuel usage, the project would provide a temporary increase in local transportation from construction workers, but as discussed previously would not create new trips within the region due to the nature of construction work. The project would not increase operational commute trips, and therefore, would not result in a change to long-term transportation-related fuel usage. As detailed in Section 5.2.2, the project would be consistent with the 2016 RTP/SCS.

b) Result in wasteful or unnecessary consumption of energy?

Less than Significant Impact. As discussed previously, construction of the project would result in negligible amounts of electrical consumption associated with the use of electrical construction equipment and the indirect use of electricity for any water used as dust suppressant throughout the construction activities. Additionally, as certain portions of the site are being renovated, electrical use to those sections would be temporarily suspended, and therefore, the electrical use by construction equipment would be at least partially offset by the reduction in onsite operational consumption. Therefore, the project would not result in wasteful, inefficient, or unnecessary consumption of electricity. Construction activities onsite would not require the use of natural gas, and therefore, the project would not result in wasteful, inefficient, or unnecessary consumption of natural gas.

Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration (NTSA) is responsible for establishing additional vehicle standards and for revising existing standards. Compliance with Federal fuel economy standards is not determined for each individual vehicle model. Rather, compliance is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. **Table 8,** *Construction Related Fuel Consumption,* identifies the amount of diesel and gasoline that would be consumed during the construction activities. As shown, project-related off-road automotive fuel consumption during construction would be less than 0.001 percent of the state's diesel and gasoline consumption. The project's on-road automotive fuel consumption would be nominal compared to annual vehicle use in the County, and vehicles must adhere to California's stringent standards for fuel efficiency as mandated by AB 1493. The project would not result in any unusual characteristics that would result in excessive operational fuel consumption. As identified in mitigation measure MM-AQ-1, the project would use construction equipment that meets a minimum of Tier 4 interim off-road emissions standards, and therefore, would provide additional reductions to transportation energy consumption. Fuel consumption associated with project-related vehicle trips would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. This impact would be less than significant.

TABLE 8
CONSTRUCTION RELATED FUEL CONSUMPTION

Age Bin	State	Project	% of State
Diesel	3,400,000,000	16,841	0.0005
Gasoline	14,700,000,000	2,684	0.00002

SOURCE: ESA, 2018.

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.

Transportation Energy Demand

As indicated in Table 8, project's overall annual fuel consumption associated with construction would be 16,841 gallons of diesel and 2,684 gallons of gasoline respectively, which would increase fuel use in the State by less than 0.001 percent. It is noted that construction fuel use is temporary and would cease upon completion of construction activities. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or State. Therefore, construction fuel consumption would be similar projects of this nature and would not require the need for new facilities to be constructed. As such, a less than significant impact would occur in this regard.

Electrical Energy Demand

Construction of the project would result in negligible amounts of electrical consumption associated with the use of electrical construction equipment and the indirect use of electricity for any water used as dust suppressant throughout the construction activities. Additionally, as certain portions of the site are being renovated, electrical use to those sections would be temporarily suspended, and therefore, the electrical use by construction equipment would be at least partially offset by the reduction in onsite operational consumption. Therefore, the proposed project would be less than significant with respect to increases in electrical demand.

Natural Gas Demand

Construction activities onsite would not require the use of natural gas, and therefore the proposed project would be less than significant with respect to increases in natural gas demand.

d) Conflict with applicable energy efficiency policies or standards?

Less than Significant Impact. While there are no local or regional energy conservation plans that are directly applicable to the project, the 2017 Scoping Plan Update includes high-level objectives and goals intended to reduce energy demand, including energy efficiency and the Renewable Portfolio Standard. The Project is not constructing new building but is upgrading existing operations, these upgrades will use newer, more efficient equipment. Additionally, the project site obtains electricity from SDG&E which currently generates 43 percent of its electricity through renewable sources, exceeding the requirements of the Renewable Portfolio Standards. Additionally, the Scoping Plan Updates include vehicle and fuel standards which would be incorporated into project construction through the use of locally sourced fuels and newer, more efficient onsite equipment. Therefore, the proposed project would be consistent with applicable plans for conserving energy and impacts would be less than significant.

References

ESA, 2018. *JD Latham Treatment Plant Facility Improvements Package Final Design Air Quality, Greenhouse Gas, and Energy Technical Report*. February.

4.20 Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
19. 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 of the laboratory building and repaving of areas within the existing JBLTP property. 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-9 have been included to reduce potential impacts to cultural resources to less than significant. Furthermore, 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. A recent condominium project is currently under construction south of the JBLTP 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 birds 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.

Appendix A

Air Quality, Greenhouse Gas, and Energy Technical Report

ESA

J.B. LATHAM TREATMENT PLANT FACILITY IMPROVEMENTS PACKAGE B FINAL DESIGN

Air Quality, Greenhouse Gas, and Energy Technical Report

Prepared for

South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

February 2018

J.B. LATHAM TREATMENT PLANT FACILITY IMPROVEMENTS PACKAGE B FINAL DESIGN

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ACRONYMS AND ABBREVIATIONS

Acronym	Description
Air Basin	South Coast Air Basin
AB	Assembly Bill
AB 32	Global Warming Solutions Act of 2006
APS	Alternative Planning Strategy
AQMP	Air Quality Management Plan
AR4	Fourth Assessment Report
AR5	Fifth Assessment Report
ATCM	Air Toxics Control Measure
BACT	Best Available Control Technology
BAU	Business as Usual
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Cal EPA	California Environmental Protection Agency
CALGreen	California Green Building Standard Code
CARB	California Air Resources Board
CAT	Climate Action Team
CCAR	California Climate Action Registry
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH4	methane
City	City of Dana Point
CO	carbon monoxide
CO2	carbon dioxide
CO2e	carbon dioxide equivalents
DAF	dissolved air flotation
DPM	diesel particulate matter
EGU	electrical generating units
EISA	Energy Independence and Security Act
EMFAC	on-road vehicle emissions factor model
EPAct	Energy Policy Act
GHG	Greenhouse Gas
GWP	Global Warming Potential
HFC	hydrofluorocarbons
HSC	California Health and Safety Code
IOU	Investor-owned utilities
IPCC	Intragovernmental Panel on Climate Change
JBLTP	JB Latham Treatment Plant
kBtu	Kilo British thermal units
kWh	Kilowatt-hours
LCFS	Low Carbon Fuel Standard
LST	localized significance threshold

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MATES IV	Multiple Air Toxics Exposure Study, May 2015
MCC	Motor Control Center
MMT	million metric tons
MPO	Metropolitan Planning Organization
MT	metric ton
MW	megawatts
NAAQS	National Ambient Air Quality Standards
NO	nitric oxide
NO2	nitrogen dioxide
NOX	nitrogen oxides
N2O	nitrous oxide
OEHHA	Office of Environmental Health Hazard Assessment
Pb	lead
PFC	perfluorocarbons
PM	Particulate matter
PM2.5	fine particulate matter
PM10	respirable particulate matter
ppm	parts per million
POU	Publicly owned utilities
RFT	Renewable Fuel Standard
RPS	Renewable Portfolio Standard
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
SAR	Second Assessment Report
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SDG&E	San Diego Gas & Electric
SF6	sulfur hexafluoride
SIP	State Implementation Plan
SO2	sulfur dioxide
SOCalGas	Southern California Gas Company
SOx	oxides of sulfur
SOCWA	South Orange County Wastewater Authority
SRA	Source Receptor Area
TAC	toxic air contaminant
TWAS	thicken waste activates sludge
µg/m3	micrograms per cubic meter
µm	micrometers
UNFCCC	United Nations Framework Convention on Climate Change
USEIA	United States Energy Information Administration
USEPA	United States Environmental Protection Agency
VDECS	Verified Diesel Emission Control Strategies
VMT	vehicle miles traveled
VOC	volatile organic compounds
ZEV	zero emission vehicle

EXECUTIVE SUMMARY

The South Orange County Wastewater Authority (SOCWA) proposes improvements to their J.B. Latham Treatment Plant (JBLTP) located at 34156 Del Obispo Street in the City of Dana Point, California. The JBLTP is a conventional activated sludge, secondary treatment facility owned and operated by the SOCWA on behalf of the four member agencies (Moulton Niguel Water District, South Coast Water District, City of San Juan Capistrano, and Santa Margarita Water District). The proposed improvements include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition.

In accordance with the requirements under the California Environmental Quality Act (CEQA), this Technical Report provides an estimate of air quality, greenhouse gas, and energy emissions for the project, and the potential impacts from associated construction activities. The report includes the categories and types of emission sources resulting from the project, the calculation procedures used in the analysis, and any assumptions or limitations. Because the project includes the repair and replacement of existing components and is not adding new processes, there will be no new operational activities, and therefore, no new operational emissions. As operational emissions from the site will not change from the current existing conditions, operational activities are not addressed in this report.

This report summarizes the potential for the proposed project to conflict with the applicable air quality plan, to violate an air quality standard or threshold, to result in a cumulatively net increase of criteria pollutant emissions, to expose sensitive receptors to substantial pollutant concentrations, to create objectionable odors affecting a substantial number of people, greenhouse gases (GHGs) that have a significant impact on the environment, conflict with plans or policies established for the reduction of GHG emissions, conflict with adopted energy conservation plans, violate state or federal energy standards, cause wasteful, inefficient, and unnecessary consumption of energy during construction, result in an increase in demand for electricity or natural gas that exceeds available supply or distribution infrastructure capabilities. The findings of the analyses are as follows:

- The project would be consistent with air quality plans and policies set forth by the South Coast Air Quality Management District (SCAQMD).
- The incremental increase in emissions from construction of the project would not exceed the regional daily emission thresholds set forth by the SCAQMD. Thus, the project would not result in a regional violation of applicable air quality standards or jeopardize the timely attainment of such standards in the South Coast Air Basin (the Air Basin).
- The project would result in a less than significant cumulative air quality impacts during construction and operations of the project.

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- The incremental increase in onsite emissions from construction of the proposed project would not exceed the localized significance thresholds set forth by the SCAQMD. Thus, the Project would not result in a localized violation of applicable air quality standards or expose offsite receptors to substantial levels of regulated air contaminants resulting in a less than significant impact.
- With the implementation of mitigation measure MM-AQ-1, project construction would not result in significant toxic air contaminant emissions.
- Project construction would not result in significant levels of odors.
- Project construction would not generate GHG emissions that would have a significant impact on the environment.
- Construction of the project would not conflict with applicable plans, policies or regulations for reducing GHG emissions.
- Construction of the project would not result in cumulatively considerable impacts with respect to GHG emissions.
- The project would not conflict with adopted energy conservation plans.
- The project would not violate State or federal energy standards.
- The project would not cause wasteful, inefficient, and unnecessary consumption of energy during construction.
- The project would not result in an increase in demand for energy that exceeds available supply or infrastructure capacity.
- The project would not result in a cumulatively considerable impact with respect to Energy Consumption.

SECTION 1
Introduction

1.1 Air Quality

1.1.1 Existing Conditions

The project site is located within the existing JBLTP located at 34156 Del Obispo Street, Dana Point, CA as shown in **Figure 1**, *Project Vicinity Map.* North of the site is Del Obispo Park and the Dana Point Community Center. West of the site is Del Obispo Street and a residential community. To the south is a recently graded property that is under construction for residential condominiums, with Doheny Park Plaza further to the south adjacent to Pacific Coast Highway. To the east is San Juan Creek flood channel that has a width of approximately 260 feet. San Juan Creek Trail is located along the western bank of the San Juan Creek adjacent to the site, with an industrial area to the east of San Juan Creek. As noted below, there are 18 project elements and the location of each element is illustrated on **Figure 2**, *Site Plan*.

1.1.2 Project Description

SOCWA proposes improvements to their JBLTP, which include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition as shown in **Figure 2**, *Site Plan*. The following describes in detail the improvements to be implemented. As noted below, there are 18 project elements and the location of each element is illustrated on Figure 2.

1. Effluent Pump Station Piping Modifications. The 24-inch discharge pipeline from the 30-inch by 24-inch reducer section will be replaced with a 24-inch by 30-inch increaser section. The replacement includes the 24-inch check valve, actuator and pressure indicator. The flow meter will remain in place. The temporary handling of effluent during the replacement will occur.

2. Effluent Discharge Valves Replacement. Two effluent discharge valves connecting the Chlorine Contact Basin to the San Juan Creek Ocean Outfall will be replaced.

3. Secondary Sedimentation Basins Modifications (Secondary Clarifiers 10 through 13 on Figure 2). The rotating scum skimmers, telescoping valves and drain valve assembly will be replaced.

4. Secondary Sedimentation Basins Modifications (Secondary Clarifiers 1 through 9 on Figure 2). The chain and flight assembly (note that the drives have already been replaced)

Figure 1 Vicinity Location Map

Figure 2 Site Plan

and telescoping valves will be replaced, and repairs to damaged concrete on the crosswalks adjacent to the drive unit will be provided.

5. Primary Effluent Channel. The basin protective coating will be replaced, the concrete surface and cracks will be repaired, the channel slid e gates with drop gate assemblies will be replaced, and the diamond plate covers, supporting angles and grating rebate will be replaced. Work along the channel diamond plate covers includes modification of aeration drain piping and foul air ducting above the deck.

6. Primary Sedimentation Basins (Primary Clarifiers 1 through 6 on Figure 2). The basin protective coating will be replaced, the concrete surfaces and cracks will be repaired, and the launders, scum beach, and scum skimmers, and basin and hatch covers will be replaced. The switches will be disconnected and all new electrical conduits (includes power supply to scum skimmer drives, basin lights and power receptacles) will be rerouted from the north side of the Primary Sedimentation Basins, along the east wall of the Basins through Primary Sludge Valve Tunnel to the motor control center in the Blower Room. There are four discharge valves per digester.

7. Plant 2 Primary Influent Channel. The lining, gates, rebate and diamond plates in the Influent Channel will be replaced. The covers of the Primary Sedimentation Basin will be temporarily removed during construction and the covers will be restored after the completion of the improvement at the Plant 2 Influent Channel.

8. Plant 1 Primary Influent Channel: The basin protective coating will be replaced, the concrete surface and cracks will be repaired, and the inlet gates, diamond plate covers and grating rebate will be replaced. The primary sedimentation basins' chain and flight and collector drive control will be relocated, as necessary.

9. Safety Related Items for Liquids Facility. Various structures within the Liquids Facility portion of the treatment plant will include modifications to roofs, hatch-skylight, fixed ladders, and handrails.

10. Safety Related Items for Solids Facility. Various structures within the Solids Facility portion of the treatment plant will include modifications to roofs, hatch-skylight, fixed ladders, and handrails.

11. Modification of the Existing Thickening and Digestion System. The metal structures of the dissolved air floatation (DAF) units are known to have structural defects due to corrosion. This modification includes patching up structure, sand blasting and recoating the interior of the DAFs, replacement of DAF covers and handrails, and replacement and coating collector mechanism. This modification also includes an upgrade containing a dissolution tank, recirculation pump, compressor, thicken waste activated sludge (TWAS) pumps, aboveground piping and valves. The instrumentation and control system, all wiring, aboveground conduit and Motor Control Center (MCC) buckets are also included.

12. Centrate Drainage Pump Station and Discharge Line. The existing centrate piping runs between the Energy Recovery Building and Plant 1 Headworks Building. The original drainage line was modified in 2008, however the system is still subject to flow backing up. This improvement includes a pump, re-routed discharge line, pump station control and power supply.

13. Digesters 1 and 2 Mixing System Improvements. Improvements include replacement of the existing pumps and control valves. The existing mix pumps are to be replaced with chopper type pumps.

14. Heat Exchanger Replacement. The four existing heat exchangers located between Digesters 1 and 2 and between 3 and 4 will be replaced along with the aboveground piping.

15. Boilers Replacement. The boilers and control system located in the Digester 1 and 2 Control Building and Digester 3 and 4 Control Building will be replaced.

16. Digester Control Buildings. The gas monitoring system and lighting will be replaced and the roof will be removed and reconstructed at Digester Control Building 1 and 2. All HVAC equipment and penetrations through the roof will be replaced and a walkway on the roof will be reinforced at Digester Control Building 3 and 4. A new stairway for each digester to the top of Digesters 3 and 4 will be included.

17. Laboratory Demolition. Because SOCWA has shifted its laboratory function to the Regional Treatment Plant, the existing laboratory that dates back to the 1960's and has a dimension of approximately 47 feet by 33 feet by 12.7 feet tall will be demolished.

18. Energy Recovery Building Improvements. A 25-foot-long monorail system will be provided on the upper floor of the Energy Recovery Building to allow storage of equipment. The weight capacity of the monorail crane will be 2 tons. An independent support system for the monorail system will be provided on the ceiling. In addition, the existing built-up roof and skylight support curbs have aged and will be replaced.

1.1.3 Existing Air Quality Conditions

Regional Air Quality

Criteria Pollutants

The distinctive climate of the Air Basin is determined primarily by its terrain and geographical location. Regional meteorology is dominated by a persistent high pressure area which commonly resides over the eastern Pacific Ocean. Seasonal variations in the strength and position of this pressure cell cause changes in the weather patterns of the area. Warm summers, mild winters, infrequent rainfall, moderate daytime on-shore breezes, and moderate humidity characterize local climatic conditions. This normally mild climatic condition is occasionally interrupted by periods of hot weather, winter storms, and hot easterly Santa Ana winds.

Certain air pollutants have been recognized to cause notable health problems and consequential damage to the environment either directly or in reaction with other pollutants, due to their presence in elevated concentrations in the atmosphere. Such pollutants have been identified and regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in air quality. The following pollutants are regulated by the United States Environmental Protection Agency (USEPA) and are subject to emissions control requirements adopted by federal, state and local regulatory agencies. These pollutants are referred to as "criteria air pollutants" as a result of the specific standards, or criteria, which have been adopted for them. A brief description of the health effects of these criteria air pollutants are provided below.

Ozone: Ozone is a secondary pollutant formed by the chemical reaction of volatile organic compounds (VOCs) and nitrogen oxides (NO_X) under favorable meteorological conditions such as high temperature and stagnation episodes. Ozone concentrations are generally highest during the summer months, when direct sunlight, light wind, and warm temperature conditions are favorable. An elevated level of ozone irritates the lungs and breathing passages, causing coughing and pain in the chest and throat, thereby increasing susceptibility to respiratory infections and reducing the ability to exercise. Effects are more severe in people with asthma and other respiratory ailments. Long-term exposure may lead to scarring of lung tissue and may lower the lung efficiency.

Nitrogen Dioxide (NO_2) and Nitrogen Oxides (NO_X): NO_X is a term that refers to a group of compounds containing nitrogen and oxygen. The primary compounds of air quality concern include NO_2 and nitric oxide (NO), which can quickly oxidize in the atmosphere to form NO_2. Ambient air quality standards have been promulgated for NO_2, which is a reddish-brown, reactive gas. The principle form of NO_X produced by combustion is NO, but NO reacts quickly in the atmosphere to form NO_2, creating the mixture of NO and NO_2 referred to as NO_X. Major sources of NO_X emissions include power plants, large industrial facilities, and motor vehicles. Emissions of NO_X are a precursor to the formation of ground-level ozone. NO_2 can potentially irritate the nose and throat, aggravate lung and heart problems, and may increase susceptibility to respiratory infections, especially in people with asthma. According to the California Air Resources Board (CARB), "NO_2 is an oxidizing gas capable of damaging cells lining the respiratory tract. Exposure to NO_2 along with other traffic-related pollutants, is associated with respiratory symptoms, episodes of respiratory illness and impaired lung functioning. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO_2 above the level of the current state air quality standard. Clinical studies of human subjects suggest that NO_2 exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children."[1] NO_2 also contributes to the formation of particulate matter (PM10). The terms "NO_X" and "NO_2" are sometimes used interchangeably. However, the term "NO_X" is primarily used when discussing emissions, usually from combustion-related activities. The term "NO_2" is primarily used when discussing ambient air quality standards. More specifically, NO2 is regulated as a criteria air pollutant under the Clean Air Act and subject to the

1 California Air Resources Board, Nitrogen Dioxide – Overview, 2011, http://www.arb.ca.gov/research/aaqs/caaqs/no2-1/no2-1.htm. Accessed February 2018.

ambient air quality standards, whereas NO_X and NO are not.[2] In cases where the thresholds of significance or impact analyses are discussed in the context of NO_X emissions, it is based on the conservative assumption that all NO_X emissions would oxidize in the atmosphere to form NO_2.

Carbon Monoxide (CO): Carbon monoxide is primarily emitted from combustion processes and motor vehicles due to incomplete combustion of fuel. Elevated concentrations of CO weaken the heart's contractions and lower the amount of oxygen carried by the blood. It is especially dangerous for people with chronic heart disease. Inhalation of CO can cause nausea, dizziness, and headaches at moderate concentrations and can be fatal at high concentrations.[3]

Sulfur Dioxide (SO_2): Major sources of SO_2 include power plants, large industrial facilities, diesel vehicles, and oil-burning residential heaters. Emissions of sulfur dioxide aggravate lung diseases, especially bronchitis. It also constricts the breathing passages, especially in asthmatics and people involved in moderate to heavy exercise. Sulfur dioxide potentially causes wheezing, shortness of breath, and coughing. High levels of particulates appear to worsen the effect of sulfur dioxide, and long-term exposures to both pollutants leads to higher rates of respiratory illness.[4]

Particulate Matter (PM10 and PM2.5): The human body naturally prevents the entry of larger particles into the body. However, small particles including fugitive dust, with an aerodynamic diameter equal to or less than 10 microns (PM10) and even smaller particles with an aerodynamic diameter equal to or less than 2.5 microns (PM2.5), can enter the body and are trapped in the nose, throat, and upper respiratory tract. These small particulates could potentially aggravate existing heart and lung diseases, change the body's defenses against inhaled materials, and damage lung tissue. The elderly, children, and those with chronic lung or heart disease are most sensitive to PM10 and PM2.5. Lung impairment can persist for two to three weeks after exposure to high levels of particulate matter. Some types of particulates could become toxic after inhalation due to the presence of certain chemicals and their reaction with internal body fluids. The elderly, children, and those with chronic lung or heart disease are most sensitive to PM10 and PM2.5. In children, studies have shown associations between particulate matter exposure and reduced lung function and increased respiratory symptoms and illnesses.[5] Lung impairment can persist for two to three weeks after exposure to high levels of particulate matter. Some types of particulates could become toxic after inhalation due to the presence of certain chemicals and their reaction with internal body fluids.

Lead (Pb): Lead is emitted from industrial facilities and from the sanding or removal of old lead-based paint. Smelting or processing the metal is the primary source of lead emissions, which is primarily a regional pollutant. Lead affects the brain and other parts of the body's nervous system.

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2 United States Environmental Protection Agency, Basic Information about NO_2, 2016, https://www.epa.gov/no2-pollution/basic-information-about-no2. Accessed February 2018.

3 California Air Resources Board, Carbon Monoxide, 2009, https://www.arb.ca.gov/research/aaqs/caaqs/co/co.htm. Accessed February 2018.

4 California Air Resources Board, History of Sulfur Dioxide Air Quality Standard, 2009, https://www.arb.ca.gov/research/aaqs/caaqs/so2-1/so2-1.htm. Accessed February 2018.

5 California Air Resources Board, Particulate Matter – Overview, 2005, http://www.arb.ca.gov/research/aaqs/caaqs/pm/pm.htm. Accessed February 2018.

Exposure to lead in very young children impairs the development of the nervous system, kidneys, and blood forming processes in the body. As the project is not a producer of lead, lead is not discussed further in this analysis.

Volatile Organic Compounds

VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids and internal combustion associated with motor vehicle usage and use of consumer products (e.g., architectural coatings, etc.) are the major sources of VOCs.[6] Some VOCs are also classified by the State as toxic air contaminants (TACs).[7] These are compounds comprised primarily of atoms of hydrogen and carbon. Emissions of VOCs themselves are not "criteria" pollutants; however, they contribute with NO_X to form ozone and are, therefore, regulated as ozone precursor emissions.

Toxic Air Contaminants (TACs)

In addition to criteria pollutants, the SCAQMD periodically assesses levels of TACs in the Air Basin. TACs refer to a diverse group of "non-criteria" air pollutants that can affect human health, but have not had ambient air quality standards established for them. This is not because they are fundamentally different from the pollutants discussed above, but because their effects tend to be local rather than regional. TACs are classified as carcinogenic and non-carcinogenic, where carcinogenic TACs can cause cancer and non-carcinogenic TAC can cause acute and chronic impacts to different target organ systems (e.g., eyes, respiratory, reproductive, developmental, nervous, and cardiovascular).

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) determine if a substance should be formally identified, or "listed," as a TAC in California. The complete list of such substances is located at www.arb.ca.gov/toxics/id/taclist.htm.

Diesel particulate matter (DPM), which is emitted in the exhaust from diesel engines, was listed by the state as a TAC in 1998. DPM has historically been used as a surrogate measure of exposure for all diesel exhaust emission. DPM consists of fine particles (Fine particles have a diameter less than 2.5 micrometer), including a subgroup of ultrafine particles (ultrafine particles have a diameter less than 0.1 micrometer). Collectively, these particles have a large surface area which makes them an excellent medium for absorbing organics. The visible emissions in diesel exhaust include carbon particles or "soot." Diesel exhaust also contains a variety of harmful gasses and cancer-causing substances.

Exposure to DPM may be a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. DPM levels and resultant potential health effects may be higher in close proximity to heavily traveled roadways with substantial truck traffic or near industrial facilities. According to CARB, DPM exposure may lead to the following adverse health effects: (1) aggravated asthma; (2) chronic bronchitis;

6 California Air Resources Board, Toxic Air Contaminants Monitoring, 2016, https://www.arb.ca.gov/aaqm/toxics.htm. Accessed March 2017.

7 Ibid.

(3) increased respiratory and cardiovascular hospitalizations; (4) decreased lung function in children; (5) lung cancer; and (6) premature deaths for people with heart or lung disease.[8] [9]

Local Air Quality

Existing Ambient Air Quality in the Surrounding Area

The SCAQMD maintains a network of air quality monitoring stations located throughout the Air Basin to measure ambient pollutant concentrations. The project site is located in SCAQMD Source Receptor Area (SRA) 24; therefore, the monitoring station most representative of the project site is the Perris Valley Monitoring Station. Criteria pollutants monitored at this station include ozone and PM10. The nearest station in the general forecast area is the Lake Elsinore Station and of the pollutants that are not monitored at the Perris Valley station, the only criteria pollutant that Lake Elsinore Station monitors for is CO. The closest station that monitors for NO_2, SO_2, and PM2.5 is the Metropolitan Riverside County 1 monitoring station. The most recent data available from the SCAQMD for these monitoring stations are from years 2011 to 2016. The pollutant concentration data for these years are summarized in **Table 1,** *Ambient Air Quality Data*.

TABLE 1
AMBIENT AIR QUALITY DATA

Pollutant/Standard	2011	2012	2013	2014	2015	2016
ozone (1-hour)[1]						
Maximum Concentration (ppm)	0.125	0.111	0.108	0.117	0.124	0.131
Days > CAAQS (0.09 ppm)	44	28	17	16	25	23
ozone (8-hour)[1]						
Maximum Concentration (ppm)	0.112	0.093	0.090	0.094	0.102	0.098
4^{th} High 8-hour Concentration (ppm)	0.0.094	0.090	0.088	0.089	0.094	0.092
Days > CAAQS (0.070 ppm)	77	64	60	63	50	56
Days > NAAQS (0.075 ppm)	45	46	34	59	49	55
NO_2 (1-hour)						
Maximum Concentration (ppm)	0.050	0.048	0.047	0.045	0.047	0.051
98^{th} Percentile Concentration (ppm)	0.041	0.041	0.040	0.040	0.039	0.036
NO_2 (Annual)						
Annual Arithmetic Mean (0.030 ppm)	0.010	0.010	0.009	0.008	0.009	0.008
CO (1-hour)						
Maximum Concentration (ppm)	--	--	--	2.0	0.8	1.2
CO (8-hour)						
Maximum Concentration (ppm)	0.7	0.7	0.6	1.4	0.6	0.6

8 CARB, Diesel and Health Research, https://www.arb.ca.gov/research/diesel/diesel-health.htm, 2016. accessed February 2018.

9 CARB, Fact Sheet: Diesel Particulate Matter Health Risk Assessment Study for the West Oakland Community; Preliminary Summary of Results, March 2008, https://www.arb.ca.gov/ch/communities/ra/westoakland/documents/factsheet0308.pdf, accessed February 2018.

Pollutant/Standard	2011	2012	2013	2014	2015	2016
SO_2 (1-hour)						
Maximum Concentration (ppm)	0.051	0.004	0.008	0.006	0.002	0.006
99th Percentile Concentration (ppm)	0.013	0.002	0.005	0.004	0.002	0.002
SO_2 (24-hour)						
Maximum Concentration (ppm)	--	--	--	--	--	--
PM10 (24-hour)[1]						
Maximum Concentration (µg/m^3)	65	62	70	87	74	76
Samples > CAAQS (50 µg/m^3)	3	1	10	8	3	5
Samples > NAAQS (150 µg/m^3)	0	0	0	0	0	0
PM10 (Annual Average)[1]						
Annual Arithmetic Mean (20 µg/m^3)	29.2	26.5	33.6	35.1	30.3	32.2
PM2.5 (24-hour)						
Maximum Concentration (µg/m^3)	60.8	38.1	60.3	48.9	54.7	39.12
98th Percentile Concentration (µg/m^3)	31.0	33.7	34.6	34.3	38.1	31.65
Samples > NAAQS (35 µg/m^3)	4	7	6	5	9	6
PM2.5 (Annual)						
Annual Arithmetic Mean (12 µg/m^3)	13.6	13.51	12.50	12.48	11.89	14.02

ppm = parts per million; µg/m^3 = micrograms per cubic meter

1. Data taken from the Perris Valley Monitoring Station
2. Data taken from the Lake Elsinore Monitoring Station
3. Data taken from the Metropolitan Riverside 1 Monitoring Station

SOURCES: SCAQMD 2018, *Historical Data by Year.* http://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year. Accessed February 2018.

Existing Health Risk in the Surrounding Area

The Air Basin is designated as nonattainment for ozone (NAAQS and CAAQS), PM10 (CAAQS), and PM2.5 (NAAQS and CAAQS). The primary pollutant of concern during construction and operational activities is NO_X since the Air Basin is nonattainment for ozone and NO_X is an ozone precursor. Pollutants of concern also include PM10 and PM2.5 since the Air Basin is nonattainment for these. Health-based ambient air quality standards have been promulgated for NO_2, which is a reddish-brown reactive gas. There are no health-based ambient air quality standards specifically for NO; however, NO can oxidize in the atmosphere to form NO_2. As discussed previously, NO_2 can potentially irritate the nose and throat, aggravate lung and heart problems, and may increase susceptibility to respiratory infections, especially for people with asthma.

Between July 2012 and June 2013, the SCAQMD conducted the Multiple Air Toxics Exposure Study (MATES IV), which is a follow-up to previous air toxics studies conducted in the Air Basin, analyzes the potential risk to residents based on their location within the SCAQMD's jurisdiction as well as their exposure to toxic air contaminants including DPM. The MATES IV Final Report was issued in May 2015. The study, based on actual monitored data throughout the Air Basin, consisted of several elements. Approximately 68 percent of the risk is attributed to DPM emissions, approximately 22 percent to other toxics associated with mobile sources (including benzene, butadiene, and formaldehyde), and approximately 10 percent of all airborne carcinogenic risk is attributed to stationary sources (which include industries and other certain businesses, such as dry cleaners and chrome plating operations).[10]

The SCAQMD has prepared maps that show regional trends in estimated outdoor inhalation cancer risk from toxic emissions, as part of an ongoing effort to provide insight into relative risks, as part of the MATES IV study. The maps depict the estimated number of potential cancers per million people associated with a lifetime of breathing air toxics (24 hours per day outdoors for 70 years). According to the MATES IV study, the background potential cancer risk per million people within the project area is estimated at 487 per million (compared to an overall South Coast Air Basin-wide risk of 418 per million).[11] However, the visual resolution available in the map is 1 kilometer by 1 kilometer and, thus, impacts from individual facilities for individual neighborhoods are not discernable on this map. In general, the risk for the area is consistent with the urban areas of Dana Point. Generally, the risk from air toxics is lower near the coastline: it increases inland, with higher risks concentrated near diesel sources (e.g., freeways, airports, and ports).

1.1.4 Sensitive Receptors

Certain population groups, such as children, elderly, and acutely and chronically ill persons (especially those with cardio-respiratory diseases), are considered more sensitive to the potential effects of air pollution than others. The following are land uses (sensitive sites) where sensitive receptors are typically located: schools, playgrounds and childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, hospitals, retirement homes, and residences.[12] Nearest existing sensitive uses in the vicinity of the project site include the following:

- Single-family residences are located approximately 100 feet to the west of the project site along Del Obispo Street with approximately 250 feet between the nearest construction location and the residences.
- Residential condominiums are under construction to the south of the project site along Del Obispo Street at approximately 30 feet.
- Del Obispo Park and the Dana Point Community Center are located 30 feet to the north of the project site

All other air quality sensitive receptors are located at greater distances from the project site, and would be less impacted by project emissions. Impacts are quantified for the sensitive receptors listed here.

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10 SCAQMD, Final Report – Multiple Air Toxics Exposure Study in the South Coast Air Basin, May 2015. http://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies/mates-iv, accessed February 2018.

11 SCAQMD, Multiple Air Toxics Exposure Study, MATES IV Carcinogenic Risk Interactive Map, http://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies/mates-iv, accessed February 2018.

12 SCAQMD, Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. Chapter 2: Air Quality Issues Regarding Land Use. May, http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/chapter-2---air-quality-issues-regarding-land-use.pdf, accessed May 2017.

1.2 Existing Climate Change Conditions

Global climate change refers to changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation and storms. Historical records indicate that global climate changes have occurred in the past due to natural phenomena; however, data indicates that the current global conditions differ from past climate changes in rate and magnitude. The current changes in global climate have been attributed to anthropogenic activities by the Intergovernmental Panel on Climate Change (IPCC).[13] The term GHG refers to gases that trap long-wave radiation or heat in the atmosphere, which heats the surface of the Earth. Without human intervention, the Earth maintains an approximate balance between the GHG emissions in the atmosphere and the storage of GHGs in the oceans and terrestrial ecosystems. GHGs are the result of both natural and anthropogenic activities. Forest fires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions.

The Federal Government and State of California recognized that anthropogenic (human-caused) GHG emissions are contributing to changes in the global climate, and that such changes are having and will have adverse effects on the environment, the economy, and public health. While worldwide contributions of GHG emissions are expected to have widespread consequences, it is not possible to link particular changes to the environment of California or elsewhere to GHGs emitted from a particular source or location. In other words, emissions of GHGs have the potential to cause global impacts rather than local impacts. Increased concentrations of GHGs in the Earth's atmosphere have been linked to global climate change and such conditions as rising surface temperatures, melting icebergs and snowpack, rising sea levels, and the increased frequency and magnitude of severe weather conditions. Existing climate change models also show that climate warming portends a variety of impacts on agriculture, including loss of microclimates that support specific crops, increased pressure from invasive weeds and diseases, and loss of productivity due to changes in water reliability and availability. In addition, rising temperatures and shifts in microclimates associated with global climate change are expected to increase the frequency and intensity of wildfires.

State law defines GHGs to include the following compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).[14] The most common GHG that results from human activity is CO_2, which represents 76 percent of total anthropogenic GHG emissions in the atmosphere (as of 2010 data),[15] followed by CH_4 and N_2O. Scientists have established a Global Warming Potential (GWP) to gauge the potency of each GHG's ability to absorb and re-emit long-wave radiation. The GWP of a gas is determined using CO_2 as the reference gas with a GWP of 1 over 100 years. For example, a gas with a GWP of 10 is 10 times more potent than CO_2 over 100 years. The sum

13 Intergovernmental Panel on Climate Change, Climate Change 2007: The Physical Science Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Summary for Policy Makers, 2007, https://www.ipcc.ch/report/ar4/wg1/.

14 CEQA Guidelines Section 15364.5; Health and Safety Code, Section 38505(g).

15 Intergovernmental Panel on Climate Change, Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2014, https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_All_Topics.pdf. Accessed: February 2018.

of each GHG multiplied by its associated GWP is referred to as carbon dioxide equivalents (CO_2e). The measurement unit CO_2e is used to report the combined potency of GHG emissions.

These GWP ratios are available from the IPCC. Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (SAR). In 2007, the IPCC updated the GWP values based on the latest science at the time in its Fourth Assessment Report (AR4). The updated GWPs in the IPCC AR4 have begun to be used in recent GHG emissions inventories. In 2013, the IPCC again updated the GWP values based on the latest science in its Fifth Assessment Report (AR5).[16] However, United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines for national inventories require the use of GWP values from the IPCC Fourth Assessment Report (AR4). To comply with international reporting standards under the UNFCCC, official emission estimates for California and the U.S. are reported by the United States using AR4 GWP values, which have replaced the previously required use of IPCC Second Assessment Report (SAR) GWP values. Therefore, statewide and national GHG inventories have not yet updated their GWP values to the AR5 values, and they continue to use the AR4 GWPs. By applying the GWP ratios, project-related CO_2e emissions can be tabulated in metric tons per year. Typically, the GWP ratio corresponding to the warming potential of CO_2 over a 100-year period is used as a baseline. Compounds that are regulated as GHGs are discussed below.

Carbon Dioxide (CO_2): CO_2 is the most abundant GHG in the atmosphere and is primarily generated from fossil fuel combustion from stationary and mobile sources. CO_2 is the reference gas (GWP of 1) for determining the GWPs of other GHGs.

Methane (CH_4): CH_4 is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. The GWP of CH_4 is 25 in the IPCC AR4, and 28 in the IPCC AR5.

Nitrous Oxide (N_2O): N_2O produced by human-related sources including agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of N_2O is 298 in the IPCC AR4, and 265 in the IPCC AR5.

Hydrofluorocarbons (HFCs): HFCs are fluorinated compounds consisting of hydrogen, carbon, and fluorine. They are typically used as refrigerants in both stationary refrigeration and mobile air conditioning systems. The GWPs of HFCs ranges from 124 for HFC-152a to 14,800 for HFC-23 in the IPCC AR4, and 138 for HFC-152a to 12,400 for HFC-23 in the IPCC AR5.

Perfluorocarbons (PFCs): PFCs are fluorinated compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor

16 Intergovernmental Panel on Climate Change, Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change: Chapter 8: Anthropogenic and Natural Radiative Forcing, 2013, https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter08_FINAL.pdf. Accessed: February 8, 2017.

manufacturing. The GWPs of PFCs range from 7,390 to 17,700 in the IPCC AR4, and 6,630 to 17,400 in the IPCC AR5.

Sulfur Hexafluoride (SF_6): SF_6 is a fluorinated compound consisting of sulfur and fluoride. It is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. SF_6 has a GWP of 22,800 in the IPCC AR4, and 23,500 in the IPCC AR5.

CARB compiles that State's GHG emissions inventory. The most updated inventory is referred to as the 2017 edition, which reports the State's GHG emissions inventory from calendar year 2015. Based on the 2015 GHG inventory data (i.e., the latest year for which data are available from CARB), California emitted 440.4 million metric tons of CO_2e (MMT CO_2e) including emissions resulting from imported electrical power.[17] Between 1990 and 2015, the population of California grew by approximately 9.3 million (from 29.8 to 39.1 million).[18] This represents an increase of approximately 31 percent from 1990 population levels. In addition, the California economy, measured as gross state product, grew from $773 billion in 1990 to $2.49 trillion in 2015 representing an increase of approximately 222 percent (just over three times the 1990 gross state product).[19] Despite the population and economic growth, California's net GHG emissions only grew by approximately 2.2 percent. According to CARB, the declining trend coupled with the state's GHG reduction programs (such as the Renewables Portfolio Standard, Low Carbon Fuel Standard (LCFS), vehicle efficiency standards, and declining caps under the Cap and Trade Program) demonstrate that California is on track to meet the 2020 GHG reduction target codified in California Health and Safety Code (HSC), Division 25.5, also known as The Global Warming Solutions Act of 2006 (AB 32).[20]

The scientific community's understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain significant scientific uncertainties in, for example, predictions of local effects of climate change, occurrence, frequency, and magnitude of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of the Earth's climate system and inability to accurately model it, the uncertainty surrounding climate change may never be completely eliminated. Nonetheless, the IPCC's *Fifth Assessment Report*, *Summary for Policy Makers* states

17 California Air Resources Board, California Greenhouse Gas Inventory 2017 Edition, http://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed February 2018.

18 United States Census Bureau, Data Finders,2009, http://www.census.gov/; California Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2011-2017; http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5; State of California Department of Finance, American Community Survey, 20015,http://www.dof.ca.gov/Reports/Demographic_Reports/American_Community_Survey/documents/Web_ACS2014_Pop-Race.xlsx. Accessed February 2018.

19 California Legislative Analyst's Office, 2014 GDP: California Ranks 7th or 8th in the World, 2015, http://www.lao.ca.gov/LAOEconTax/Article/Detail/90. Accessed February 2018.

20 California Energy Commission, Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004, 2006, http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF. Accessed February 2018.

that, "it is *extremely likely* that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas concentrations and other anthropogenic forces [*sic*] together."[21] A report from the National Academy of Sciences concluded that 97 to 98 percent of the climate researchers most actively publishing in the field support the tenets of the IPCC in that climate change is very likely caused by human (i.e., anthropogenic) activity.[22] According to CARB, the potential impacts in California due to global climate change may include: loss in snow pack; sea level rise; more extreme heat days per year; more high ozone days; more large forest fires; more drought years; increased erosion of California's coastlines and sea water intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation.[23]

1.3 Existing Energy Environment

1.3.1 Electrical Consumption

San Diego Gas and Electric (SDG&E) is the utility provider for the City of Dana Point. SDG&E generates power from a variety of energy sources, including hydropower, coal, gas, nuclear sources, and renewable resources, such as wind, solar, geothermal sources, biomass, and hydroelectric. SDG&E provides electricity to approximately 1.4 million business and residential accounts throughout its 4,100-square-mile service area, which includes 25 communities across two counties.[24] SDG&E produces and purchases its energy from a mix of conventional and renewable generating sources. Based on 2016 data, SDG&E procured approximately 43 percent of electricity from renewable sources.[25] The remaining 68 percent was from conventional sources, primarily natural gas. As of 2014, SDG&E has the capacity to generate approximately 3,117 megawatts (MW) of power from local sources.[26] In 2016, SDG&E had total electric distribution and transmission of approximately 19,164 million kilowatt-hours (kWh), which was less than the prior year's (2015) total electric distribution and transmission of approximately 19,96 million kWh.[27]

21 Intergovernmental Panel on Climate Change, Fifth Assessment Report, Summary for Policy Makers, (2013) 15. Available: http://ipcc.ch/report/ar5/syr/. Accessed February 2018.

22 Anderegg, William R. L., J.W. Prall, J. Harold, S.H., Schneider, Expert Credibility in Climate Change, Proceedings of the National Academy of Sciences of the United States of America. 2010;107:12107-12109.

23 California Environmental Protection Agency, Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature, (2006). Available at: http://climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF. Accessed February 2018.

24 SDG&E, 2016a. Our Service Area. Available: http://www.sdge.com/our-company/about-us/our-service-territory

25 CUPC, 2018. *California Renewables Portfolio Standard.* http://www.cpuc.ca.gov/RPS_Homepage/. Accessed February 2018

26 SDG&E, 2014. San Diego Gas and Electric, Electric Generation Fact Sheet. Available: http://www.sdge.com/sites/default/files/newsroom/factsheets/SDG&E%20Electric%20Generation%20Fact%20Sheet_2.pdf

27 Sempra Energy, 2016. *2016 Annual Report.* Available: https://www.sempra.com/sites/default/files/microsites/2016_annualreport/2016_annualreport.pdf

1.3.2 Natural Gas Consumption

Southern California Gas Company (SoCalGas) provides natural gas supply to end-users in the City and is regulated by the California Public Utilities Commission and other state agencies. SoCalGas's available supply in 2015 (the most current data available) was 122 million cubic feet per day (MMCF/day).[28] The annual natural gas sale to customers in 2015 was approximately 304,290 million kilo British thermal units (kBtu).[29]

1.3.3 Transportation Energy

According to the California Energy Commission (CEC), transportation accounts for nearly 37 percent of California's total energy consumption.[30] Based on available fuel consumption data from the United States Energy Information Administration (USEIA), in 2016, California consumed a total of 348,830 thousand barrels of gasoline for transportation, which is equivalent to a total annual consumption of approximately 14.7 billion gallons by the transportation sector.[31] For diesel, California consumed a total of 80,218 thousand barrels for transportation, which is equivalent to a total annual consumption of approximately 3.4 billion gallons by the transportation sector.[32]

[28] California Gas and Electric Utilities, 2016 California Gas Report. Accessed https://www.socalgas.com/regulatory/documents/cgr/2016-cgr.pdf, February 2018.

[29] Sempra Energy, 2016 Annual Report https://www.sempra.com/sites/default/files/microsites/2016_annualreport/. Accessed February 2018. Converted from 294 billion cubic feet and a conversion factor of 1,035 Btu per cubic foot based on United States Energy Information Administration data. See: United States Energy Information Administration, Natural Gas, Heat Content of Natural Gas Consumed, April 28, 2017, https://www.eia.gov/dnav/ng/ng_cons_heat_a_EPG0_VGTH_btucf_a.htm. Accessed February 2018.

[30] CEC, Integrated Energy Policy Report, CEC-100-2015-001-CMF, 2016, page 153, http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-01/TN212017_20160629T154354_2015_Integrated_Energy_Policy_Report_Small_File_Size.pdf, accessed February 2018.

[31] EIA, Table F3: Motor Gasoline Consumption, Price, and Expenditure Estimates, 2016, http://www.eia.gov/state/seds/data.cfm?incfile=/state/seds/sep_fuel/html/fuel_mg.html&sid=CA, accessed February 2018.

[32] EIA, Table F7: Distillate Fuel Oil Consumption Estimates, 2016, http://www.eia.gov/state/seds/data.cfm?incfile=/state/seds/sep_fuel/html/fuel_use_df.html&sid=CA, accessed February 2018.

SECTION 2
Regulatory Setting

A number of statutes, regulations, plans and policies have been adopted which address air quality, greenhouse gas, and energy concerns. The project site and vicinity is subject to regulations developed and implemented at the federal, State, and local levels. A number of plans and policies have been adopted by various agencies that address air quality concerns. Those plans and policies that are relevant to the project are discussed below.

2.1 Air Quality

2.1.1 Federal

USEPA

The Clean Air Act 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, USEPA is responsible for implementation of certain portions of the Clean Air Act (CAA) 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 National Ambient Air Quality Standards and specifies future dates for achieving compliance. The 1990 Amendments to the Clean Air Act identify specific emission reduction goals for areas not meeting the NAAQS. The 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. Title I (Nonattainment Provisions) and Title II (Mobile Source Provisions) of the CAA are most applicable to the development and operations of the project. Title I provisions were established with the goal of attaining the NAAQS for the criteria pollutants: ozone, NO_2, CO, SO_2, PM10, and Pb. **Table 2**, *Ambient Air Quality Standards*, shows the NAAQS currently in effect for each criteria pollutant.

TABLE 2
AMBIENT AIR QUALITY STANDARDS

Pollutant	Average Time	California Standards[a]		National Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
ozone[h]	1 Hour	0.09 ppm (180 $\mu g/m^3$)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 $\mu g/m^3$)		0.070 ppm (137 $\mu g/m^3$)		
NO_2[i]	1 Hour	0.18 ppm (339 $\mu g/m^3$)	Gas Phase Chemi-luminescence	100 ppb (188 $\mu g/m^3$)	None	Gas Phase Chemi-luminescence

Pollutant	Average Time	California Standards[a]		National Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary [c,f]	Method[g]
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		53 ppb (100 µg/m^3)	Same as Primary Standard	
CO	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10mg/m^3)		9 ppm (10 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
SO_2[j]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)9
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)j	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas) j	—	
PM10[k]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
PM2.5 [k]	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3 k	15 µg/m^3	
Lead[l,m]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)m	Same as Primary Standard	
	Rolling 3-Month Average [m]	--		0.15 µg/m^3		
Visibility Reducing Particles [n]	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of 10 miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates (SO_4)	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			

Pollutant	Average Time	California Standards[a]		National Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary [c,f]	Method[g]
Vinyl Chloride [l]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

a California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms/per cubic meter (µg/m³) is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

d Any equivalent procedure which can be shown to the satisfaction of the California Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.

e National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

f National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

g Reference method as described by the USEPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the USEPA.

h On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

i To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

j On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated non-attainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

k On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m³ to 12.0 µg/m³.

l The California Air Resources Board has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

m The national standard for lead was revised on October 15, 2008 to a rolling three-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated non-attainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

n In 1989, the California Air Resources Board converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

SOURCE: CARB, 2016. *Ambient air Quality Standards. https://www.arb.ca.gov/research/aaqs/aaqs2.pdf* Accessed February 2018.

The Air Basin is an area designated as non-attainment as it does not currently meet NAAQS for certain pollutants regulated under the CAA. On June 11, 2007, USEPA reclassified the Air Basin as a federal "attainment" area for CO and approved the CO maintenance plan for the Air Basin.[33] The Air Basin previously exceeded the NAAQS for PM10, but has met effective July 26, 2013.[34] The Air Basin does not meet the NAAQS for ozone and PM2.5, and is classified as non-attainment for these pollutants. The Los Angeles County portion of the Air Basin is designated as non-attainment for the lead NAAQS; however, this was due to localized emissions from two previously operating lead-acid battery recycling facilities located in the City of Vernon and the City of Industry.[35] These facilities are no longer operating and would not affect the project site. **Table 3**, *South Coast Air Basin Attainment Status (Los Angeles County)*, lists the criteria pollutants and their relative attainment status.

TABLE 3
SOUTH COAST AIR BASIN ATTAINMENT STATUS (LOS ANGELES COUNTY)

Pollutant	National Standards	California Standards
Ozone (1-hour standard)	Non-attainment – Extreme	Non-attainment-Extreme
Ozone (8-hour standard)	Non-attainment – Extreme	Non-Attainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment (Maintenance)	Attainment
Sulfur Dioxide	Attainment	Attainment
PM10	Attainment (Maintenance)	Non-attainment
PM2.5	Non-attainment - Serious	Non-attainment
Lead	Non-attainment (Partial, Los Angeles County)[a]	Attainment
Visibility Reducing Particles	N/A	Unclassified
Sulfates	N/A	Attainment
Hydrogen Sulfide	N/A	Unclassified
Vinyl Chloride	N/A	N/A [b]

N/A = not applicable

[a] The NAAQS for 1-hour ozone was revoked on June 15, 2005, for all areas except Early Action Compact areas.
[b] In 1990 the California Air Resources Board identified vinyl chloride as a toxic air contaminant and determined that it does not have an identifiable threshold. Therefore, the California Air Resources Board does not monitor or make status designations for this pollutant.

SOURCE: SCAQMD, 2017. Final 2016 Air Quality Management Plan. March.

The CAA also specifies future dates for achieving compliance with the NAAQS and mandates that states submit and implement a State Implementation Plan (SIP) for local areas not meeting

33 "Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes: California, Final Rule." *Federal Register* 72 (11 May 2007):26718-26721
34 *Federal Register*, Vol. 78, No. 123, June 26, 2013, 38223-38226.
35 South Coast Air Quality Management District, Board Meeting, Agenda No. 30, Adopt the 2012 Lead State Implementation Plan for Los Angeles County, May 4, 2012.

the NAAQS. The SIP must include pollution control measures that demonstrate how the NAAQS would be met. The 1990 amendments to the CAA identify specific emission reduction goals for air basins 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.

Title II of the CAA 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 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 NAAQS for NO_X emissions have lowered substantially and the specification requirements for cleaner burning gasoline are more stringent.

2.1.2 State

California Clean Air Act

The California Clean Air Act, signed into law in 1988, requires all areas of the State to achieve and maintain the CAAQS by the earliest practical date. The CAAQS apply to the same criteria pollutants as the CAA but also include State-identified criteria pollutants, which include sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. CARB has primary responsibility for ensuring the implementation of the California Clean Air Act, responding to the 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 criteria pollutants as well as the other pollutants recognized by the state. As shown in Table 2, the CAAQS include more stringent standards than the NAAQS for most of the criteria air pollutants.

Health and Safety Code Section 39607(e) requires CARB to establish and periodically review area designation criteria. Table 4 provides a summary of the attainment status of the Los Angeles County portion of the Air Basin with respect to the CAAQS. The Air Basin is designated as attainment for the CAAQS for sulfates, hydrogen sulfide, and vinyl chloride.

California Air Resources Board Air Quality and Land Use Handbook

CARB published the Air Quality and Land Use Handbook in April 2005 to serve as a general guide for considering impacts to sensitive receptors from facilities that emit TAC emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Some examples of CARB's siting recommendations include avoid siting sensitive receptors within:

- 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day;

- 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); and
- 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines.

California Air Resources Board On-Road and Off-Road Vehicle Rules

In 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to DPM and other TACs. The ATCM applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This ATCM does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given time.

In 2008 CARB approved the Truck and Bus regulation to reduce NO_X, PM10, and PM2.5 emissions from existing diesel vehicles operating in California. The requirements were amended in December 2010 and apply to nearly all diesel fueled trucks and busses with a gross vehicle weight rating greater than 14,000 pounds. For the largest trucks in the fleet, i.e., those with a gross vehicle weight rating greater than 26,000 pounds, there are two methods to comply with the requirements. The first method is for the fleet owner to retrofit or replace engines, starting with the oldest engine model year, to meet 2010 engine standards, or better. This is phased over eight years, starting in 2015 and would be fully implemented by 2023, meaning that all trucks operating in the State subject to this option would meet or exceed the 2010 engine emission standards for NO_X and PM by 2023. The second option, if chosen, requires fleet owners, starting in 2012, to retrofit a portion of their fleet with diesel particulate filters achieving at least 85 percent removal efficiency, so that by January 1, 2016 their entire fleet is equipped with diesel particulate filters. However, diesel particulate filters do not typically lower NO_X emissions. Thus, fleet owners choosing the second method must still comply with the 2010 engine emission standards for their trucks and busses by 2020.

In addition to limiting exhaust from idling trucks, CARB recently promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower (hp) such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. This regulation adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission controlled models. Implementation is staggered based on fleet size (which is the total of all off-road horsepower under common ownership or control), with the largest fleets to begin compliance January 1, 2014. Each fleet must demonstrate compliance through one of two methods. The first method is to calculate and maintain fleet average emissions targets, which encourages the retirement or repowering of older equipment and rewards the introduction of newer cleaner units into the fleet. The second method is to meet the Best Available Control Technology (BACT) requirements by turning over or installing Verified Diesel Emission Control Strategies (VDECS) on a certain percentage of its total fleet horsepower. The compliance schedule requires that BACT turn overs or retrofits (VDECS installation) be fully implemented by 2023 in all equipment in large and medium fleets and across 100 percent of small fleets by 2028.

2.1.3 Regional

South Coast Air Quality Management District

The SCAQMD has jurisdiction over air quality planning for all of Orange County, Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The Air Basin is a subregion within SCAQMD jurisdiction. While air quality in the Air Basin has improved, the Air Basin requires continued diligence to meet the air quality standards.

Air Quality Management Plan (AQMP)

The SCAQMD has adopted a series of AQMPs to meet the CAAQS and NAAQS. In December 2012, the SCAQMD adopted the 2012 Air Quality Management Plan, which incorporates scientific and technological information and planning assumptions, including growth projections.[36] The 2012 AQMP incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, and on-road and off-road mobile sources. The 2012 AQMP builds upon improvements in previous plans, and includes new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches. In addition, it highlights the significant amount of emission reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal Clean Air Act.

The key undertaking of the 2012 AQMP is to bring the Air Basin into attainment with the NAAQS for the 24-hour PM2.5 standard. It also intensifies the scope and pace of continued air quality improvement efforts toward meeting the 2024 8-hour ozone standard deadline with new measures designed to reduce reliance on the federal CAA Section 182(e)(5) long-term measures for NO_X and VOC reductions. The SCAQMD expects exposure reductions to be achieved through implementation of new and advanced control technologies as well as improvement of existing technologies.

The SCAQMD released the Draft 2016 AQMP on June 30, 2016 for public review and comment. A revised Draft 2016 AQMP was released in October 2016 and the SCAQMD Governing Board adopted the 2016 AQMP on March 3, 2017.[37] CARB approved the 2016 on March 23, 2017. Key elements of the 2016 AQMP include implementing fair-share emissions reductions strategies at the federal, state, and local levels; establishing partnerships, funding, and incentives to accelerate deployment of zero and near-zero-emissions technologies; and taking credit from co-benefits

[36] South Coast Air Quality Management District, 2012 Air Quality Management Plan, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan. Accessed April 2016.

[37] South Coast Air Quality Management District, Air Quality Management Plan (AQMP). Available: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan. Accessed March 2017.

from greenhouse gas, energy, transportation and other planning efforts.[38] The strategies included in the 2016 AQMP are intended to demonstrate attainment of the NAAQS for the federal non-attainment pollutants ozone and PM2.5.[39] While the 2016 AQMP was adopted by the SCAQMD and CARB, it has not been yet received USEPA approval for inclusion in the SIP. Therefore, until such time as the 2016 AQMP is approved by the USEPA, the 2012 AQMP remains the applicable AQMP.

SCAQMD Air Quality Guidance Documents

The CEQA Air Quality Handbook was published by the SCAQMD in November 1993 to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts. The CEQA Air Quality Handbook provides standards, methodologies, and procedures for conducting air quality analyses in Environmental Impact Reports and was used extensively in the preparation of this analysis. However, the SCAQMD is currently in the process of replacing the CEQA Air Quality Handbook with the Air Quality Analysis Guidance Handbook. While this process is underway, the SCAQMD recommends that lead agencies avoid using the screening tables in Chapter 6 (Determining the Air Quality Significance of a Project) of the CEQA Air Quality Handbook, because the tables were derived using an obsolete version of CARB's mobile source emission factor inventory, and the trip generation characteristics of the land uses identified in these screening tables were based on the fifth edition of the Institute of Transportation Engineer's Trip Generation Manual, instead of the most current edition. Additionally, the lead agency should avoid using the on-road mobile source emission factors in Table A9-5-J1 through A9-5-L (EMFAC7EP Emission Factors for Passenger Vehicles and Trucks, Emission Factors for Estimating Material Hauling, and Emission Factors for Oxides of Sulfur and Lead). The SCAQMD instead recommends using other approved models to calculate emissions from land use projects, such as the California Emissions Estimator Model (CalEEMod) software, initially released in 2011 and updated in 2016.[40]

The SCAQMD has published a guidance document called the Localized Significance Threshold Methodology for CEQA Evaluations that is intended to provide guidance in evaluating localized effects from mass emissions during construction.[41] The SCAQMD adopted additional guidance regarding PM2.5 in a document called Final Methodology to Calculate Particulate Matter PM2.5 and PM2.5 Significance Thresholds.[42] This latter document has been incorporated by the SCAQMD into its CEQA significance thresholds and Localized Significance Threshold (LST) Methodology.

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38 Ibid.

39 South Coast Air Quality Management District, NAAQS/CAAQS and Attainment Status for South Coast Air Basin, (2016). Available at http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=2. Accessed March 2017.

40 South Coast Air Quality Management District, CEQA Air Quality Handbook (1993), http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993). Accessed April 2016.

41 South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, (2008).

42 South Coast Air Quality Management District, Final Methodology to Calculate Particulate Matter (PM)2.5 and PM2.5 Significance Thresholds, (2006).

SCAQMD Rules and Regulations

Several SCAQMD rules adopted to implement portions of the AQMP may apply to the proposed project. For example, SCAQMD Rule 403 requires implementation of best available fugitive dust control measures during active construction periods capable of generating fugitive dust emissions from on-site earth-moving activities, construction/demolition activities, and construction equipment travel on paved and unpaved roads. The project may be subject to the following SCAQMD rules and regulations:

Regulation IV – Prohibitions: This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, fuel contaminants, start-up/shutdown exemptions and breakdown events. The following is a list of rules which may apply to the project:

- Rule 402 – Nuisance: This rule states that a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- Rule 403 – Fugitive Dust: This rule requires projects to prevent, reduce or mitigate fugitive dust emissions from a site. Rule 403 restricts visible fugitive dust to the project property line, restricts the net PM10 emissions to less than 50 micrograms per cubic meter ($\mu g/m^3$) and restricts the tracking out of bulk materials onto public roads. Additionally, projects must utilize one or more of the best available control measures (identified in the tables within the rule). Mitigation measures may include adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers and/or ceasing all activities. Finally, a contingency plan may be required if so determined by the USEPA.

Regulation XI – Source Specific Standards: Regulation XI sets emissions standards for different specific sources. The following is a list of rules which may apply to the project:

- Rule 1113 – Architectural Coatings: This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.
- Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters: This rule specifies NO_X emission limits for natural gas-fired water heaters, with heat input rates less than 75,000 British thermal units (BTUs) per hour.
- Rule 1186 – PM10 Emissions from Paved and Unpaved Roads, and Livestock Operations: This rule applies to owners and operators of paved and unpaved roads and livestock operations. The rule is intended to reduce PM10 emissions by requiring the cleanup of material deposited onto paved roads, use of certified street sweeping equipment, and treatment of high-use unpaved roads (see also Rule 403).
- **Regulation XIV – Toxics and Other Non-Criteria Pollutants:** Regulation XIV sets requirements for new permit units, relocations, or modifications to existing permit units which emit toxic air contaminants or other non-criteria pollutants. The following is a list of rules which may apply to the Project: 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.

Regional Comprehensive Plan and Guide and Congestion Management Plan

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the federally designated metropolitan planning organization (MPO) for the majority of the Southern California region and is the largest MPO in the nation. With regard to air quality planning, SCAG has prepared the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP), which address regional development and growth forecasts, form the basis for the land use and transportation control portions of the AQMP and are utilized in the preparation of the air quality forecasts and consistency analysis included in the AQMP. The RTP, RTIP, and AQMP are based on projections originating within local jurisdictions.

2.1.4 Local

City of Dana Point General Plan

The City of Dana Point supports regional efforts to control air pollution through effective and use and circulation planning as well as reducing vehicular travel by encouraging alternative modes of transportation. In the Conservation/Open Space Element, the City of Dana Point has the following goals and policies dedicated to reducing air pollution.

Goal 5: **Reduce air pollution through land use, transportation and energy use planning.**

Policy 5.1: Design safe and efficient vehicular access to streets to ensure efficient vehicular ingress and egress.

Policy 5.2: Locate multiple family developments close to commercial areas to encourage pedestrian rather than vehicular travel.

Policy 5.3: Encourage neighborhood parks close to concentrations of residents to encourage pedestrian travel to public recreation facilities.

Policy 5.4: Provide commercial areas that are conducive to pedestrian and bicycle circulation.

Policy 5.5: Actively participate in regional discussions regarding new regional airport facilities and analyze and evaluate potential impacts on the City.

Policy 5.6: Encourage bicycle/trail systems to reduce air pollution.

Policy 5.7: Consider the development of shuttle systems, train or transit facilities, to help reduce vehicular trips and air pollution.

City of Dana Point Municipal Code

Chapter 12.10, Mobile Source Air Pollution Reduction Program, of the City's Municipal Code establishes the Air Quality Improvement Trust Fund. The Air Quality Improvement Trust Fund is authorized to receive a portion of funds from motor vehicle registration to be expended on programs and projects aimed at reducing mobile-source emissions. As established in the City's Municipal Code, programs implemented by the City using funds utilized from the Air Quality Improvement Trust Fund shall be consistent with the California Clear Air Act of 1988, or the plan proposed pursuant to Article 5 (commencing with Section 40460) of Chapter 5.5 of Part 3 of the California Health and Safety Code.

2.2 Greenhouse Gas

2.2.1 Federal

USEPA

The USEPA is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO_2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

In *Massachusetts v. Environmental Protection Agency* (Docket No. 05–1120), the United States Supreme Court held in April of 2007 that the USEPA has statutory authority under Section 202 of the CAA to regulate GHGs. The Court did not hold that the USEPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare.

On May 19, 2009, President Barack Obama announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy standards and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO_2 per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO_2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle.[43]

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA. The USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) on December 7, 2009. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA consistently with the United States Supreme Court decision. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

In addition to USEPA efforts to implement GHG reporting and monitoring systems, the Obama Administration on June 25, 2013 released *The President's Climate Action Plan* that promotes efforts to reduce GHG emissions by deploying clean energy solutions, developing and deploying advanced transportation technologies, and cutting energy waste in homes, businesses, and factories.[44] Additionally, federal agencies are committing to release Climate Change Adaptation Plans, which promote the construction of stronger and safer communities and infrastructure, protect the economy and natural resources, and use sound science to manage climate impacts.

In the most recent international climate change agreement adopted at the Paris UNFCCC climate conference in December 2015 ("Paris Accord"), the United States set its intended nationally determined contribution to reduce its greenhouse gas emissions by 26 to 28 percent below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28 percent. These targets were set with the goal of limiting global temperature rise to below 2 degrees Celsius and getting to the 80 percent emission reduction by 2050.[45]

However, on June 1, 2017, President Donald Trump issued a statement announcing that "the United States will cease all implementation of the non-binding Paris Accord and the draconian financial and economic burdens the agreement imposes on our country. This includes ending the implementation of the nationally determined contribution and, very importantly, the Green Climate Fund which is costing the United States a vast fortune."[46]

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43 United States Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, (August 2012). Available at: http://www.epa.gov/oms/climate/documents/420f12051.pdf. Accessed March 2017.

44 The White House, The President's Climate Action Plan, https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf, June 2013, Accessed September 12, 2016.

45 United Nations Framework Convention on Climate Change (UNFCCC), *United States Intended Nationally Determined Contribution.* http://www4.unfccc.int/submissions/INDC/Published%20Documents/United%20States%20of%20America/1/U.S.%20Cover%20Note%20INDC%20and%20Accompanying%20Information.pdf, Accessed July 9, 2017,

46 https://www.whitehouse.gov/the-press-office/2017/06/01/statement-president-trump-paris-climate-accord, Accessed July 9, 2017.

Clean Power Plan

On August 3, 2015, President Obama and the EPA announced the Clean Power Plan. The Clean Power Plan sets achievable standards to reduce carbon dioxide emissions by 32 percent from 2005 levels by 2030.[47] This Plan establishes final emissions guidelines for states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired electric generating units (EGUs). Specifically, the EPA is establishing: (1) carbon dioxide emission performance rates representing the best system of emission reduction for two subcategories of existing fossil fuel-fired EGUs, fossil fuel-fired electric utility steam generating units and stationary combustion turbines; (2) state-specific CO_2 goals reflecting the CO_2 emission performance rates; and (3) guidelines for the development, submittal and implementation of state plans that establish emission standards or other measures to implement the CO_2 emission performance rates, which may be accomplished by meeting the state goals. This final rule would continue progress already under way in the U.S. to reduce CO_2 emissions from the utility power sector.[48] On February 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan pending judicial review. In addition, EPA is currently proposing to repeal the Clean Power Plan after completing a thorough review as directed by the Executive Order on Energy Independence (as discussed below). [49] In sum, the Clean Power Plan continues to face multiple legal challenges and its future is uncertain.

Executive Order on Energy Independence

On March 28, 2017, President Donald Trump signed Executive Order 13783, "Promoting Energy Independence and Economic Growth," which calls for:

- Review of the Clean Power Plan
- Review of the 2016 Oil and Gas New Source Performance Standards for New, Reconstructed, and Modified Sources
- Review of the Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Generating Units
- Withdrawal of Proposed Rules: Federal Plan Requirements for Greenhouse Gas Emissions From Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations; and Clean Energy Incentive Program Design Details[50]

Given this executive order, President Trump's decision to withdraw from the Paris Accord, and the Trump Administration's comments concerning climate change, the federal regulations on greenhouse gas emissions are currently uncertain.

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47 The White House, *Climate Change and President Obama's Action Plan*, https://www.whitehouse.gov/the-record/climate, Accessed September 12, 2016.

48 U.S. Environmental Protection Agency, *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units,* http://www2.epa.gov/sites/production/files/2015-08/documents/cpp-final-rule.pdf, September 12, 2016.

49 U.S. Environmental Protection Agency, *Electric Utility Generating Units: Repealing the Clean Power Plan: Proposal*, https://www.epa.gov/stationary-sources-air-pollution/electric-utility-generating-units-repealing-clean-power-plan-0, Accessed February 12, 2018.

50 *See* https://www.epa.gov/energy-independence, Accessed July 9, 2017.

2.2.2 State

California Green Building Standards

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development in 2008. CALGreen standards require new residential and commercial buildings to comply with mandatory measures under five topical areas: planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt which encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code went into effect January 1, 2017.

Senate Bills and Executive Orders

<u>Assembly Bill 1493</u>. AB 1493 (also known as the Pavley Bill) requires that CARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHG emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State."

To meet AB 1493 requirements, CARB approved amendments to the California Code of Regulations (CCR) in 2004 by adding GHG emissions standards to California's existing standards for motor vehicle emissions. When fully phased in, the near-term standards would reduce GHG emissions by approximately 22 percent, compared to the 2002 fleet emissions, while the mid-term standards would reduce emissions by approximately 30 percent.

<u>Assembly Bill 32 (California Global Warming Solutions Act of 2006)</u>. The State passed the California Global Warming Solutions Act of 2006 (AB 32; *California Health and Safety Code* Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires a reduction in statewide GHG emissions to 1990 levels by 2020.

<u>Senate Bill 1368</u>. SB 1368 (Chapter 598, Statutes of 2006) is the companion bill of AB 32 and was signed into law in September 2006. SB 1368 required the CPUC to establish a performance standard for baseload generation of GHG emissions by investor-owned utilities by February 1, 2007. SB 1368 also required the CEC to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas fired plant.

<u>Senate Bill 97</u>. SB 97, signed in August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to

CARB guidelines for the feasible mitigation of GHG emissions (or the effects of GHG emissions), as required by CEQA.

OPR published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate project related GHG emissions. Specifically, based on available information, CEQA lead agencies should estimate the emissions associated with project-related vehicular traffic, energy consumption, water usage, and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible. OPR requested CARB technical staff to recommend a method for setting CEQA thresholds of significance, as described in *CEQA Guidelines* Section 15064.7 that would encourage consistency and uniformity in CEQA GHG emissions analyses throughout the State.

The Natural Resources Agency adopted the CEQA Guidelines Amendments prepared by OPR, as directed by SB 97. On February 16, 2010, the Office of Administrative Law approved the CEQA Guidelines Amendments and filed them with the Secretary of State for inclusion in the CCR. The CEQA Guidelines Amendments became effective on March 18, 2010.

<u>Senate Bill 375</u>. SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires MPOs to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that would prescribe land use allocation in that MPOs regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for passenger car and light truck regional emissions for 2020 and 2035. Reduction targets are updated every eight years, but can be updated every four years, if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may be ineligible for funding programmed after January 1, 2012.

<u>Senate Bill 32</u>. Signed into law on September 8th 2016, SB 32 (Amendments to California Global Warming Solutions Act of 2006: Emission Limit) codifies the 2030 target in the recent Executive Order B-30-15 (40 percent below 1990 levels by 2030). The 2030 target is intended to ensure that California remains on track to achieve the goal set forth by E.O. B-30-15 to reduce Statewide GHG emissions by 2050 to 80 percent below 1990 levels. SB 32 states the intent of the Legislature to continue to reduce GHG for the protection of all areas of the state and especially the state's most disadvantaged communities which are disproportionately impacted by the deleterious effects of climate change on public health.[51] SB 32 was passed with companion legislation AB 197, which provides additional direction for developing the Scoping Plan.

<u>Senate Bills 1078 and 107</u>. SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at

51 California Legislative Information, *SB-32 California Global Warming Solutions Act of 2006: emissions limit (2015–2016)*, http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32, accessed September 12, 2016.

least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

Senate Bill 350. Known as the Clean Energy and Pollution Reduction Act of 2015, SB 350 (Chapter 547, Statutes of 2015) was approved by Governor Brown on October 7, 2015. SB 350 will (1) increase the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) require the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; (3) provide for the evolution of the Independent System Operator into a regional organization; and (4) require the state to reimburse local agencies and school districts for certain costs mandated by the state through procedures established by statutory provisions. Among other objectives, the Legislature intends to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.[52]

Executive Order S-14-08. Executive Order S-14-08 expands the State's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring that 33 percent of electricity sold in the State come from renewable energy by 2020. CARB adopted the "Renewable Electricity Standard" on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned electricity retailers.

Executive Order S-21-09. Executive Order S-21-09 directs CARB to adopt regulations to increase California's Renewable Portfolio Standard (RPS) to 33 percent by 2020. The target was signed into law as SB 2 by Governor Brown in April 2011. This builds upon SB 1078 (2002), which established the California RPS program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010.

Executive Order S-3-05. Executive Order S-3-05 set forth the following targets for progressively reducing statewide GHG emissions:

- 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.

The Executive Order directed the Secretary of the California Environmental Protection Agency (Cal EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary is also mandating that biannual reports be submitted to the California Governor and Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these

52 SB-350 Clean Energy and Pollution Reduction Act of 2015. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350, Accessed July 9, 2017.

impacts. To comply with the executive order, the secretary of Cal/EPA created the California Climate Action Team (CAT), made up of members from various State agencies and commissions.

Executive Order S-20-06. On October 17, 2006, Governor Arnold Schwarzenegger signed EO S-20-06, which calls for continued efforts and coordination among state agencies to implement GHG emission reduction policies, AB 32, and the Health and Safety Code (Division 25.5) through a market-based compliance program. In addition, EO S-20-06 requires the development of GHG reporting and reduction protocols and a multistate registry through joint efforts among CARB, California Environmental Protection Agency (Cal/EPA), and the California Climate Action Registry (CCAR). EO S-20-06 directs the Secretary for Environmental Protection to coordinate with the CAT to plan incentives for market-based mechanisms that have the potential of reducing GHG emissions.

Executive Order S-1-07. Executive Order S-1-07 proclaims that the transportation sector is California's main source of GHG emissions, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs the CARB to determine whether this LCFS can be adopted as a discrete early-action measure, as part of the effort to meet AB 32 mandates.

Executive Order S-13-08. Executive Order S-13-08 seeks to enhance the State's management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of the State's first climate adaptation strategy. This would provide consistent guidance from experts on how to address climate change impacts in the State.

Executive Order B-16-2012. In March 23, 2012, Governor Brown issued EO B-16-2012 to encourage zero emission vehicles (ZEVs) and related infrastructure. It orders CARB, CEC, California Public Utilities Commission, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks concerning ZEVs. By 2020, the state's ZEV infrastructure should support up to one million vehicles. By 2025, EO B-16-2012 aims to put over 1.5 million ZEVs on California roads and displace at least 1.5 billion gallons of petroleum. The EO also directs state government to begin purchasing ZEVs. In 2015, 10 percent of state departments' light-duty fleet purchases must be ZEVs, climbing to 25 percent of light duty purchases by 2020. EO B-16-2012 sets a target for 2050 to reduce GHG emissions in the transportation sector by 80 percent below 1990 levels.[53]

Executive Order B-30-15. Executive Order B-30-15 added the interim target to reduce statewide GHG emissions 40 percent below 1990 levels by 2030, and requires CARB to update its current AB 32 Scoping Plan to identify measures to meet the 2030 target.

[53] Office of Governor Edmund G. Brown Jr., *Executive Order B-16-2012,* http://gov.ca.gov/news.php?id=17472, Accessed September 12, 2016.

CARB Scoping Plan

On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap to achieve the California GHG reductions required by AB 32 through subsequently enacted regulations. CARB's Scoping Plan contains the main strategies California would implement to reduce the projected 2020 Business as Usual (BAU) emissions to 1990 levels, as required by AB 32. These strategies are intended to reduce CO_2e[54] emissions by 174 million metric tons (MT), or approximately 30 percent, from the State's projected 2020 emissions level of 596 million MT CO_2e under a BAU[55] scenario. This reduction of 42 million MT CO_2e, or almost ten percent from 2002 to 2004 average emissions, would be required despite the population and economic growth forecasted through 2020.

CARB's Scoping Plan calculates 2020 BAU emissions as those expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors (e.g., transportation, electrical power, commercial and residential, industrial, etc.). CARB used three-year average emissions, by sector, for 2002 to 2004 to forecast emissions to 2020. When CARB's Scoping Plan process was initiated, 2004 was the most recent year for which actual data was available. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32.

The 2008 Scoping Plan included several measures related to the water sector, including Measure W-1 (Water Use Efficiency), Measure W-2 (Water Recycling), Measure W-3 (Water System Energy Efficiency), Measure W-4 (Reuse Urban Runoff), Measure W-5 (Increase Renewable Energy Production), and Measure W-6 (Public Goods Charge). Of these measures, Measure W-3 is the most applicable to the proposed project, as the single measure with greatest GHG benefit and specifically aimed at reducing GHG related emissions for the overall water system for an agency by reducing the "magnitude and intensity" of energy use in California's water systems.[56] Measure W-3 has a "target" of 20 percent energy efficiency from 2006 levels. The Scoping Plan, however, also notes that GHG reductions in the water sector are not counted toward the AB 32 2020 goal and are "indirectly realized through the reduced energy requirements and are accounted for in the Electricity and Natural Gas sector".[57]

First Update to the Climate Change Scoping Plan (May 2014)

This First Update to California's Climate Change Scoping Plan (2014 Scoping Plan Update) was developed by the CARB in collaboration with the Climate Action Team and reflects the input and expertise of a range of state and local government agencies. The Update reflects public input and

[54] Carbon Dioxide Equivalent (CO_2e) - A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

[55] "Business as Usual" refers to emissions expected to occur in the absence of any GHG reduction measure (California Environmental Protection Agency Air Resources Board Website, http://www.arb.ca.gov/cc/inventory/data/bau.htm, Accessed June 1, 2016). Note that there is significant controversy as to what BAU means. In determining the GHG 2020 limit, CARB used the above as the "definition."

[56] Climate Change Scoping Plan, ARB, December 2008, Appendix C, page 134.

[57] Climate Change Scoping Plan, ARB, December 2008, page 66.

recommendations from business, environmental, environmental justice, utilities and community-based organizations provided in response to the release of prior drafts of the Update, a Discussion Draft in October 2013, and a draft Proposed Update in February 2014.

This report highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050. The First Update includes recommendations for establishing a mid-term emissions limit that aligns with the State's long-term goal of an emissions limit 80 percent below 1990 levels by 2050 and sector-specific discussions covering issues, technologies, needs, and ongoing State activities to significantly reduce emissions throughout California's economy through 2050. The focus areas include energy, transportation, agriculture, water, waste management, and natural and working lands.[58] With respect to the transportation sector, California has outlined several steps in the State's zero emission vehicle (ZEV) Action Plan to further support the market and accelerate its growth. Committed implementation of the actions described in the plan will help meet Governor Brown's 2012 Executive Order (EO) B-16-2012, which—in addition to establishing a more specific 2050 GHG target for the transportation sector of 80 percent from 1990 levels—called for 1.5 million ZEVs on California's roadways by 2025.

Achieving such an aggressive 2050 target will require innovation and unprecedented advancements in energy demand and supply.[59] Emissions from 2020 to 2050 will have to decline at more than twice the rate of that which is needed to reach the 2020 statewide emissions limit. In addition to our climate objectives, California also must meet federal clean air standards. Emissions of criteria air pollutants, including ozone precursors (primarily oxides of nitrogen, or NO_X) and particulate matter, must be reduced by an estimated 90 percent by 2032 to comply with federal air quality standards. The scope and scale of emission reductions necessary to improve air quality is similar to that needed to meet long-term climate targets. Achieving both objectives will align programs and investments to leverage limited resources for maximum benefit.

The 2014 Scoping Plan Update provides various policy goals for the water sector, focused primarily on conservation (reducing water consumption reduces GHG emissions associated with production, treatment and conveyance of water), energy efficiency (minimizing GHG emissions due to electricity demand associated with the water sector), and reliance upon a diverse water supply portfolio that includes less energy intensive water supply sources. However, the 2014 Scoping Plan Update notes that these AB 32 related policies have the potential to conflict with other public policies, programs and regulations. Specifically, the 2014 Scoping Plan Update notes the following:

> *Multiple policy objectives must be balanced across a wide spectrum of State water and climate planning documents, such as the AB 32 Scoping Plan, the Safeguarding California Plan, the California Water Plan, the Delta Plan, the Bay Delta Conservation Plan, and the Integrated Regional Water Management*

58 California Air Resources Board, *First Update to the Climate Change Scoping Plan,* http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf, May 2014, Accessed September 12, 2016.

59 Ibid.

Strategic Plan. The California Water Action Plan provides some guidance on the relationship between the priorities established in these water and climate planning documents by establishing priorities for the next five years. State agency collaboration and policy alignment requires a foundation of information sharing and feedback. Both agency staff and executives will need to devote more time to inter-agency dialogue to ensure that policy differences are resolved with a full understanding of the consequences of decisions taken. In addition, achieving efficient and aligned policies across agencies may require alterations to existing agency authorities and decision-making procedures.[60]

Second Update to the Climate Change Scoping Plan (November 2017)

On December 14, 2017, CARB approved the final version of *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan Update), which outlines the proposed framework of action for achieving the 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels.[61] The 2017 Scoping Plan Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water. Through a combination of data synthesis and modeling, CARB determined that the target Statewide 2030 emissions limit is 260 MMT CO2e, and that further commitments will need to be made to achieve an additional reduction of 50 MMT CO2e beyond current policies and programs. The cornerstone of the 2017 Scoping Plan Update is an expansion of the Cap-and-Trade program to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2050 limit set forth by E.O. B-30-15.

With respect to project-level GHG reduction actions and thresholds for individual development projects, the 2017 Scoping Plan Update indicates:

Beyond plan-level goals and actions, local governments can also support climate action when considering discretionary approvals and entitlements of individual projects through CEQA. Absent conformity with an adequate geographically-specific GHG reduction plan as described in the preceding section above, CARB recommends that projects incorporate design features and GHG reduction measures, to the degree feasible, to minimize GHG emissions. Achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development.[62]

Renewable Energy: California Renewables Portfolio Standard Program

Established in 2002 under SB 1078, accelerated in 2006 under SB 107, expanded in 2011 under SB X1-2, and again in 2015 under SB 350, California's Renewables Portfolios Standard (RPS) is one of the most ambitious renewable energy standards in the country. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase

60 Ibid, page 64.

61 CARB, *California's 2017 Climate Change Scoping Plan: The strategy for achieving California's 2030 greenhouse gas target*, November, 2017, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf; accessed December 18, 2017.

62 *Id.* at 101.

procurement from eligible renewable energy resources to 50 percent of total procurement by December 31, 2030.[63]

2.2.3 Regional

Southern California Association of Governments

The Southern California Association of Governments (SCAG), which is the Metropolitan Planning Organization for the region in which West Basin operates, prepares the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) every four years. [64] The RTP/SCS provides the regional blueprint for transportation improvements over the next twenty years as well as population forecasts and policies to encourage land use patterns that reduce GHG emissions in order to meet the GHG emissions reduction targets for the region. The population forecasts are used by a number of agencies to plan for the future. The SCAQMD uses the SCAG forecast as the basis of the analysis in the AQMP.

In February 2011, CARB adopted targets for SCAG for transportation-related GHG emissions. The targets include a per capita reduction of 8 percent for 2020 and 13 percent for 2035 compared to the 2005 baseline. On April 7, 2016, SCAG adopted the 2016 RTP/SCS, the four-year update to the 2012 RTP/SCS.[65] Using growth forecasts and economic trends, the 2016 RTP/SCS provides a vision for transportation throughout the region for the next 25 years. It considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address mobility needs. The 2016 RTP/SCS describes how the region can attain the GHG emission-reduction targets set by CARB by achieving an 8 percent reduction by 2020, 18 percent reduction by 2035, and 21 percent reduction by 2040 compared to the 2005 level on a per capita basis.[66] Compliance with and implementation of 2016 RTP/SCS policies and strategies would have co-benefits of reducing per capita criteria air pollutant emissions associated with reduced per capita vehicle miles traveled (VMT).

South Coast Air Quality Management District

The project site is located in the South Coast Air Basin, which consists of Orange County, Los Angeles County (excluding the Antelope Valley portion), and the western, non-desert portions of San Bernardino and Riverside Counties, in addition to the San Gorgonio Pass area in Riverside County. The SCAQMD is responsible for air quality planning in the Air Basin and developing rules and regulations to bring the area into attainment of the ambient air quality standards.

Air districts typically act in an advisory capacity to local governments in establishing the framework for environmental review of air pollution and GHG impacts under CEQA. This

[63] As of 2015, California's top three POUs were on track or ahead of their respective RPS targets, with PG&E, SCE and SDG&E reporting RPS procurements for 2020 at 29.5%, 24.5% and 35.2%, respectively (www.cpuc.ca.gov/rps_homepage/, accessed November 8, 2017).

[64] California Air Resources Board, Sustainable Communities. Available at: https://www.arb.ca.gov/cc/sb375/sb375.htm. Accessed November 2017.

[65] Southern California Association of Governments, 2016 RTP/SCS. Available at: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx. Accessed November 2017.

[66] Ibid.

includes recommendations regarding significance thresholds, analytical tools to estimate emissions and assess impacts, and mitigation measures for potentially significant impacts. Although districts also address some of these issues on a project-specific basis as responsible agencies, they may provide general guidance to local governments on these issues. Because of its expertise in establishing air quality analysis methodologies and comprehensive efforts to establish regional and localized significance thresholds for criteria pollutants, local public agencies have asked SCAQMD for guidance in quantifying GHG impacts and recommending GHG significance thresholds to assist them with determining whether or not GHG impacts in their CEQA documents are significant.

After AB 32 was passed, the SCAQMD formed a Climate Change Committee along with a Greenhouse Gases CEQA Significance Thresholds Working Group and the SoCal Climate Solutions Exchange Technical Advisory Group. On September 5, 2008, the SCAQMD Board approved the SCAQMD Climate Change Policy, which outlines actions the District will take to assist businesses and local governments in implementing climate change measures, decrease the agency's carbon emissions, and provide information to the public regarding climate change. On December 5, 2008, the SCAQMD adopted an annual screening level threshold of 10,000 metric tons (MT) CO_2e for industrial projects for which the SCAQMD is the Lead Agency or has discretionary approval.[67] The SCAQMD, in accordance with CEQA Guidelines Section 15064.7, adopted its annual threshold for industrial sources under a public review process as part of stakeholder working group meetings that were open to the public and based on substantial evidence. The intent of the threshold is to capture 90 percent of total emissions from all new or modified industrial and stationary source sector projects subject to a CEQA analysis where the SCAQMD is the Lead Agency. Data collected by the SCAQMD from its Annual Emissions Reporting Program indicates that a 90 percent capture rate would cover a substantial portion of future project emissions and would exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. The SCAQMD estimates that these small projects will in aggregate contribute less than one (1) percent of the future 2050 statewide GHG emissions target.

2.2.4 Local

For Local Regulations see Section 2.1.4 above in addition to the following.

City of Dana Point Municipal Code

Under Chapter 8.32.001 of the Municipal Code, the City of Dana Point adopts the California Code of Regulations Title 24, Part 11 (California Green Building Code, 2016 Edition).

67 South Coast Air Quality Management District, Board Meeting, Agenda No. 31, Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, December 5, 2008. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2. Accessed December 2017.

City of Dana Point Construction and Demolition Waste Ordinance (No. 03-17).

The City's Construction and Demolition Waste Ordinance requires contractors and other construction personnel to obtain a permit and haul at least 75 percent of their construction waste to a recycling facility certified by the City. The City of Dana Point requires a construction and demolition deposit in the amount of 1 percent of the project's valuation in order to encourage compliance with the ordinance.

2.3 Energy

2.3.1 Federal

USEPA

Energy Policy Act of 2005

On August 8, 2005, President George W. Bush signed the National Energy Policy Act of 2005 (Public Law 109-58) into law. This comprehensive energy legislation contains several electricity-related provisions that aim to:

- Help ensure that consumers receive electricity over a dependable, modern infrastructure;
- Remove outdated obstacles to investment in electricity transmission lines;
- Make electric reliability standards mandatory instead of optional; and
- Give Federal officials the authority to site new power lines in DOE-designated national corridors in certain limited circumstances.

The Renewable Fuel Standard (RFS) program was created under the Energy Policy Act (EPAct) of 2005, and established the first renewable fuel volume mandate in the United States. The program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders. As required under EPAct, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act (EISA; Public Law 110-140) was signed into law by President George W. Bush on December 19, 2007. The Act's goal is to achieve energy security in the United States by increasing renewable fuel production, improving energy efficiency and performance, protecting consumers, improving vehicle fuel economy, and promoting research on greenhouse gas capture and storage. Under the EISA, the RFS program (RFS2) was expanded in several key ways:

- EISA expanded the RFS program to include diesel, in addition to gasoline.
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- EISA established new categories of renewable fuel, and set separate volume requirements for each one.

- EISA required EPA to apply lifecycle greenhouse gas performance threshold standards to ensure that each category of renewable fuel emits fewer greenhouse gases than the petroleum fuel it replaces.

RFS2 lays the foundation for achieving significant reductions of greenhouse gas emissions from the use of renewable fuels, for reducing imported petroleum, and encouraging the development and expansion of our nation's renewable fuels sector.

The EISA also includes a variety of new standards for lighting and for residential and commercial appliance equipment. The equipment includes residential refrigerators, freezers, refrigerator-freezers, metal halide lamps, and commercial walk-in coolers and freezers.

2.3.2 State

Renewable Energy: California Renewables Portfolio Standard Program

Established in 2002 under SB 1078, accelerated in 2006 under SB 107, and expanded in 2011 under SB 2, California's Renewables Portfolios Standard (RPS) is one of the most ambitious renewable energy standards in the country. The RPS program requires investor-owned utilities (IOUs), electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020. On September 12, 2002, then-Governor Gray Davis signed SB 1078. SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

In November 2008, then-Governor Arnold Schwarzenegger signed EO S-14-08, which expands the state's RPS to 33 percent renewable power by 2020. In September 2009, former Governor Schwarzenegger continued California's commitment to the RPS by signing EO S-21-09, which directs CARB under its AB 32 authority to enact regulations to help the state meet its RPS goal of 33 percent renewable energy by 2020.

The 33 percent by 2020 goal was codified in April 2011 with SB X1-2, which was signed by Governor Edmund G. Brown, Jr. This RPS preempts the CARB 33 percent Renewable Electricity Standard and applies to all electricity retailers in the state, including publicly owned utilities (POUs), IOUs, electricity service providers, and community choice aggregators. These entities must adopt the new RPS goals of 20 percent of retail sales from renewables by the end of 2013 and 25 percent by the end of 2016, with the 33 percent requirement being met by the end of 2020.[68]

The Clean Energy and Pollution Reduction Act of 2015, Senate Bill (SB) 350 (Chapter 547, Statutes of 2015) was approved by Governor Brown on October 7, 2015. SB 350 will (1) increase the standards of the California RPS program by requiring that the amount of electricity generated

68 At this time, California's top three POUs are well ahead of their respective RPS targets, with PG&E, SCE and SDG&E reporting RPS procurements for 2020 at 33%, 28% and 43%, respectively (www.cpuc.ca.gov/rps_homepage/, accessed December 7, 2017).

and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) require the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; (3) provide for the evolution of the Independent System Operator into a regional organization; and (4) require the state to reimburse local agencies and school districts for certain costs mandated by the state through procedures established by statutory provisions. Among other objectives, the Legislature intends to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.[69]

California Green Building Standards

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development in 2008. CALGreen standards require new residential and commercial buildings to comply with mandatory measures under five topical areas: planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt which encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code went into effect January 1, 2017.

California Building Energy Efficiency Standards: 2016 Title 24, Part 6 (California Energy Code)

The California Energy Code (Title 24, Section 6) was created as part of the California Building Standards Code (Title 24 of the California Code of Regulations) by the California Building Standards Commission in 1978 to establish statewide building energy efficiency standards to reduce California's energy consumption.[70] These standards include provisions applicable to all buildings, residential and nonresidential, which describe requirements for documentation and certificates that the building meets the standards.[71] These provisions include mandatory requirements for efficiency and design of the following types of systems, equipment, and appliances:

- Air conditioning systems
- Heat pumps
- Water chillers

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69 *SB-350 Clean Energy and Pollution Reduction Act of 2015*. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350, Accessed December 18, 2017.

70 California Building Standards Commission, History, http://www.bsc.ca.gov/abt_bsc/history.aspx, Accessed 26 June 2015.

71 California Energy Commission, 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf, Accessed June 19 2015.

- Gas- and oil-fired boilers
- Cooling equipment
- Water heaters and equipment
- Pool and spa heaters and equipment
- Gas-fired equipment including furnaces and stoves/ovens
- Windows and exterior doors
- Joints and other building structure openings (“envelope”)
- Insulation and cool roofs
- Lighting control devices

The standards include additional mandatory requirements for space conditioning (cooling and heating), water heating, and indoor and outdoor lighting systems and equipment in non-residential, high-rise residential, and hotel or motel buildings. Mandatory requirements for low-rise residential buildings cover indoor and outdoor lighting, fireplaces, space cooling and heating equipment (including ducts and fans), and insulation of the structure, foundation, and water piping. In addition to the mandatory requirements, the standards call for further energy efficiency that can be provided through a choice between performance and prescriptive compliance approaches. Separate sections apply to low-rise residential and to non-residential, high-rise residential, and hotel or motel buildings. In buildings designed for mixed use (e.g., commercial and residential), each section must meet the standards applicable to that type of occupancy.

The performance approach set forth under these standards provides for the calculation of an energy budget for each building and allows flexibility in building systems and features to meet the budget. The energy budget addresses space-conditioning (cooling and heating), lighting, and water heating. Compliance with the budget is determined by the use of a CEC-approved computer software energy model. The alternative prescriptive standards require demonstrating compliance with specific minimum efficiency for components of the building such as building envelope insulation R-values, fenestration (areas, U-factor and solar heat gain coefficients of windows and doors) and heating and cooling, water heating and lighting system design requirements. These requirements vary depending on the building’s location in the state’s 16 climate zones.

California’s Building Energy Efficiency Standards are updated on an approximately three-year cycle as technology and methods have evolved. The 2016 Standards, effective January 1, 2017, focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings, and include requirements that will enable both demand reductions during critical peak periods and future solar electric and thermal system installations.

California Assembly Bill No. 1493 (AB 1493, Pavley), (Chapter 200, Statutes of 2002)

In response to the transportation sector accounting for more than half of California’s carbon dioxide emissions, Assembly Bill (AB) 1493 (Chapter 200, Statutes of 2002), enacted on July 22, 2002, required CARB to set GHG emission standards for passenger vehicles, light duty trucks, and other vehicles whose primary use is non-commercial personal transportation manufactured in and after 2009. Refer to Section 5.7, *Greenhouse Gas Emissions*, for details regarding this regulation.

CARB's 2017 Update to Climate Change Scoping Plan (November 2017)

CARB's Climate Change Scoping Plan, which functions as a roadmap to achieve the California GHG reductions required by AB 32 and SB 32 through subsequently enacted regulations, is discussed in detail in 5.7, *Greenhouse Gas Emissions*. On December 14, 2017, CARB approved the final version of *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan Update), which outlines the proposed framework of action for achieving California's new SB 32 2030 GHG target: a 40 percent reduction in GHG emissions by 2030 relative to 1990 levels.[72] The 2017 Scoping Plan Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water. The Scoping Plan references a 2013 study by the CEC that shows 12 percent of the total energy used in the state is related to water, with 10 percent associated with water-related end uses (e.g., heating, cooling, pressurizing, and industrial processes), and 2 percent associated with energy used by water and wastewater systems (e.g., pump, convey, treat).[73] These figures indicate that the greatest potential for water-related energy savings resides with water end users, while water agencies have a role in improving end-user water conservation and in reducing the energy intensity of their portfolios. SB 350 and other regulations are expected to decarbonize the electricity sector over time, which will in turn reduce the consumption of fossil fuel-based energy to produce water.

[72] CARB, *California's 2017 Climate Change Scoping Plan: The strategy for achieving California's 2030 greenhouse gas target*, November, 2017, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf; accessed December 18, 2017.

[73] California Department of Water Resources. Water-Energy Nexus: Statewide. Web page accessed November 2017 at: http://www.water.ca.gov/climatechange/WaterEnergyStatewide.cfm

SECTION 3
Significance Thresholds

3.1 Air Quality

The significance thresholds below are derived from the Environmental Checklist question in Appendix G of the *State CEQA Guidelines*. Accordingly, a significant air quality impact would occur if the project would:

AIR-1: Conflict with or obstruct the implementation of the applicable air quality plan.

AIR-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

AIR-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

AIR-4: Expose sensitive receptors to substantial pollutant concentrations;

AIR-5: Create objectionable odors affecting a substantial number of people.

Pursuant to the State CEQA Guidelines (Section 15064.7), a lead agency may consider using, when available, the significance criteria established by the applicable air quality management district or air pollution control district when making determinations of significance. The project would be under the SCAQMD's jurisdiction. SCAQMD has established air quality significance thresholds in its CEQA Air Quality Handbook. These thresholds are based on the recognition that the Air Basin is a distinct geographic area with a critical air pollution problem for which ambient air quality standards have been promulgated to protect public health.[74] The potential air quality impacts of the project are, therefore, evaluated according to the most recent thresholds adopted by the SCAQMD in connection with its CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook, and subsequent SCAQMD guidance as discussed previously.[75]

74 South Coast Air Quality Management District, CEQA Air Quality Handbook (1993) 6-2.

75 While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, Project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from commercial and residential land use projects such as the Project. As a result, lead emissions are not further evaluated in this Draft EIR.

3.1.1 Construction Emissions

Given that construction impacts are temporary and limited to the construction phase, the SCAQMD has established numeric indicators of significance specific to construction activity. Based on the indicators in the SCAQMD CEQA Air Quality Handbook, the project would potentially cause or contribute to an exceedance of an ambient air quality standard if the following would occur:

- Regional construction emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed daily regional emissions thresholds:[76]
  - 75 pounds a day for VOC;
  - 100 pounds per day for NO_X;
  - 550 pounds per day for CO;
  - 150 pounds per day for SO_2;
  - 150 pounds per day for PM10; or
  - 55 pounds per day for PM2.5.

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 or ambient concentration limits. Impacts would be considered significant if the following would occur:

- Maximum daily localized emissions of NO_X and/or CO during construction 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 NO_2 and/or CO.[77]
- Maximum daily localized emissions of PM10 and/or PM2.5 during construction are greater than the applicable localized significance thresholds, resulting in predicted ambient concentrations in the vicinity of the project site to exceed 10.4 $\mu g/m^3$ over 24 hours (SCAQMD Rule 403 control requirement).

As discussed previously under Methodology, the SCAQMD has established screening criteria that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance thresholds and therefore not cause or contribute to an exceedance of the applicable ambient air quality standards or ambient concentration limits without project-specific dispersion modeling. This analysis uses the screening criteria to evaluate impacts from localized emissions.

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76 South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, (March 2015), http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2. Accessed June 2017.

77 South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, (2008). Available: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds. Accessed March 2017.

3.1.2 Toxic Air Contaminants

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:[78]

- 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.

As discussed previously, construction impacts from TACs are evaluated quantitatively in a refined HRA due to the use of heavy-duty, diesel equipment. For operations, the impacts are analyzed qualitatively due to the limited and minimal sources of TACs associated with operation of the proposed land uses.

3.1.3 Odors

Based on the criteria in Appendix G of the CEQA Guidelines, the project would be considered potentially significant for odors if the project would create objectionable odors affecting a substantial number of people.

3.2 Greenhouse Gases

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to the significance of a project's impact on climate change. The issues presented in the Environmental Checklist have been utilized as thresholds of significance in this section. Accordingly, the project would have a significant adverse environmental impact if it would:

GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and

GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

At this time, there is no consensus in the State of California among CEQA lead agencies regarding the analysis of global climate change and selection of significance criteria. Numerous organizations, both public and private, have released advisories and guidance with recommendations designed to assist decision makers in the evaluation of GHG emissions given the current uncertainty regarding emissions thresholds of significance.

CEQA leaves the determination of significance to the reasonable discretion of the lead agency and encourages lead agencies to develop and publish thresholds of significance to use in determining the significance of environmental effects. Lead agencies may elect to rely on

78 South Coast Air Quality Management District, CEQA Air Quality Handbook, Chapter 6 (Determining the Air Quality Significance of a Project) and Chapter 10 (Assessing Toxic Air Pollutants), (1993); SCAQMD Air Quality Significance Thresholds, (March 2011), http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2. Accessed June 2017.

thresholds of significance recommended or adopted by State or regional agencies with expertise in the field of global climate change (CEQA Guidelines Section 15064.7[c]).

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 (GHG-1).

The two CEQA Guidelines Appendix G threshold questions are related because in order to avoid global environmental harm, emissions in the developed world must be reduced compared to today and policies have been developed to address this potential harm. Therefore, it is necessary to consider project emissions in the context of overall policy consistency.

Implementation of applicable project components that are determined to have "Potentially Significant Impacts," based on the above-listed significance thresholds, are analyzed below, along with the proposed project design features and required mitigation measures, as warranted, to avoid or minimize such impacts.

3.3 Energy

The CEQA Guidelines Appendix G, *Environmental Checklist Form*, provides significance thresholds for the evaluation of a number of environmental impacts, but does not provide specific thresholds for the evaluation of impacts related to energy resources. CEQA Guidelines Appendix F, *Energy Conservation*, states that the evaluation of energy use should be evaluated in an EIR and provides guidance for consideration in this evaluation. While Appendix F does not provide specific thresholds for energy use, it recommends consideration of the following environmental impacts, to the extent relevant and applicable:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed

- The effects of the project on local and regional energy supplies and on requirements for additional capacity.

- The effects of the project on peak and base period demands for electricity and other forms of energy.

- The degree to which the project complies with existing energy standards.

- The effects of the project on energy resources; and

- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

In accordance with Appendix F of the CEQA Guidelines, the project would result in a significant impact with regard to energy if the project would:

EN-1: Conflict with adopted energy conservation plans;

EN-2: Violate State or federal energy standards;

EN-3: Cause wasteful, inefficient, and unnecessary consumption of energy during construction, operation, and/or maintenance; or

EN-4: Result in an increase in demand for electricity or natural gas that exceeds available supply or distribution infrastructure capabilities that could result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

SECTION 4
Methodology

The methodology to evaluate potential impacts to regional and local air quality that may result from the construction and long-term operations of the project is conducted as follows. Detailed modeling calculations are provided in Appendices A and B provided at the end of this report.

4.1 Air Quality

4.1.1 Consistency with Air Quality Plan

SCAQMD is required, pursuant to the CAA, to reduce emissions of criteria pollutants for which the Air Basin is in non-attainment of the NAAQS (e.g., ozone and $PM_{2.5}$). SCAQMD's 2012 Air Quality Management Plan contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving the NAAQS. These strategies are developed, in part, based on regional growth projections prepared by the SCAG. As part of its air quality planning, SCAG has prepared the Regional Comprehensive Plan and Guide and the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy, which provide the basis for the land use and transportation components of the AQMP and are used in the preparation of the air quality forecasts and the consistency analysis included in the AQMP. Both the Regional Comprehensive Plan and Air Quality Management Plan are based, in part, on projections originating with county and city general plans.

The 2016 AQMP was prepared to accommodate growth, reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, return clean air to the region, and minimize the impact on the economy. Projects that are consistent with the assumptions used in the AQMP do not interfere with attainment because the growth is included in the projections utilized in the formulation of the AQMP. Thus, projects, uses, and activities that are consistent with the applicable growth projections and control strategies used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed SCAQMD's significance thresholds.

4.1.2 Construction Emissions

Construction of the project has the potential to generate temporary criteria pollutant emissions through the use of heavy-duty construction equipment, such as excavators, and through vehicle trips generated from workers and haul trucks traveling to and from the project site. In addition, fugitive dust emissions would result from demolition and various soil-handling activities. Mobile source emissions, primarily NO_X, would result from the use of construction equipment such as dozers and loaders. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of construction activity, and prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources.

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The emissions are estimated using CalEEMod (Version 2016.3.2) software, an emissions inventory software program recommended by the SCAQMD. CalEEMod is based on outputs from OFFROAD and EMFAC, which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, including on- and off-road vehicles. The input values used in this analysis were adjusted to be project-specific based on equipment types and the construction schedule. These values were then applied to the construction phasing assumptions used in the criteria pollutant analysis to generate criteria pollutant emissions values for each construction activity. Detailed construction equipment lists, construction scheduling, and emissions calculations are provided in Appendix A.

Construction of the project is estimated to require up to 24 months, starting as early as January 2019. Subphases of construction would include demolition of existing structures and features on-site, and remodeling/upgrading of existing equipment and facilities, and limited site paving. The majority of activities are anticipated to occur above ground with no import or export of soils required. Demolition of the onsite laboratory would result in the removal of a 1,550 square foot building. Construction would occur 5 days per week between 7 am and 8 pm. Heavy-duty equipment, vendor supply trucks and concrete trucks would be used during construction activities. The maximum daily regional emissions from these activities are estimated and compared to the SCAQMD significance thresholds. The maximum daily regional emissions are predicted values for the worst-case day and do not represent the emissions that would occur for every day of project construction.

The localized effects from the on-site portion of the construction emissions are evaluated at nearby sensitive receptor locations potentially impacted by the project according to the SCAQMD's Localized Significance Threshold Methodology.[79] The localized significance thresholds are only applicable to NO_X, CO, PM10, and PM2.5. The SCAQMD has established screening criteria for projects that disturb 5 acres or less that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance thresholds and therefore not cause or contribute to an exceedance of the applicable ambient air quality standards without project-specific dispersion modeling. The localized analysis is based on this SCAQMD screening criteria. The screening criteria depend on: (1) the area in which the project is located, (2) the size of the project site, and (3) the distance between the project site and the nearest sensitive receptor. The project site is located in the SCAQMD SRA 21. The SOCWA site encompasses approximately nine acres. As a worst-case assumption, construction activities are assumed to occur over approximately seven acres of the project site. The off-site air quality sensitive receptors would be located adjacent to the project site. Therefore, the SCAQMD

[79] South Coast Air Quality Management District, Localized Significance Thresholds, (2003, revised 2008), http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds. Accessed June 2017.

localized significance threshold (LST) screening criteria applicable to a 5-acre site in SRA 21 with sensitive receptors located at 25 meters was used. The SCAQMD screening criteria increase with increasing disturbed acreage. Therefore, while the project is greater than 5 acres, the use of the 5-acre screening criteria would result in a conservative assessment as the allowable emissions would be set at a lower level than would otherwise be allowed for a larger disturbed area. Additionally, SCAQMD methodology states that for projects where receptors are closer than 25 meters, should use the 25-meter screening criteria.

4.1.3 Toxic Air Contaminants (TACs)

The potential for the project to cause impacts from TACs are evaluated by conducting a screening-level analysis. The screening-level analysis consists of reviewing the project's site plan and project description to identify any new or modified TAC emission sources. If it is determined that the project will introduce a new source of TACs, or modify an existing source, then downwind sensitive receptor locations are identified and a site-specific analysis is conducted.

The greatest potential for TAC emissions during project construction would be related to diesel particulate matter emissions associated with heavy-duty equipment during demolition, grading and excavation, and building construction activities. Construction activities associated with the project would be sporadic, transitory, and short term in nature. OEHHA is responsible for developing and revising guidelines for performing health risk assessments (HRAs) under the State's the Air Toxics Hot Spots Program Risk Assessment (AB 2588) regulation. In March 2015, OEHHA adopted revised guidelines that update the previous guidance by incorporating advances in risk assessment with consideration of infants and children using Age Sensitivity Factors (ASF). The construction HRA was performed in accordance with the revised OEHHA *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA Guidance).[80] The analysis incorporates the estimated construction emissions, as previously discussed, and a screening level analysis was conducted using AERSCREEN.

As noted above, the greatest potential for TAC emissions would be related to diesel particulate matter emissions associated with heavy equipment operations during demolition, grading and excavation, and building construction activities. In addition, incidental amounts of toxic substances such as oils, solvents, and paints would be used. These products would comply with all applicable SCAQMD rules for their manufacture and use. The project will be subject to several SCAQMD rules designed to limit exposure to TACs during construction activities. The project would be required to comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. The project would also comply with the requirements of SCAQMD Rule 1403 if asbestos is found during demolition activities.

The revised OEHHA Guidance take into account the sensitivity of children to TAC emissions, different breathing rates, and time spent at home. Children have a higher breathing rate compared

80 Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, (2015).

to adults and would likely spend more time at home resulting in longer exposure durations. On June 5, 2015, SCAQMD incorporated these guidelines in to relevant rules designed for permitting of stationary sources. Although construction would be temporary, construction impacts associated with TACs are addressed quantitatively in a refined HRA. The HRA was performed in accordance with the OEHHA Guidance.

The process of assessing health risks and impacts includes a degree of uncertainty. The level of uncertainty depends 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. In general, sources of uncertainty that may lead to an overestimation or an underestimation of the risk include extrapolation of toxicity data in animals to humans and uncertainty in the exposure estimates. In addition to uncertainty, there exists "a natural range or variability in measured parameters defining the exposure scenario" and that the "the greatest quantitative impact is variation among the human population in such properties as height, weight, food consumption, breathing rates, and susceptibility to chemical toxicants."[81] As mentioned previously, it is typical to err on the side of health protection by assessing risk on the most sensitive populations, such as children and the elderly, by modeling potential impacts based on high-end breathing rates, by incorporating age sensitivity factors, and by not taking into account exposure reduction measures, such as mechanical air filtration building systems. Construction health risk assessment calculations are provided in Appendix A.

Dispersion Modeling

The analysis incorporates the estimated construction emissions, as previously discussed, and screening level dispersion modeling was performed using AERSCREEN. Emission sources were assumed to occur over the whole of the site using a large area source to represent the construction activity. Sensitive receptors are located as close as 30 feet from the construction activities, however using the screening analysis, the greatest concentration between 0 and 1,000 feet was used to determine risk. Although off-site workers may be in close proximity to the project site, their intermittent exposure duration would be less than that of a residence (8 hours compared to 24 hours) and adult breathing rates compared to children are lower as well. Therefore, worker impacts would be less than that of a residence.

Cancer Risk

Health risk impacts are assessed using a spreadsheet tool based on the HARP2 model developed by CARB, which was released March 2015.[82] The health risk calculation methodology is consistent with the 2015 OEHHA Guidance. For this risk assessment, the spreadsheet tool was

81 California Environmental Protection Agency, Office of Health Hazard Assessment, Air Toxics Hot Spots Program, Guidance Manual for Preparation of Health Risk Assessments, (2015) 1-5, Available: http://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0. Accessed March 2017.

82 California Air Resources Board, Hotspots Analysis Reporting Program, (2015). Available: https://www.arb.ca.gov/toxics/harp/eim2download.htm. Accessed March 2017.

used to analyze the results of the AERSCREEN dispersion model and convert the unitized pollutant concentrations into chemical-specific incremental cancer risks and non-cancer chronic and acute health impacts. While sensitive receptors may be located as close as 30 feet from the project site, risk was determined using the greatest unitized concentration from the AERSCREEN modeling despite the distance from the site. This represents a worst case risk scenario since the modeling does not take into account the specific location of nearby receptors. Health impacts address construction diesel particulate matter emissions and the effects on nearby sensitive uses. Additionally, while some nearby sensitive uses are not residential in nature, the use of a residential risk analysis provides a worst case risk scenario as risk for recreational areas such as playgrounds and parks would not result in daily exposure over a lifetime.

Health impacts are evaluated using a dose-response assessment, which describes the relationship between the level of exposure to a substance (i.e., the dose) and the incidence or occurrence of injury (i.e., the response).[83] In order to determine the total dose to offsite sensitive receptors, the applicable pathways of exposure should be identified. The applicable exposure pathways (e.g., inhalation, soil) are identified for the emitted substances, and the receptor locations are identified. The applicable exposure pathways determine the exposure algorithms that are used to estimate dose. After the exposure pathways are identified, the applicable fate and transport algorithms are used to estimate concentrations in the applicable exposure media (e.g., air) and the exposure algorithms are used to determine the substance-specific dose. In accordance with the OEHHA Guidance, the inhalation pathway was evaluated for construction related DPM. For the inhalation pathway, dose is directly proportional to the breathing rate.

Once dose is calculated, cancer risk is calculated by accounting for cancer potency of the specific pollutant, age sensitivity, exposure duration, averaging time for lifetime cancer risk, and fraction of time spent at home (sensitive receptor). The cancer potency factor (CPF) is specific for each pollutant and is determined through peer-reviewed scientific studies. The Scientific Review Panel recommends a CPF for DPM of 3.0×10^{-4} $(\mu g/m^3)^{-1}$ and a slope factor of 1.1 $(ppm\text{-}day)^{-1}$.[84] The ASFs account for greater susceptibility in early life as compared to adult exposure, starting from the third trimester of pregnancy to 18 years. The fraction of time at home (FAH) takes into account the time actually residing at the sensitive receptor location. FAH also takes into account time spent at home for various age groups. For example, newborns are expected to reside at home for longer periods of time compared to school age children, and the elderly (retirees) are expected to spend more time at home compared to people of working age. As indicated in the equation above, each age group has different exposure parameters which require cancer risk to be calculated separately for each age group.

The estimation of cancer risk uses the following algorithms:

Risk = Dose inhalation × Inhalation CPF × ASF (Equation 1)

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83 Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, (2015).

84 The Scientific Review Panel is charged with evaluating the risk assessments of substances proposed for identification as toxic air contaminants by CARB, OEHHA, and the Department of Pesticide Regulation (DPR), and the review of guidelines prepared by OEHHA.

Where: Dose inhalation = CAIR × DBR × A × EF × ED × FAH / AT (Equation 2)
Inhalation CPF = inhalation cancer potency factor
ASF = a ge sensitivity factor

Where:

CAIR = concentration of compound in air in micrograms per cubic meter (µg/m3)
DBR = breathing rate in liter per kilogram of body weight per day (L/kg-body weight/day)
A = inhalation absorption factor (1 for DPM)
EF = exposure frequency in days per year (day/year)
ED = exposure duration in years (year)
FAH = fraction of time at home
AT = averaging time period over which exposure is averaged in days (day)

The OEHHA recommended values for the parameters listed above were used in the HRA analysis. The daily breathing rate (DBR) used in the analysis was based on OEHHA recommendations which vary depending on age which are shown in **Table 4,** *OEHHA Recommended Residential Daily Breathing Rates, Fraction of Time at Home, and Age Sensitivity Factors for Residential Receptors*. The recommended exposure frequency (EF) is 350 days per year which is equivalent to 0.96 (350 days / 365 days a year). The inhalation absorption factor (A) is assumed to be 1 for inhalation-based risk assessment.

TABLE 4
OEHHA RECOMMENDED RESIDENTIAL DAILY BREATHING RATES, FRACTION OF TIME AT HOME, AND AGE SENSITIVITY FACTORS FOR RESIDENTIAL RECEPTORS

Age Bin	DBR	FAH	ASF	
3rd Trimester	361	0.85	10	
0 to 2 years	1090	0.85	10	
2 to 26 years	631	0.72	3	-
16 to 70 years	260	0.73	1	

SOURCE: OEHHA Air Toxics Hot Spots Program Guidance Manual. 2015.

As indicated in Equation 1 above, each age group has different exposure parameters which require cancer risk to be calculated separately for each age group. Values for fraction of time at home (FAH) and age sensitivity factors (ASF) are also presented in Table 4. Once dose is calculated, cancer risk is calculated by accounting for cancer potency of the specific pollutant, and the age sensitivity factor (ASF).

It should be noted that the FAH values presented above are used for evaluating long-term exposure. As discussed previously, OEHHA has developed methodology and Reference Exposure Levels (RELs) to evaluate acute and chronic exposure which would address non-cancer health impacts to elderly and the very young.

The incremental increase in cancer risk is the dose multiplied by the pollutant-specific CPF values. Cancer risk is calculated by multiplying the inhalation dose by the inhalation CPF to yield the potential inhalation excess cancer risk.

Non-Cancer Risk

DPM exposure does not result in a non-cancer acute impact, and therefore, construction activities were not evaluated for such.

Non-cancer chronic impacts were assessed based on the Hazard Index (HI). The evaluation of chronic impacts is based on the maximum annual emissions over a 12-months period of construction activity. The chronic Hazard Index is calculated by dividing the maximum modeled annual average concentration at the maximum impacted sensitive receptor by the Reference Exposure Level (REL). The REL is the concentration at or below which no adverse health effects are anticipated. For example, OEHHA has recommended an ambient concentration of 5 $\mu g/m^3$ as the chronic inhalation REL for DPM exhaust. Therefore, a sensitive receptor exposed to an annual average DPM concentration of 5 $\mu g/m^3$ or less would not result in a chronic impact. Non-cancer chronic impacts affect specific target organ systems (also called toxicological endpoints), such as the eye, nervous system, reproductive system, and respiratory system. The chronic health impact with the maximum Hazard Index for the same target organ system is used for impact determination. As a conservative assumption, the non-cancer health impact analyses do not take into account FAH.

4.2 Greenhouse Gas

The Climate Action Registry General Reporting Protocol provides procedures and guidelines for calculating and reporting GHG emissions from general and industry-specific activities. Although no numerical thresholds of significance have been adopted, and no specific protocols are available for land use projects, the General Reporting Protocol provides a framework for calculating and reporting GHG emissions from the project. The GHG emissions provided in this section is consistent with the General Reporting Protocol framework. This technical report provides an estimate of the GHG emissions from project construction. The following project-related emission sources have been evaluated:

1. Construction Activities – Fossil fueled on- and off-road vehicles and equipment needed for grading, building construction, paving, and architectural coating.

For purposes of this analysis, it is considered reasonable and consistent with criteria pollutant calculations to consider project construction activities such as demolition, hauling, and construction worker trips. Since potential impacts resulting from GHG emissions are long-term rather than acute, GHG emissions are calculated on an annual basis. CalEEMod outputs GHG emissions of CO_2, CH_4, N_2O, and CO_2e. In order to report total GHG emissions using the CO_2e

metric, the GWP ratios corresponding to the warming potential of CO_2 over a 100-year period is used in this analysis.

GHG emissions are estimated using the CalEEMod, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California.[85]

4.2.1 Construction Emissions

Construction of the proposed project has the potential to generate GHG emissions through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the project site. Construction emissions can vary from day to day, depending on the level of activity, the specific type of operation, and the prevailing weather conditions. The number and types of construction equipment, vendor trips (e.g., transport of building materials), and worker trips were based on relatively conservative assumptions for a project of this type and scale as provided in the CalEEMod model. A complete listing of the construction equipment by phase and construction phase duration assumptions used in this analysis is included within the CalEEMod printout sheets in Appendix B of this Technical Report.

The CO_2e emissions are calculated for the construction period and future project build-out conditions in order to estimate the net change in GHG emissions for project construction and operation. The SCAQMD guidance, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*, recognizes that construction-related GHG emissions from projects "occur over a relatively short-term period of time" and that "they contribute a relatively small portion of the overall lifetime project GHG emissions."[86] The guidance recommends that construction project GHG emissions should be "amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies."[87] In accordance with SCAQMD guidance, GHG emissions from construction have been amortized over the 30-year lifetime of the project (i.e., total construction GHG emissions were divided by 30 to determine an annual construction emissions estimate comparable to operational emissions).

[85] South Coast Air Quality Management District, California Emissions Estimator Model (CalEEMod), http://www.aqmd.gov/caleemod/.

[86] South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, 2008, page 3-9, http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf. Accessed July 2017.

[87] South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, 2008, page 3-9.

Construction of the project would result in one-time GHG emissions of CO_2 and smaller amounts of CH_4 from heavy-duty construction equipment. Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the off-road emissions factors. The output values used in this analysis are adjusted to be project-specific based on equipment types and the construction schedule. These values are applied to the construction phasing assumptions to generate GHG emissions values for each construction year.

Construction of the project would also contribute to regional GHG emissions from haul trucks and worker vehicles. Running GHG emissions were divided by the VMT of each respective vehicle class from each scenario year and adjusted for unit conversions to derive emission factors in units of grams per VMT. The emissions from mobile sources were calculated with the trip rates, trip lengths and emission factors for running from EMFAC2014 through CalEEMod.

4.2.2 Consistency with Applicable Plans and Policies

A consistency analysis will be provided which describes the extent the project complies with or exceeds performance-based standards included in the regulations outlined in the applicable portions of the Climate Change Scoping Plan Scoping Plan, RTP/SCS, Green Building Code, Executive Order S-3-05, and Executive Order B-30-15.

4.3 Energy

The evaluation of the project's potential impacts related to energy usage, including electricity, natural gas, and transportation fuel. Energy consumption during construction is assessed. The project's estimated energy consumption was calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1. Specific analysis methodologies are discussed below. Calculations are provided in Appendix A.

The project would be constructed in a single phase with overlapping development activities. Construction could commence as early as 2019, pending project approval and EIR certification, with completion of the project anticipated by 2021. Construction energy consumption would result primarily from transportation fuels (e.g., diesel and gasoline) used for haul trucks, heavy-duty construction equipment, and construction workers traveling to and from the Site.

Energy consumption associated the supply and conveyance of water used for dust control as well as electricity used for powering lighting, electronic equipment, and other construction activities is assumed to be negligible. Additionally, there is no consumption of natural gas associated with construction activities. Therefore, the analysis is limited to a discussion of transportation energy associated with construction activities.

Construction activities can vary substantially from day to day, depending on the specific type of construction activity and the number of workers and vendors traveling to the Site. This analysis considers these factors and provides the estimated maximum construction energy consumption for the purposes of evaluating the associated impacts on energy resources.

Energy use during construction is forecasted by assuming a conservative estimate of construction activities (i.e., maximum daily equipment usage levels). The energy usage required for project construction has been estimated based on the number and type of construction equipment that would be used during project construction, the extent that various equipment is utilized in terms of equipment operating hours or miles driven, and the estimated duration of construction activities. Energy for construction worker commuting trips has been estimated based on the predicted number of workers for the various phases of construction and the estimated GHG emissions.

The construction equipment would likely be diesel-fueled (with the exception of construction worker commute vehicles, which would primarily be gasoline-fueled). For the purposes of this assessment, it is conservatively assumed heavy-duty construction equipment and haul trucks would be diesel-fueled. This represents the maximum potential energy use during construction. The estimated fuel economy for heavy-duty construction equipment is based on fuel consumption factors from the CARB off-road vehicle (OFFROAD) emissions model, which is a state-approved model for estimating emissions from off-road heavy-duty equipment. The estimated fuel economy for haul trucks and worker commute vehicles is based on fuel consumption factors from the CARB EMFAC emissions model, which is a state-approved model for estimating emissions on-road vehicles and trucks. Both OFFROAD and EMFAC are incorporated into the California Emissions Estimator Model (CalEEMod), which is a state-approved emissions model used for the project's air quality and GHG emissions assessment. Therefore, this energy assessment is consistent with the modeling approach used for other environmental analyses in the EIR and consistent with general CEQA standards.

SECTION 5
Environmental Impacts & Mitigation

5.1 Air Quality

5.1.1 Conflict with or Obstruct the implementation of the Applicable Air Quality Plan (AIR-1)

Under this criterion, the SCAQMD recommends that lead agencies demonstrate that a project would not directly obstruct implementation of an applicable air quality plan and that a project be consistent with the assumptions (typically land-use related, such as resultant employment or residential units) upon which the air quality plan is based. The project would result in an increase in short-term employment compared to existing conditions. Although the project will require many workers over the construction process, these jobs are temporary in nature. Construction jobs under the project would not conflict with the long-term employment projections upon which the AQMP is based, specifically as the majority of construction workers are contracted and are not hired specifically for a single construction job.

Control strategies in the AQMP with potential applicability to short-term emissions from construction activities include strategies denoted in the AQMP as MOB-08 and MOB-10, which are intended to reduce emissions from on-road and off-road heavy-duty vehicles and equipment by accelerating replacement of older, emissions-prone engines with newer engines meeting more stringent emission standards. The project would utilize low-VOC coatings during construction activities to avoid excessive VOC emissions. Trucks and other vehicles in loading and unloading queues would be parked with engines off to reduce vehicle emissions during construction activities. Additionally, the project would comply with CARB requirements to minimize short-term emissions from on-road and off-road diesel equipment. The project would also comply with SCAQMD regulations for controlling fugitive dust pursuant to SCAQMD Rule 403.

Compliance with these requirements is consistent with and meets or exceeds the AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities. Because the project would not conflict with the control strategies intended to reduce emissions from construction equipment, the project would not conflict with or obstruct implementation of the AQMP, and impacts would be less than significant.

5.1.2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation (AIR-2)

The worst-case daily construction emissions were calculated to determine maximum daily construction emissions (pounds per day) for the project. Results of the criteria pollutant calculations are presented in **Table 5**, *Maximum Unmitigated Regional Construction Emissions*. As shown therein, construction-related daily emissions for the criteria and precursor pollutants (VOC, NO_X, CO, SO_X, PM10, and PM2.5) would be below SCAQMD significance thresholds. These calculations include appropriate dust control measures required to be implemented during each phase of development, as required by SCAQMD Rule 403 (Control of Fugitive Dust). Therefore, with respect to regional emissions from construction activities, impacts would be less than significant.

TABLE 5
MAXIMUM UNMITIGATED REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY)[a]

Source	VOC	NO_X	CO	SO_2	PM10[b]	PM2.5[b]
Onsite	4	42	27	<1	2	2
Offsite	<1	3	3	<1	1	<1
Maximum Daily Construction Emissions	**5**	**45**	**30**	**<1**	**3**	**2**
SCAQMD Significance Threshold	75	100	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

NOTES:
[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix A.
[b] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

SOURCE: ESA, 2018

5.1.3 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (AIR-3)

The project would result in the emissions of criteria pollutants for which the project area is in non-attainment during construction. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant. The Air Basin is currently in non-attainment under federal or state standards for ozone, PM10, and PM2.5. The emissions from construction of the project are not predicted to exceed any applicable SCAQMD regional or local impact threshold and therefore, are not expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Therefore, the project would not result in a cumulatively considerable net increase for non-attainment pollutants or ozone precursors and would result in a less than significant impact for construction emissions.

5.1.4 Expose sensitive receptors to substantial pollutant concentrations (AIR-4)

The localized construction air quality analysis was conducted using the methodology described in the SCAQMD Localized Significance Threshold Methodology (June 2003, revised July 2008).[88] The screening criteria provided in the Localized Significance Threshold Methodology were used to determine localized construction emissions thresholds for the project. As previously discussed, SCAQMD recommends the evaluation of localized air quality impacts to sensitive receptors in the immediate vicinity of the project. The thresholds are based on applicable short-term (24-hrs) CAAQS and NAAQS.

Using the Localized Significance Threshold Methodology, the results of the analysis determined localized project-related construction emissions would be below the SCAQMD thresholds of significance. Results of the pollutant calculations are presented in **Table 6**, *Unmitigated Localized Construction Emissions*. The emissions for increase in construction-related daily emissions for the criteria and precursor pollutants (NO_X, CO, PM10, and PM2.5) would be below the SCAQMD thresholds of significance. Therefore, project-related localized construction emissions would result in a less than significant impact.

TABLE 6
UNMITIGATED LOCALIZED CONSTRUCTION EMISSIONS ANALYSIS (POUNDS PER DAY)[a]

Source	NO_X	CO	PM10[b]	PM2.5[b]
Maximum Daily Construction Emissions	**42**	**27**	**2**	**2**
SCAQMD Significance Threshold	109	1,804	12	8
Exceeds Threshold?	No	No	No	No

NOTES:
[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix A.
[b] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

SOURCE: ESA, 2018

Toxic Air Contaminants

The project's health risk calculations were performed using a spreadsheet tool consistent with the OEHHA guidance, which incorporates the algorithms, equations, and a variable described above as well as in the OEHHA guidance, and incorporates the results of the AERSCREEN dispersion model.

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 75 in one million. The maximum impact would occur at approximately 328 feet (100 meters) from the

88 South Coast Air Quality Management District, Localized Significance Thresholds, (2003, revised 2008), http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds. Accessed March 2017.

project site. As discussed previously, 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. The unmitigated cancer risk exceeds the significance of 10 in one million and therefore represents a potentially significant impact.

Implementation of mitigation measure MM-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 MM-AQ-1, cancer risk from construction activities are reduced to approximately 8 in one million. This is below the 10 in one million threshold, and therefore, with implementation of mitigation, the project impacts would be less than significant.

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 0.08 before mitigation and would not exceed the threshold of 1.0. With implementation of Mitigation Measure MM-AQ-1, the chronic impact would be further reduced to 0.009.

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 below reduced to below significance thresholds with the implementation of MM-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 after the implementation of MM-AQ-1.

5.1.5 Create objectionable odors affecting a substantial number of people (AIR-5)

Construction-related odors would be temporary, and cease upon construction completion. The closest sensitive receptors (residential uses) to the project site are located adjacent to the south of the site. Construction in the immediate vicinity of the residences would also be of relatively short duration, and odors would be typical of construction and grading projects, and regulated by the ARB and SCAQMD. The prevailing winds in this area (typically offshore toward the east) would also help to minimize construction-related odors reaching the residential communities to the west and the south. Because the project construction would not cause objectionable odors affecting a substantial number of people and would be of relatively limited duration and offset, impacts are anticipated to be less than significant.

5.2 Greenhouse Gases

5.2.1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (GHG-1)

The following analysis evaluates potential impacts associated with construction of each of the project elements including emissions from the onsite equipment, worker, and vendor trips. **Table 7,** *Unmitigated Construction GHG Emissions,* presents the total estimated GHG emissions for the construction of the project in annual metric tons of carbon dioxide equivalents (MT CO_2e). GHG emissions are cumulative and typically the amortized emissions are added to the increase in operational emissions and compared to the regional threshold. In this case, there is no increase in operational activities so the only annual GHG emissions increase would be related to the construction emissions. As shown in Table 7, the amortized construction emissions are below the regulatory threshold of 3,000 MT CO_2e, and therefore, emissions would be less than significant.

TABLE 7
UNMITIGATED CONSTRUCTION GHG EMISSIONS (MT CO_2E)[a]

Source	MT CO_2e
Annual Construction Emissions	390
Total Construction Emissions (2-year construction period)	779
Amortized Construction Emissions[b]	26
Threshold	3,000
Exceeds Threshold?	No

NOTES:
[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix A.
[b] Emissions are amortized over an anticipated 30-year project lifetime.

SOURCE: ESA, 2018

5.2.2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases (GHG-2)

The significance of GHG emissions from the project is evaluated based on whether the project is consistent with the relevant statewide and regional mandates, plans, policies and regulations designed to reduce GHG emissions. The following analysis evaluates potential impacts associated with construction of the project elements over the approximate 2-year construction period.

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 and upgrades of existing facilities as well as the demolition of the onsite laboratory building. The proposed activities 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 program 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 applicable 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 program 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 long-term vehicle traffic within the City or the region as there are no changes to the existing employee base. There would be a temporary daily increase to the site associated with construction workers, however these workers would be traveling within the Region, regardless if the project was implemented as construction workers tend to be employed by a company and not hired specifically for one job. Therefore, the proposed project would not conflict with the implementation of SB 375. No mitigation is required.

As discussed above, the proposed project would be consistent with the CARB Scoping Plan and with SB 375. Therefore, the proposed program would have a less than significant impact related to applicable GHG plans and policies.

5.3 Energy

5.3.1 Conflict with adopted energy conservation plans (EN-1)

While there are no local or regional energy conservation plans that are directly applicable to the project, the 2017 Scoping Plan Update does include high-level objectives and goals intended to reduce energy demand, including energy efficiency and the Renewable Portfolio Standard. The project is not constructing new buildings but is upgrading existing operations, these upgrades will use newer, more efficient equipment. Additionally, the project site obtains electricity from SDG&E which currently generates 43 percent of its electricity through renewable sources, exceeding the requirements of the Renewable Portfolio Standards. Additionally, the Scoping Plan Updates include vehicle and fuel standards which would be incorporated into project construction through the use of locally sourced fuels and newer, more efficient onsite equipment.

Therefore, the project would be consistent with applicable plans for conserving energy and impacts would be less than significant.

5.3.2 Violate State or federal energy standards (EN-2)

The project would comply with applicable CARB regulations restricting the idling of heavy-duty diesel motor vehicles and governing the accelerated retrofitting, repowering, or replacement of heavy duty diesel on- and off-road equipment. As discussed previously, CARB has adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants. The measure prohibits diesel-fueled commercial vehicles greater than 10,000 pounds from idling for more than five minutes at any given time. While intended to reduce construction emissions, compliance with the above anti-idling and emissions regulations would also result in energy savings from the use of more fuel efficient engines. According to the CARB staff report that was prepared at the time the anti-idling Airborne Toxic Control Measure was being proposed for adoption in late 2004/early 2005, the regulation was estimated to reduce non-essential idling and associated emissions of diesel particulate matter and nitrogen oxide (NOx) emissions by 64 and 78 percent respectively in analysis year 2009.[89] These reductions in emissions are directly attributable to overall reduced idling times and the resultant reduced fuel consumption.

CARB has also adopted emission standards for off-road diesel construction equipment of greater than 25 hp. The emissions standards are referred to as “tiers,” with Tier 4 being the most stringent (i.e., least polluting). The requirements are phased in, with full implementation for large and medium fleets by 2023 and for small fleets by 2028. The project’s mitigation would accelerate the use of cleaner construction equipment by using mobile off-road construction equipment (wheeled or tracked) that meets, at a minimum, the Tier 4 interim off-road emissions standards as specified in Mitigation Measure MM-AQ-1. Field testing by construction equipment manufacturers has shown that higher tier equipment results in lower fuel consumption. For example, Tier 4 interim engines have shown a 5 percent reduced fuel consumption compared to a Tier 3 engine. Similar reductions in fuel consumption have been shown for Tier 3 engines compared to a Tier 2 engine.

Although the project is not developing any new buildings and is only upgrading existing operations, the project would comply with or exceed the applicable provisions of Title 24 and the CALGreen Code in affect at the time of project approval.

With respect to transportation-related fuel usage, the project would provide a temporary increase in local transportation from construction workers, but as discussed previously would not create new trips within the region due to the nature of construction work. The project would not increase operational commute trips, and therefore, would not result in a change to long-term transportation-related fuel usage. As detailed in Section 5.2.2, the project would be consistent with the 2016 RTP/SCS.

[89] CARB, Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, Appendix F, July 2004, https://www.arb.ca.gov/regact/idling/idling.htm, accessed February 2018.

5.3.3 Cause wasteful, inefficient, and unnecessary consumption of energy during construction (EN-3)

As discussed previously, construction of the project would result in negligible amounts of electrical consumption associated with the use of electrical construction equipment and the indirect use of electricity for any water used as dust suppressant throughout the construction activities. Additionally, as certain portions of the site are being renovated, electrical use to those sections would be temporarily suspended, and therefore, the electrical use by construction equipment would be at least partially offset by the reduction in onsite operational consumption. Therefore, the project would not result in wasteful, inefficient, or unnecessary consumption of electricity. Construction activities onsite would not require the use of natural gas, and therefore the project would not result in wasteful, inefficient, or unnecessary consumption of natural gas.

Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration (NTSA) is responsible for establishing additional vehicle standards and for revising existing standards. Compliance with Federal fuel economy standards is not determined for each individual vehicle model. Rather, compliance is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. **Table 8,** *Construction Related Fuel Consumption,* identifies the amount of diesel and gasoline that would be consumed during the construction activities. As shown, project-related off-road automotive fuel consumption during construction would be less than 0.001 percent of the state's diesel and gasoline consumption. The project's on-road automotive fuel consumption would be nominal compared to annual vehicle use in the County, and vehicles must adhere to California's stringent standards for fuel efficiency as mandated by AB 1493. The project would not result in any unusual characteristics that would result in excessive operational fuel consumption. As identified in mitigation measure MM-AQ-1, the project would use construction equipment that meets a minimum of Tier 4 interim off-road emissions standards, and therefore, would provide additional reductions to transportation energy consumption. Fuel consumption associated with project-related vehicle trips would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. This impact would be less than significant.

TABLE 8
CONSTRUCTION RELATED FUEL CONSUMPTION

Age Bin	State	Project	% of State
Diesel	3,400,000,000	16,841	0.0005
Gasoline	14,700,000,000	2,684	0.00002

SOURCE: ESA, 2018.

5.3.4 Result in an increase in demand for electricity or natural gas that exceeds available supply or distribution infrastructure capabilities that could result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (EN-4)

Transportation Energy Demand

As indicated in Table 8, project's overall annual fuel consumption associated with construction would be 16,841 gallons of diesel and 2,684 gallons of gasoline respectively, which would increase fuel use in the State by less than 0.001 percent. It is noted that construction fuel use is temporary and would cease upon completion of construction activities. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or State. Therefore, construction fuel consumption would be similar to projects of this nature and would not require the need for new facilities to be constructed. As such, a less than significant impact would occur in this regard.

Electrical Energy Demand

Construction of the project would result in negligible amounts of electrical consumption associated with the use of electrical construction equipment and the indirect use of electricity for any water used as dust suppressant throughout the construction activities. Additionally, as certain portions of the site are being renovated, electrical use to those sections would be temporarily suspended, and therefore, the electrical use by construction equipment would be at least partially offset by the reduction in onsite operational consumption. Therefore, the project would be less than significant with respect to increases in electrical demand.

Natural Gas Demand

Construction activities onsite would not require the use of natural gas, and therefore, the project would be less than significant with respect to increases in natural gas demand.

5.4 Mitigation Measures

5.4.1 Air Quality

The following mitigation measure will be implemented to reduce impacts to air quality from project related construction activities.

MM-AQ-1: Mobile off-road construction equipment (wheeled or tracked) used during construction of the project shall meet or exceed the USEPA Tier 4 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. The mitigation applies to off-road equipment and does not apply to on-road vehicles.

5.4.2 Greenhouse Gas

No mitigation is required.

5.4.3 Energy

No mitigation is required.

SECTION 6
Cumulative Impacts

6.1 Air Quality

The SCAQMD CEQA Air Quality Handbook states that the "Handbook is intended to provide local governments, project proponents, and consultants who prepare environmental documents with guidance for analyzing and mitigating air quality impacts of projects."[90] The SCAQMD CEQA Air Quality Handbook also states that "[f]rom an air quality perspective, the impact of a project is determined by examining the types and levels of emissions generated by the project and its impact on factors that affect air quality. As such, projects should be evaluated in terms of air pollution thresholds established by the District."[91] The SCAQMD has also provided guidance on an acceptable approach to addressing the cumulative impacts issue for air quality as discussed below:[92]

> *"As Lead Agency, the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR… Projects that exceed the Project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."*

Because the City has not adopted specific Citywide significance thresholds for air quality impacts, it is appropriate to rely on thresholds established by the SCAQMD (refer to CEQA Guidelines Section 15064.7). While it may be possible to add emissions from the list of related projects and the project, it would not provide meaningful data for evaluating cumulative impacts under CEQA because neither the City nor the SCAQMD have established numerical thresholds applicable to the summation of multiple project emissions for comparison purposes. Additionally, regional emissions from a project have the potential to affect the Air Basin as a whole, and unlike other environmental issues areas, it is not possible to establish a geographical radius from a specific project site where potential cumulative impacts from regional emissions would be limited. Meteorological factors, such as wind, can disperse pollutants, often times tens of miles downwind from a project site. Therefore, consistent with accepted and established SCAQMD

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90 South Coast Air Quality Management District, CEQA Air Quality Handbook, 1993, p. iii.

91 South Coast Air Quality Management District, CEQA Air Quality Handbook, 1993, p. 6-1.

92 South Coast Air Quality Management District, Cumulative Impacts White Paper, Appendix D, http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf?sfvrsn=4, accessed May 2017.

cumulative impact evaluation methodologies, the potential for the project to results in cumulative impacts from regional emissions is assessed based on the SCAQMD thresholds.

The project would result in emissions of criteria air pollutants for which the region is in non-attainment during construction. The Air Basin fails to meet the NAAQS for ozone and $PM_{2.5}$, and therefore is considered a federal “non-attainment” area for these pollutants. The Air Basin also does not meet the CAAQS for PM10. SCAQMD has designed significance thresholds to assist the region in attaining the applicable CAAQS and NAAQS, apply to both primary (criteria and precursor) and secondary pollutants (ozone). Although the project site is located in a region that is in non-attainment for ozone, PM10, and $PM_{2.5}$, the emissions associated with project construction would not be cumulatively considerable, as the emissions would fall below SCAQMD daily regional significance thresholds shown above in Table 5.

With respect to the project’s short-term construction-related air quality emissions and cumulative conditions, SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the AQMP pursuant to the federal CAA mandates. Construction of the project would comply with SCAQMD Rule 403 requirement, which focuses on reducing fugitive dust emissions and the ATCM to limit heavy duty diesel motor vehicle idling to no more than 5 minutes at any given time. In addition, the project would utilize a construction contractor(s) that complies with required and applicable BACT and the In-Use Off-Road Diesel Vehicle Regulation. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on construction projects in the Air Basin, which would include the cumulative projects in the project area. The related projects would be subject to these same requirements. Furthermore, consistent with SCAQMD guidance for cumulative impacts, regional and localized emissions would be less than SCAQMD significance thresholds as shown above in Table 5 and Table 6. As such, the project’s contribution to cumulatively significant construction impacts to air quality would not be cumulatively considerable and cumulative impacts would be less than significant for regional and localized criteria pollutants during construction.

6.2 Greenhouse Gas

It is generally the case that an individual project of this size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory.[93] GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective.[94] The State has implemented a vast array of regulations, policies and programs to reduce the State’s contribution to global GHG emissions. The project, would not exceed regulatory thresholds for the annual increase in GHG emissions.

93 California Air Pollution Control Officers Association, CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, 2008.

94 Ibid.

Similarly, all future development with the potential to generate GHG emissions would be required to demonstrate compliance with applicable federal and State regulatory requirements, including General Plan goals and policies of the affected jurisdiction, intended to reduce and/or avoid potential adverse environmental effects. As such, cumulative impacts to GHG emissions would be mitigated on a project-by-project level, and in accordance with the established regulatory framework, through the established regulatory review process.

Therefore, the project would not result in cumulatively considerable GHG impacts.

6.3 Energy

Electricity

The geographic context for the cumulative analysis of electricity is SDG&E's service area. Growth within this geography is anticipated to increase the demand for electricity and the need for infrastructure, such as new or expanded facilities. Buildout of the project would not result in an increase in electrical demand.

Construction of the project would result in negligible amounts of electrical consumption associated with the use of electrical construction equipment and the indirect use of electricity for any water used as dust suppressant throughout the construction activities. Additionally, as certain portions of the site are being renovated, electrical use to those sections would be temporarily suspended, and therefore, the electrical use by construction equipment would be at least partially offset by the reduction in onsite operational consumption. Accordingly, the impacts related to electricity consumption would not be cumulatively considerable, and thus would be less than significant.

Natural Gas

Construction activities onsite would not require the use of natural gas, and therefore, the project not result in a cumulatively considerable use of natural gas and would be less than significant.

Transportation Energy

Buildout of the project would result in a negligible increase in overall VMT. The energy impacts from the increase in transportation energy demand would be temporary for the 2-years of construction activities and would not be cumulatively considerable, and thus would be less than significant.

Appendix A

1 Assumptions
2 Air Quality
  a Regional and Local Daily Construction Emissions Summary
  b Health Risk
3 GHG Emissions Summary
4 Energy Calculations

Appendix A
1 Assumptions

SOCWA
Construction Assumptions

CalEEMod Inputs (Non-Default information only)

Project Location	
County	Orange County
Air District	South Coast
Climate Zone	11
Construction Year	2019
Operational Year	2021
Utility Provider	Southern California Edison

	Base	2015[1]	2020[1]
CO intensity	702.43634	531.7443	411.627695
% renewable	0%	24.30%	41.40%

http://www.cpuc.ca.gov/renewables/

Land Use	SF/ DU/ Seat/ Room /Spaces	KSF	Acres	CalEEMod Land Use Type
Industrial - Demo area	1,550	1.55	7	General Light Industrial

SOCWA
Construction Assumptions

Construction Schedule

	Max Daily Start	Months	Days
Building construction - 45	1/1/2019	2.0	45
Building Construction - 90	1/1/2019	4.1	90
Building Construction - 100	1/1/2019	4.5	100
Building Construction - 120	1/1/2019	5.5	120
Demolition - 180	1/1/2019	8.2	180
Building Construction - 200	1/1/2019	9.1	200
Building Construction - 220	1/1/2019	10.0	220

Consturcion will occur 5 days per week between 7 am and 8 pm, which will conservately result in up to an approximate 10 hour operational day for onsite equipment once lunch, breaks, daily meetings and maintenance are factored into the daily activities.

Project covers 18 projects with construction occurring over 24 months. Modeling assumes construction will occur in one phase over the 2 years. The equipment usage, number, hours per day and days per year of operation are identified below. Modeling assumes all equipment operates on site on one day for a worst case scenario. CalEEMod model diveds equipment by number of days per year of activity.

Additional Assumptions, Maximium of 10 trucks per day (including delivery and disposal) for a maximum of 180 trucks per year. 20 employees traveling to the site for a maximum of 220 days per year. VMT for trucks and workers is assumed to be 20 miles oneway.

Total Onsite Equipment

Equipment Type	#	Hrs/day	days/year	Hrs/yr	CalEEmod Designation
Excavator	1	8	45	360	Excavator
Dozer	1	8	45	360	Dozer
Backhoe	1	6	90	540	Tractor/Loader Backhoe
Sand Blaster	1	6	90	540	Air Compressor
Paver	1	6	90	540	Paver
Compactor	1	4	100	400	Plate Compactor
Concret/Industrial Saw	1	6	100	600	Concrete/Industrial Saw
Aerial Lift	1	6	120	720	Aerial Lift
Concrete/Mortar Mixer	1	6	180	1,080	Concrete/Motar Mixer
Air Compressor	1	6	200	1,200	Air Compressor
Welder	1	6	200	1,200	Welder
Crane	2	8	220	3,520	Crane
Forklift	2	6	220	2,640	Forklift

SOCWA
Construction Assumptions

<u>CalEEMod Modeling Notes:</u>

PM10 and PM2.5 Fugitive emissions report the "Mitigated" scenario because the "Mitigated" scenario represents emissions with the incorporation of SCAQMD Rule 403 which is a requirement of construction within SCAQMD Jurisdiction. Rule 403 assumes watering 3 times per day.

Appendix A

2a Air Quality Regional and Local Daily Construction Emissions Summary

SOCWA

Maximum Construction Emissions

CalEEMod 2016.3.2

Title: SOCWA - Construction Only — Date: 2/14/2018

Unmitigated Construction

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	lbs/day					
Total	***4.68***	***44.70***	***29.87***	***0.06***	***3.11***	***2.29***
Onsite	-	-	-	-	0.00	0.00
Onsite	4.30	41.50	26.80	0.05	2.16	2.03
Offsite	0.38	3.20	3.07	0.02	0.95	0.26
SCAQMD Thresholds	75	100	550	150	150	55
Significant	**No**	**No**	**No**	**No**	**No**	**No**

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	tons/year					
45	0.03	0.33	0.18	0.00	0.02	0.02
90	0.03	0.27	0.27	0.00	0.02	0.02
100	0.02	0.14	0.16	0.00	0.01	0.01
120	0.00	0.03	0.06	0.00	0.01	0.00
180	0.01	0.30	0.11	0.00	0.02	0.01
200	0.06	0.31	0.34	0.00	0.03	0.02
220	0.15	1.56	0.78	0.00	0.10	0.08
	0.31	**2.94**	**1.90**	**0.00**	**0.21**	**0.15**

LST Analysis

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Max		41.50	26.80		2.16	2.03
5		109	1,804		12	8
Significant		**No**	No		**No**	**No**

SRA	21	Capistrano Valley
Receptor Distance	30	feet
	25	meters
Site Size	5	construction site area
	5	LST Acre cc area used

SOCWA
Maximum Construction Emissions

Unmitigated Construction

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	lbs/day Winter					
total	4.68	44.70	29.71	0.06	3.11	2.29
Fugitive	-	-	-	-	0.00	0.00
onsite	4.30	41.50	26.80	0.05	2.16	2.03
offsite	0.38	3.20	2.92	0.01	0.95	0.26

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day Winter (by days of operation)					
45	total	1.46	14.80	7.98	0.02	0.87	0.70
	Fugitive	-	-	-	-	0.00	0.00
	onsite	1.40	14.76	7.55	0.01	0.72	0.66
	offsite	0.06	0.04	0.43	0.00	0.15	0.04
90	total	0.69	5.95	5.96	0.01	0.44	0.36
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.66	5.93	5.74	0.01	0.36	0.34
	offsite	0.03	0.02	0.22	0.00	0.08	0.02
100	total	0.40	2.84	3.10	0.01	0.25	0.20
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.37	2.82	2.88	0.00	0.18	0.18
	offsite	0.03	0.02	0.22	0.00	0.08	0.02
120	total	0.06	0.53	1.04	0.00	0.09	0.03
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.03	0.51	0.82	0.00	0.01	0.01
	offsite	0.03	0.02	0.22	0.00	0.08	0.02
180	total	0.16	3.30	1.20	0.01	0.28	0.09
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.04	0.28	0.23	0.00	0.01	0.01
	offsite	0.12	3.02	0.97	0.01	0.26	0.08
200	total	0.59	3.07	3.41	0.01	0.28	0.22
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.56	3.05	3.20	0.00	0.20	0.20
	offsite	0.03	0.02	0.22	0.00	0.08	0.02
220	total	1.34	14.22	7.03	0.02	0.90	0.68
	Fugitive	-	-	-	-	0.00	0.00
	onsite	1.25	14.16	6.38	0.01	0.68	0.62
	offsite	0.09	0.06	0.65	0.00	0.23	0.06

SOCWA
Maximum Construction Emissions

Mitigated Construction

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	lbs/day Winter					
total	1.50	20.47	32.89	0.06	1.14	0.45
Fugitive	-	-	-	-	0.00	0.00
onsite	1.12	17.27	29.97	0.05	0.19	0.19
offsite	0.38	3.20	2.92	0.01	0.95	0.26

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day Winter (by days of operation)					
45	total	0.26	4.56	8.88	0.02	0.18	0.06
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.20	4.52	8.45	0.01	0.02	0.02
	offsite	0.06	0.04	0.43	0.00	0.15	0.04
90	total	0.18	3.65	6.48	0.01	0.09	0.03
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.15	3.63	6.26	0.01	0.01	0.01
	offsite	0.03	0.02	0.22	0.00	0.08	0.02
100	total	0.14	1.82	3.22	0.01	0.09	0.03
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.11	1.80	3.00	0.00	0.01	0.01
	offsite	0.03	0.02	0.22	0.00	0.08	0.02
120	total	0.06	0.73	1.17	0.00	0.11	0.05
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.03	0.71	0.96	0.00	0.03	0.03
	offsite	0.03	0.02	0.22	0.00	0.08	0.02
180	total	0.16	3.30	1.20	0.01	0.28	0.09
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.04	0.28	0.23	0.00	0.01	0.01
	offsite	0.12	3.02	0.97	0.01	0.26	0.08
200	total	0.37	2.30	3.40	0.01	0.16	0.10
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.34	2.28	3.19	0.00	0.08	0.08
	offsite	0.03	0.02	0.22	0.00	0.08	0.02
220	total	0.33	4.11	8.54	0.02	0.25	0.08
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.24	4.06	7.89	0.01	0.02	0.02
	offsite	0.09	0.06	0.65	0.00	0.23	0.06

SOCWA

Maximum Construction Emissions

Mitigated Construction

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	lbs/day					
0 Total	***1.50***	***20.47***	***33.04***	***0.06***	***1.14***	***0.45***
Onsite	-	-	-	-	0.00	0.00
Onsite	1.12	17.27	29.97	0.05	0.19	0.19
Offsite	0.38	3.20	3.07	0.02	0.95	0.26
SCAQMD Thresholds	75	100	550	150	150	55
Significant	**No**	**No**	**No**	**No**	**No**	**No**

LST Analysis

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Max		17.27	29.97		0.19	0.19
5		109	1,804		12	8
Significant		**No**	No		**No**	**No**

SOCWA
Maximum Construction Emissions

Unmitigated Construction

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	lbs/day Summer					
total	4.64	44.65	29.87	0.06	3.11	2.29
Fugitive	-	-	-	-	0.00	0.00
onsite	4.30	41.50	26.80	0.05	2.16	2.03
offsite	0.34	3.14	3.07	0.02	0.95	0.26

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day Summer (by days of operation)					
45	total	1.45	14.79	8.02	0.02	0.87	0.70
	Fugitive	-	-	-	-	0.00	0.00
	onsite	1.40	14.76	7.55	0.01	0.72	0.66
	offsite	0.05	0.04	0.47	0.00	0.15	0.04
90	total	0.68	5.95	5.98	0.01	0.44	0.36
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.66	5.93	5.74	0.01	0.36	0.34
	offsite	0.03	0.02	0.24	0.00	0.08	0.02
100	total	0.39	2.84	3.12	0.01	0.25	0.20
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.37	2.82	2.88	0.00	0.18	0.18
	offsite	0.03	0.02	0.24	0.00	0.08	0.02
120	total	0.06	0.53	1.06	0.00	0.09	0.03
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.03	0.51	0.82	0.00	0.01	0.01
	offsite	0.03	0.02	0.24	0.00	0.08	0.02
180	total	0.15	3.26	1.18	0.01	0.28	0.09
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.04	0.28	0.23	0.00	0.01	0.01
	offsite	0.11	2.98	0.95	0.01	0.26	0.08
200	total	0.58	3.07	3.43	0.01	0.28	0.22
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.56	3.05	3.20	0.00	0.20	0.20
	offsite	0.03	0.02	0.24	0.00	0.08	0.02
220	total	1.33	14.21	7.08	0.02	0.90	0.68
	Fugitive	-	-	-	-	0.00	0.00
	onsite	1.25	14.16	6.38	0.01	0.68	0.62
	offsite	0.08	0.05	0.71	0.00	0.23	0.06

SOCWA

Maximum Construction Emissions

Mitigated Construction

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	lbs/day Summer					
total	1.46	20.41	33.04	0.06	1.14	0.45
Fugitive	-	-	-	-	0.00	0.00
onsite	1.12	17.27	29.97	0.05	0.19	0.19
offsite	0.34	3.14	3.07	0.02	0.95	0.26

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day Summer (by days of operation)					
45	total	0.26	4.56	8.92	0.02	0.18	0.06
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.20	4.52	8.45	0.01	0.02	0.02
	offsite	0.05	0.04	0.47	0.00	0.15	0.04
90	total	0.18	3.65	6.50	0.01	0.09	0.03
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.15	3.63	6.26	0.01	0.01	0.01
	offsite	0.03	0.02	0.24	0.00	0.08	0.02
100	total	0.13	1.82	3.23	0.01	0.09	0.03
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.11	1.80	3.00	0.00	0.01	0.01
	offsite	0.03	0.02	0.24	0.00	0.08	0.02
120	total	0.06	0.73	1.19	0.00	0.11	0.05
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.03	0.71	0.96	0.00	0.03	0.03
	offsite	0.03	0.02	0.24	0.00	0.08	0.02
180	total	0.15	3.26	1.18	0.01	0.28	0.09
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.04	0.28	0.23	0.00	0.01	0.01
	offsite	0.11	2.98	0.95	0.01	0.26	0.08
200	total	0.37	2.30	3.42	0.01	0.16	0.10
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.34	2.28	3.19	0.00	0.08	0.08
	offsite	0.03	0.02	0.24	0.00	0.08	0.02
220	total	0.32	4.11	8.59	0.02	0.25	0.08
	Fugitive	-	-	-	-	0.00	0.00
	onsite	0.24	4.06	7.89	0.01	0.02	0.02
	offsite	0.08	0.05	0.71	0.00	0.23	0.06

Appendix A

2b Air Quality Health Risk

SOCWA
AERSCREEN Input and Project Assumptions

	(lbs/day)	Hrs/day[1]	Emission Rate (g/s)		Const. (Years)
		Unmitigated			
Unmitigated	0.75385342	24	0.0038	3.80E-03	1.3
Mitigated	0.08076438	24	0.00041	4.10E-04	1.3

1 AERSCREEN does not take into account that construction activites only occur over a limited number of hours per day, therefore in order to accurately account for emissions over the full day (8/10 hours per day of activity and 14/16 hours per day of inactivity) the daily emissions are divided by 24 hours.

<u>AERSCREEN Input</u>

Source Type: Area

Release Height: 5 meters
Release height is the anticipated plume height times 0.5
Plume height is Vehicle height times 2

Maximum horizontal dimension:
Length of the longest side in meters

Demolition 192

Minimum horizontal dimension:
Length of the shortest side in meters

Demolition 123

Initial Vertical Dimension: 4.65 meters
Initial Vertical Dimension is the Plume Height divided by 2.15

Rural or Urban: Urban
Is the site a rural or urban environment

SOCWA
AERSCREEN Input and Project Assumptions

Urban Population: 3,010,759 Orange County (SCAQMD Guidance)
Population of the County

Minimum Distance to Ambient Air: 1 meter (AERSCREEN Default)

Maximum Distance to Probe: 1,000 meters
This is the maximum distance from source to analyze.

Use Descrete Receptors: No
not using discrete receptor distances assumes a minimum distance of 1 meter which is conservative for this analysis.

Use Flag Pole Receptors: Yes
This assumes that the receptors are above ground level

Flage Pole Receptor Height: 2 meters (average height of a human)

Source Elevation: 0 meters (AERSCREEN Default)

Minimum & Maximum Temperature: 250 to 310 K (AERSCREEN Default)

Minimum Windspeed: 0.5 m/s (AERSCREEN Default)

Anemometer Height: 10 meters (AERSCREEN Default)

Surface Characteristics: AERMET Defaults

Dominant Surface Profile: Urban

Dominant Climate: Average Moisture

AERSCREEN Output:

	Max hrly	Max Annual	Distance
	$\mu g/m^3$		meters
Unmitigated	4.044	4.04E-01	100
Mitigated	0.4363	4.36E-02	100

SOCWA
Unmitigated Screening Level Construction Health Risk

Project Risk Summary	Cancer Risk	Chronic Hazard Index
Construction Risk - 3rdto 2 yrs	74.50	8.09E-02
Construction Risk - 2 to 16	10.44	8.09E-02

*Refined mitigation using the concentration from each construction year.

Cancer Risk Computation - Construction

Resident Child 3rd trimester to birth years - Demolition

Dose = (Cair * DBR * EF * ED * C AERSCREEN does not take into account that construction activites

Cair	0.404	µg/m^3
DBR	361	L/kg
EF	0.95890411	years
ED	0.2	year
CF	0.000001	
AT	70	years

Dose	3.77E-07

Cancer Risk = (Dose * CRAF * Cancer Potency Factor)

Dose	3.77E-07	mg/kg-day
CF2	1.00E+06	
CPF	1.1	mg/kg-day-1
Cancer Risk	0.41	

CRAF	10.0
Time at home	0.85
Adjusted Cancer Risk	3.53

Resident Child birth to 2 years

Dose = (Cair * DBR * EF * ED * CF) / AT

Cair	0.404	µg/m^3
DBR	1090	L/kg
EF	0.95890411	years
ED	1.3	year
CF	0.000001	
AT	70	years

Dose	7.59E-06

Cancer Risk = (Dose * CRAF * Cancer Potency Factor)

Dose	7.59E-06	mg/kg-day
CF2	1.00E+06	
CPF	1.1	mg/kg-day-1
Cancer Risk	8.35	

CRAF	10.0
Time at home	0.85
Adjusted Cancer Risk	70.98

SOCWA
Unmitigated Screening Level Construction Health Risk

Resident Child 2 to 16 - (alternative)
Dose = (Cair * DBR * EF * ED * CF) / AT

Cair	0.404	µg/m^3
DBR	631	L/kg
EF	0.95890411	years
ED	1.3	year
CF	0.000001	
AT	70	years

Dose	4.39E-06

Cancer Risk = (Dose * CRAF * Cancer Potency Factor)

Dose	4.39E-06	mg/kg-day
CF2	1.00E+06	
CPF	1.1	mg/kg-day-1
Cancer Risk	4.83	

CRAF	3.0
Time at home	0.72
Adjusted Cancer Risk	10.44

Resident Adult - Not Used
Dose = (Cair * DBR * EF * ED * CF) / AT

Cair	0.404	µg/m^3	
DBR	261	L/kg	
EF	0.95890411	years	
ED	0.0	year	
CF	0.000001		
AT	70	2	meters (average height of a hum

Dose	0.00E+00

Cancer Risk = (Dose * CRAF * Cancer Potency Factor)

Dose	0.00E+00	mg/kg-day
CF2	1.00E+06	
CPF	1.1	mg/kg-day-1
Cancer Risk	0.00	

CRAF	1.0
Time at home	0.73
Adjusted Cancer Risk	0.00

SOCWA
Unmitigated Screening Level Construction Health Risk

Hazard Index Computation

Resident Adult and Child
Chronic hazard index
Inhalation chronic risk = Cair / Inhalation Chronic REL

Cair	0.404	µg/m^3
REL	5	µg/m^3
Chronic hazard index	0.0809	

SOCWA
Mitigated Screening Level Construction Health Risk

Project Risk Summary	Cancer Risk	Chronic Hazard Index
Construction Risk - 3rdto 2 yrs	8.04	8.73E-03
Construction Risk - 2 to 16	1.13	8.73E-03

*Refined mitigation using the concentration from each construction year.

Cancer Risk Computation - Construction

Resident Child 3rd trimester to birth years - Demolition

Dose = (Cair * DBR * EF * ED * CF) / AT

Cair	0.044	µg/m^3
DBR	361	L/kg
EF	0.95890411	years
ED	0.2	year
CF	0.000001	
AT	70	years

Dose	4.07E-08

Cancer Risk = (Dose * CRAF * Cancer Potency Factor)

Dose	4.07E-08	mg/kg-day
CF2	1.00E+06	
CPF	1.1	mg/kg-day-1
Cancer Risk	0.04	

CRAF	10.0
Time at home	0.85
Adjusted Cancer Risk	0.38

Resident Child birth to 2 years

Dose = (Cair * DBR * EF * ED * CF) / AT

Cair	0.044	µg/m^3
DBR	1090	L/kg
EF	0.95890411	years
ED	1.3	year
CF	0.000001	
AT	70	years

Dose	8.19E-07

Cancer Risk = (Dose * CRAF * Cancer Potency Factor)

Dose	8.19E-07	mg/kg-day
CF2	1.00E+06	
CPF	1.1	mg/kg-day-1
Cancer Risk	0.90	

CRAF	10.0
Time at home	0.85
Adjusted Cancer Risk	7.66

SOCWA

Mitigated Screening Level Construction Health Risk

Resident Child 2 to 16 - (alternative)

Dose = (Cair * DBR * EF * ED * CF) / AT

Cair	0.044	µg/m^3
DBR	631	L/kg
EF	0.95890411	years
ED	1.3	year
CF	0.000001	
AT	70	years

Dose	4.74E-07

Cancer Risk = (Dose * CRAF * Cancer Potency Factor)

Dose	4.74E-07	mg/kg-day
CF2	1.00E+06	
CPF	1.1	mg/kg-day-1
Cancer Risk	0.52	

CRAF	3.0
Time at home	0.72
Adjusted Cancer Risk	1.13

Resident Adult - Not Used

Dose = (Cair * DBR * EF * ED * CF) / AT

Cair	0.044	µg/m^3
DBR	261	L/kg
EF	0.95890411	years
ED	0.0	year
CF	0.000001	
AT	70	years

Dose	0.00E+00

Cancer Risk = (Dose * CRAF * Cancer Potency Factor)

Dose	0.00E+00	mg/kg-day
CF2	1.00E+06	
CPF	1.1	mg/kg-day-1
Cancer Risk	0.00	

CRAF	1.0
Time at home	0.73
Adjusted Cancer Risk	0.00

SOCWA
Mitigated Screening Level Construction Health Risk

Hazard Index Computation

Resident Adult and Child
Chronic hazard index
Inhalation chronic risk = Cair / Inhalation Chronic REL

Cair	0.044	$\mu g/m^3$
REL	5	$\mu g/m^3$
Chronic hazard index	0.0087	

```
AERSCREEN 16216 / AERMOD 16216r                                      02/16/18
                                                                     07:29:20

TITLE: SOCWA Construction HRA


----------------------------------------------------------------------------
******************************  AREA PARAMETERS  ***************************
----------------------------------------------------------------------------

SOURCE EMISSION RATE:         0.380E-02 g/s            0.302E-01 lb/hr

AREA EMISSION RATE:           0.161E-06 g/(s-m2)       0.128E-05 lb/(hr-m2)
AREA HEIGHT:                       5.00 meters             16.40 feet
AREA SOURCE LONG SIDE:           192.00 meters            629.92 feet
AREA SOURCE SHORT SIDE:          123.00 meters            403.54 feet
INITIAL VERTICAL DIMENSION:        4.65 meters             15.26 feet
RURAL OR URBAN:                   URBAN
POPULATION:                     3010759

FLAGPOLE RECEPTOR HEIGHT:          2.00 meters              6.56 feet

INITIAL PROBE DISTANCE =          1000. meters             3281. feet



----------------------------------------------------------------------------
***********************  BUILDING DOWNWASH PARAMETERS  *********************
----------------------------------------------------------------------------

               BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES



----------------------------------------------------------------------------
*************************  FLOW SECTOR ANALYSIS  ***************************
                 25 meter receptor spacing: 1. meters - 1000. meters
----------------------------------------------------------------------------


   MAXIMUM  IMPACT  RECEPTOR

   Zo        SURFACE   1-HR CONC  RADIAL  DIST   TEMPORAL
   SECTOR    ROUGHNESS  (ug/m3)    (deg)   (m)    PERIOD
  ----------------------------------------------------
      1*       1.000     4.044      15   100.0     WIN
* = worst case diagonal
```

```
----------------------------------------------------------------------------
*********************  MAKEMET METEOROLOGY PARAMETERS  ********************
----------------------------------------------------------------------------

MIN/MAX TEMPERATURE:    250.0 / 310.0 (K)

MINIMUM WIND SPEED:       0.5 m/s

ANEMOMETER HEIGHT:     10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE:    Average Moisture
DOMINANT SEASON:          Winter

ALBEDO:                  0.35
BOWEN RATIO:             1.50
ROUGHNESS LENGTH:       1.000 (meters)

SURFACE FRICTION VELOCITY (U*) NOT ADUSTED


       METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT
       -------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 10  10 01

    H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50

    HT  REF TA     HT
- - - - - - - - - - -
  10.0   310.0    2.0


----------------------------------------------------------------------------
********************** AERSCREEN AUTOMATED DISTANCES ********************
                  OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE
----------------------------------------------------------------------------
```

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
1.00	3.016	525.00	0.4063
25.00	3.353	550.00	0.3813
50.00	3.632	575.00	0.3590
75.00	3.885	600.00	0.3388
100.00	4.044	625.00	0.3205
125.00	3.189	650.00	0.3038
150.00	2.311	675.00	0.2887
175.00	1.817	700.00	0.2748
200.00	1.512	725.00	0.2619
225.00	1.288	750.00	0.2500
250.00	1.115	775.00	0.2391
275.00	0.9791	800.00	0.2290
300.00	0.8700	825.00	0.2196
325.00	0.7797	850.00	0.2108
350.00	0.7050	875.00	0.2027
375.00	0.6417	900.00	0.1951
400.00	0.5880	925.00	0.1880
425.00	0.5416	950.00	0.1813
450.00	0.5008	975.00	0.1750
475.00	0.4654	1000.00	0.1691
500.00	0.4340		

********************* AERSCREEN MAXIMUM IMPACT SUMMARY *********************

3-hour, 8-hour, and 24-hour scaled
concentrations are equal to the 1-hour concentration as referenced in
SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY
IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	4.044	4.044	4.044	4.044	N/A

DISTANCE FROM SOURCE 100.00 meters

IMPACT AT THE AMBIENT BOUNDARY	3.016	3.016	3.016	3.016	N/A

DISTANCE FROM SOURCE 1.00 meters

Appendix A

3 GHG Emissions Summary

SOCWA

GHG Emissions Calculations

CalEEMod 2016.3.2

Title: SOCWA - Construction Only Date: 2/15/2018

Construction Emissions

		CO_2e CalEEMod
45	Onsite	27.91
	Haul	0.00
	Vendor	0.00
	Worker	2.99
90	Onsite	35.37
	Haul	0.00
	Vendor	0.00
	Worker	2.99
100	Onsite	20.98
	Haul	0.00
	Vendor	0.00
	Worker	3.32
120	Onsite	6.84
	Haul	0.00
	Vendor	0.00
	Worker	3.99
180	Onsite	3.10
	Haul	70.17
	Vendor	0.00
	Worker	5.98
200	Onsite	39.76
	Haul	0.00
	Vendor	0.00
	Worker	6.64
220	Onsite	137.73
	Haul	0.00
	Vendor	0.00
	Worker	21.93
	Total Annual	390
	Total Construction	779
	Amortized Construction	26
	Threshold	3,000
	Exceed Threshold	No

Notes

Emissions are amortized over a 30 year project lifetime. Because there are no operational emissions associated with the project, the amortized emissions are compared to the regulatory threshold.

Operational Emissions

There are no new operational activities and therefore no new operational emissions.

Appendix A
4 Energy Calculations

SOCWA
Fuel Constumption Summary

Construction Fuel Consumption Summary

Phase	gallons Diesel	Gas	Years 2
Equipment Operating 45 days per year	2,750	336	
Equipment Operating 90 days per year	3,485	336	
Equipment Operating 100 days per year	2,067	373	
Equipment Operating 120 days per year	674	447	
Equipment Operating 180 days per year	7,219	671	
Equipment Operating 200 days per year	3,917	746	
Equipment Operating 220 days per year	13,570	2,461	
Total Project	***33,682***	***5,369***	
Average Annual	16,841	2,684	

Construction	Total Gallons	Annual	
Onsite Equipment	26,768	13,384	diesel
Haul Trucks	6,914	3,457	diesel
Vendor Trucks	0	0	diesel
Worker Trips	5,369	2,684	diesel

	State	Project	% of State
Diesel	3,400,000,000	16,840.92	0.0005%
Gasoline	14,700,000,000	2,684.47	0.00002%

Assumptions

10.15	diesel	KgCO2/gallon[2]
8.91	gasoline	KgCO2/gallon[2]
1	MT = 1,000 kilograms	
2204.623	lbs = 1 MT	

Construction	diesel	Used for trucks (haul and vendor) and off-road equipment
	gasoline	worker vehicles
	*Mitigated and unmitigated emissions will be the same as vehicle use does not change.	
Operation	diesel	Majority of trucks and buses
	gasoline	remaining vehicle mix

LCFS & Pavley assumed for on-road vehicles after year 2011

2 U.S. Energy Information Administration Voluntary Reportion of Greenhouse Gases Program, located here: http://www.eia.gov/oiaf/1605/coefficients.html

SOCWA
Fuel Conversion - Construction

	Total CO_2 MT/yr	Fuel Type	Factor $KGCO_2$/gal	Gallons	Total Diesel (gal)	Total Gas (gal)
Equipment Operating 45 days per year						
Off-road	27.91	diesel	10.15	2,750		
Haul	0.00	diesel	10.15	0		
Vendor	0.00	diesel	10.15	0		
Worker	2.99	gasoline	8.91	336	2,749.61	335.56
Equipment Operating 90 days per year						
Off-road	35.37	diesel	10.15	3,485		
Haul	0.00	diesel	10.15	0		
Vendor	0.00	diesel	10.15	0		
Worker	2.99	gasoline	8.91	336	3,484.70	335.56
Equipment Operating 100 days per year						
Off-road	20.98	diesel	10.15	2,067		
Haul	0.00	diesel	10.15	0		
Vendor	0.00	diesel	10.15	0		
Worker	3.32	gasoline	8.91	373	2,067.15	372.84
Equipment Operating 120 days per year						
Off-road	6.84	diesel	10.15	674		
Haul	0.00	diesel	10.15	0		
Vendor	0.00	diesel	10.15	0		
Worker	3.99	gasoline	8.91	447	673.88	447.41
Equipment Operating 180 days per year						
Off-road	3.10	diesel	10.15	306		
Haul	70.17	diesel	10.15	6,914		
Vendor	0.00	diesel	10.15	0		
Worker	5.98	gasoline	8.91	671	7,219.22	671.12
Equipment Operating 200 days per year						
Off-road	39.76	diesel	10.15	3,917		
Haul	0.00	diesel	10.15	0		
Vendor	0.00	diesel	10.15	0		
Worker	6.64	gasoline	8.91	746	3,917.44	745.69
Equipment Operating 220 days per year						
Off-road	137.73	diesel	10.15	13,570		
Haul	0.00	diesel	10.15	0		
Vendor	0.00	diesel	10.15	0		
Worker	21.93	gasoline	8.91	2,461	13,569.84	2,460.76

Appendix B

1 CalEEMod Winter Emissions Summary
2 CalEEMod Summer Emissions Summary
3 CalEEMod Annual Emissions Summary

Appendix B

1 CalEEMod Winter Emissions Summary

SOCWA - Construction Only

Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.55	1000sqft	7.00	1,550.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	411.63	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumpmtions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumptions

Demolition - See assumptions

Trips and VMT - See Assumptions

Vehicle Trips - No operational Emissions

Construction Off-road Equipment Mitigation - See Assumptions

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	150
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	230.00	45.00
tblConstructionPhase	NumDays	20.00	180.00
tblConstructionPhase	NumDays	230.00	90.00
tblConstructionPhase	NumDays	230.00	100.00
tblConstructionPhase	NumDays	230.00	120.00

tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	230.00	220.00
tblConstructionPhase	PhaseEndDate	1/27/2020	3/4/2019
tblConstructionPhase	PhaseEndDate	1/28/2019	9/9/2019
tblConstructionPhase	PhaseStartDate	3/12/2019	1/1/2019
tblLandUse	LotAcreage	0.04	7.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Pavers
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	411.63
tblTripsAndVMT	HaulingTripNumber	7.00	1,800.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00

tblTripsAndVMT	WorkerTripLength	14.70	20.00
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tblTripsAndVMT	WorkerTripNumber	1.00	5.00
tblTripsAndVMT	WorkerTripNumber	1.00	5.00
tblTripsAndVMT	WorkerTripNumber	1.00	15.00

2.0 Emissions Summary

Summary not used

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	180 day construction	Demolition	1/1/2019	9/9/2019	5	180	
2	45 day construction	Building Construction	1/1/2019	3/4/2019	5	45	
3	90 day construction	Building Construction	1/1/2019	5/6/2019	5	90	
4	100 day construction	Building Construction	1/1/2019	5/20/2019	5	100	
5	120 day construction	Building Construction	1/1/2019	6/17/2019	5	120	
6	200 day construction	Building Construction	1/1/2019	10/7/2019	5	200	
7	220 day construction	Building Construction	1/1/2019	11/4/2019	5	220	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
90 day construction	Cranes	0	7.00	231	0.29
180 day construction	Excavators	0	8.00	158	0.38
180 day construction	Concrete/Industrial Saws	0	6.00	81	0.73
100 day construction	Cranes	0	7.00	231	0.29
45 day construction	Cranes	0	7.00	231	0.29
45 day construction	Forklifts	0	8.00	89	0.20
45 day construction	Generator Sets	0	8.00	84	0.74
120 day construction	Cranes	0	7.00	231	0.29
200 day construction	Cranes	0	7.00	231	0.29
180 day construction	Rubber Tired Dozers	0	8.00	247	0.40
220 day construction	Cranes	2	8.00	231	0.29
45 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
90 day construction	Forklifts	0	8.00	89	0.20
100 day construction	Forklifts	0	8.00	89	0.20
120 day construction	Forklifts	0	8.00	89	0.20
200 day construction	Forklifts	0	8.00	89	0.20
220 day construction	Forklifts	2	6.00	89	0.20
45 day construction	Welders	0	8.00	46	0.45
90 day construction	Generator Sets	0	8.00	84	0.74
100 day construction	Generator Sets	0	8.00	84	0.74
120 day construction	Generator Sets	0	8.00	84	0.74
200 day construction	Generator Sets	0	8.00	84	0.74
220 day construction	Generator Sets	0	8.00	84	0.74
90 day construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
100 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
120 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
200 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
220 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
90 day construction	Welders	0	8.00	46	0.45

100 day construction	Welders	0	8.00	46	0.45
120 day construction	Welders	0	8.00	46	0.45
200 day construction	Welders	1	6.00	46	0.45
220 day construction	Welders	0	8.00	46	0.45
45 day construction	Excavators	1	8.00	158	0.38
45 day construction	Rubber Tired Dozers	1	8.00	247	0.40
90 day construction	Air Compressors	1	6.00	78	0.48
90 day construction	Pavers	1	6.00	130	0.42
100 day construction	Plate Compactors	1	4.00	8	0.43
100 day construction	Concrete/Industrial Saws	1	6.00	81	0.73
120 day construction	Aerial Lifts	1	6.00	63	0.31
200 day construction	Air Compressors	1	6.00	78	0.48
180 day construction	Cement and Mortar Mixers	1	6.00	9	0.56

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
90 day construction	3	5.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
45 day construction	2	10.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
180 day construction	1	5.00	0.00	1,800.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
100 day construction	2	5.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
120 day construction	1	5.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
200 day construction	2	5.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
220 day construction	4	15.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 180 day construction - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					8.4800e-003	0.0000	8.4800e-003	1.2800e-003	0.0000	1.2800e-003			0.0000			0.0000
Off-Road	0.0441	0.2761	0.2313	5.3000e-004		0.0108	0.0108		0.0108	0.0108		37.8872	37.8872	3.9300e-003		37.9856
Total	**0.0441**	**0.2761**	**0.2313**	**5.3000e-004**	**8.4800e-003**	**0.0108**	**0.0193**	**1.2800e-003**	**0.0108**	**0.0121**		**37.8872**	**37.8872**	**3.9300e-003**		**37.9856**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0853	3.0031	0.7523	7.6400e-003	0.1741	0.0116	0.1858	0.0477	0.0111	0.0588		849.7905	849.7905	0.0924		852.0995
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0298	0.0196	0.2163	7.2000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		72.0889	72.0889	1.7400e-003		72.1325
Total	**0.1151**	**3.0227**	**0.9686**	**8.3600e-003**	**0.2502**	**0.0121**	**0.2623**	**0.0678**	**0.0116**	**0.0794**		**921.8794**	**921.8794**	**0.0941**		**924.2320**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1400e-003	0.0000	3.1400e-003	4.8000e-004	0.0000	4.8000e-004			0.0000			0.0000
Off-Road	0.0441	0.2761	0.2313	5.3000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	37.8872	37.8872	3.9300e-003		37.9856
Total	**0.0441**	**0.2761**	**0.2313**	**5.3000e-004**	**3.1400e-003**	**0.0108**	**0.0139**	**4.8000e-004**	**0.0108**	**0.0113**	**0.0000**	**37.8872**	**37.8872**	**3.9300e-003**		**37.9856**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0853	3.0031	0.7523	7.6400e-003	0.1741	0.0116	0.1858	0.0477	0.0111	0.0588		849.7905	849.7905	0.0924		852.0995
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0298	0.0196	0.2163	7.2000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		72.0889	72.0889	1.7400e-003		72.1325
Total	**0.1151**	**3.0227**	**0.9686**	**8.3600e-003**	**0.2502**	**0.0121**	**0.2623**	**0.0678**	**0.0116**	**0.0794**		**921.8794**	**921.8794**	**0.0941**		**924.2320**

3.3 45 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	1.3953	14.7563	7.5473	0.0137		0.7181	0.7181		0.6606	0.6606		1,356.5541	1,356.5541	0.4292		1,367.2840
Total	**1.3953**	**14.7563**	**7.5473**	**0.0137**		**0.7181**	**0.7181**		**0.6606**	**0.6606**		**1,356.5541**	**1,356.5541**	**0.4292**		**1,367.2840**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0597	0.0393	0.4326	1.4500e-003	0.1520	9.9000e-004	0.1530	0.0403	9.2000e-004	0.0412		144.1778	144.1778	3.4900e-003		144.2650
Total	**0.0597**	**0.0393**	**0.4326**	**1.4500e-003**	**0.1520**	**9.9000e-004**	**0.1530**	**0.0403**	**9.2000e-004**	**0.0412**		**144.1778**	**144.1778**	**3.4900e-003**		**144.2650**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2029	4.5246	8.4486	0.0137		0.0224	0.0224		0.0224	0.0224	0.0000	1,356.5541	1,356.5541	0.4292		1,367.2840
Total	**0.2029**	**4.5246**	**8.4486**	**0.0137**		**0.0224**	**0.0224**		**0.0224**	**0.0224**	**0.0000**	**1,356.5541**	**1,356.5541**	**0.4292**		**1,367.2840**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0597	0.0393	0.4326	1.4500e-003	0.1520	9.9000e-004	0.1530	0.0403	9.2000e-004	0.0412		144.1778	144.1778	3.4900e-003		144.2650
Total	**0.0597**	**0.0393**	**0.4326**	**1.4500e-003**	**0.1520**	**9.9000e-004**	**0.1530**	**0.0403**	**9.2000e-004**	**0.0412**		**144.1778**	**144.1778**	**3.4900e-003**		**144.2650**

3.4 90 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6569	5.9319	5.7446	8.8300e-003		0.3606	0.3606		0.3420	0.3420		861.2281	861.2281	0.2072		866.4083
Total	**0.6569**	**5.9319**	**5.7446**	**8.8300e-003**		**0.3606**	**0.3606**		**0.3420**	**0.3420**		**861.2281**	**861.2281**	**0.2072**		**866.4083**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0298	0.0196	0.2163	7.2000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		72.0889	72.0889	1.7400e-003		72.1325
Total	**0.0298**	**0.0196**	**0.2163**	**7.2000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**72.0889**	**72.0889**	**1.7400e-003**		**72.1325**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1500	3.6286	6.2612	8.8300e-003		0.0135	0.0135		0.0135	0.0135	0.0000	861.2281	861.2281	0.2072		866.4083
Total	**0.1500**	**3.6286**	**6.2612**	**8.8300e-003**		**0.0135**	**0.0135**		**0.0135**	**0.0135**	**0.0000**	**861.2281**	**861.2281**	**0.2072**		**866.4083**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0298	0.0196	0.2163	7.2000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		72.0889	72.0889	1.7400e-003		72.1325
Total	**0.0298**	**0.0196**	**0.2163**	**7.2000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**72.0889**	**72.0889**	**1.7400e-003**		**72.1325**

3.5 100 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3666	2.8171	2.8819	4.9400e-003		0.1770	0.1770		0.1770	0.1770		461.7390	461.7390	0.0331		462.5659
Total	**0.3666**	**2.8171**	**2.8819**	**4.9400e-003**		**0.1770**	**0.1770**		**0.1770**	**0.1770**		**461.7390**	**461.7390**	**0.0331**		**462.5659**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0298	0.0196	0.2163	7.2000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		72.0889	72.0889	1.7400e-003		72.1325
Total	**0.0298**	**0.0196**	**0.2163**	**7.2000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**72.0889**	**72.0889**	**1.7400e-003**		**72.1325**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1061	1.7995	2.9992	4.9400e-003		0.0111	0.0111		0.0111	0.0111	0.0000	461.7390	461.7390	0.0331		462.5659
Total	**0.1061**	**1.7995**	**2.9992**	**4.9400e-003**		**0.0111**	**0.0111**		**0.0111**	**0.0111**	**0.0000**	**461.7390**	**461.7390**	**0.0331**		**462.5659**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0298	0.0196	0.2163	7.2000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		72.0889	72.0889	1.7400e-003		72.1325
Total	**0.0298**	**0.0196**	**0.2163**	**7.2000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**72.0889**	**72.0889**	**1.7400e-003**		**72.1325**

3.6 120 day construction - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	0.0305	0.5106	0.8196	1.2600e-003		0.0125	0.0125		0.0115	0.0115		124.6752	124.6752	0.0395		125.6614
Total	**0.0305**	**0.5106**	**0.8196**	**1.2600e-003**		**0.0125**	**0.0125**		**0.0115**	**0.0115**		**124.6752**	**124.6752**	**0.0395**		**125.6614**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0298	0.0196	0.2163	7.2000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		72.0889	72.0889	1.7400e-003		72.1325
Total	**0.0298**	**0.0196**	**0.2163**	**7.2000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**72.0889**	**72.0889**	**1.7400e-003**		**72.1325**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	0.0310	0.7079	0.9559	1.2600e-003		0.0289	0.0289		0.0289	0.0289	0.0000	124.6752	124.6752	0.0395		125.6614

Total	**0.0310**	**0.7079**	**0.9559**	**1.2600e-003**		**0.0289**	**0.0289**		**0.0289**	**0.0289**	**0.0000**	**124.6752**	**124.6752**	**0.0395**		**125.6614**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0298	0.0196	0.2163	7.2000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		72.0889	72.0889	1.7400e-003		72.1325
Total	**0.0298**	**0.0196**	**0.2163**	**7.2000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**72.0889**	**72.0889**	**1.7400e-003**		**72.1325**

3.7 200 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5553	3.0536	3.1967	4.8900e-003		0.2035	0.2035		0.2035	0.2035		437.0563	437.0563	0.0498		438.3010
Total	**0.5553**	**3.0536**	**3.1967**	**4.8900e-003**		**0.2035**	**0.2035**		**0.2035**	**0.2035**		**437.0563**	**437.0563**	**0.0498**		**438.3010**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0298	0.0196	0.2163	7.2000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		72.0889	72.0889	1.7400e-003		72.1325
Total	**0.0298**	**0.0196**	**0.2163**	**7.2000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**72.0889**	**72.0889**	**1.7400e-003**		**72.1325**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3434	2.2780	3.1878	4.8900e-003		0.0787	0.0787		0.0787	0.0787	0.0000	437.0563	437.0563	0.0498		438.3010
Total	**0.3434**	**2.2780**	**3.1878**	**4.8900e-003**		**0.0787**	**0.0787**		**0.0787**	**0.0787**	**0.0000**	**437.0563**	**437.0563**	**0.0498**		**438.3010**

Mitigated Construction Off-Site

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

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0298	0.0196	0.2163	7.2000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		72.0889	72.0889	1.7400e-003		72.1325
Total	**0.0298**	**0.0196**	**0.2163**	**7.2000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**72.0889**	**72.0889**	**1.7400e-003**		**72.1325**

3.8 220 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2480	14.1565	6.3774	0.0138		0.6752	0.6752		0.6212	0.6212		1,369.4018	1,369.4018	0.4333		1,380.2334
Total	**1.2480**	**14.1565**	**6.3774**	**0.0138**		**0.6752**	**0.6752**		**0.6212**	**0.6212**		**1,369.4018**	**1,369.4018**	**0.4333**		**1,380.2334**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0895	0.0589	0.6489	2.1700e-003	0.2281	1.4900e-003	0.2296	0.0605	1.3700e-003	0.0619		216.2668	216.2668	5.2300e-003		216.3974
Total	**0.0895**	**0.0589**	**0.6489**	**2.1700e-003**	**0.2281**	**1.4900e-003**	**0.2296**	**0.0605**	**1.3700e-003**	**0.0619**		**216.2668**	**216.2668**	**5.2300e-003**		**216.3974**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2408	4.0560	7.8862	0.0138		0.0227	0.0227		0.0227	0.0227	0.0000	1,369.4018	1,369.4018	0.4333		1,380.2334
Total	**0.2408**	**4.0560**	**7.8862**	**0.0138**		**0.0227**	**0.0227**		**0.0227**	**0.0227**	**0.0000**	**1,369.4018**	**1,369.4018**	**0.4333**		**1,380.2334**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0895	0.0589	0.6489	2.1700e-003	0.2281	1.4900e-003	0.2296	0.0605	1.3700e-003	0.0619		216.2668	216.2668	5.2300e-003		216.3974
Total	**0.0895**	**0.0589**	**0.6489**	**2.1700e-003**	**0.2281**	**1.4900e-003**	**0.2296**	**0.0605**	**1.3700e-003**	**0.0619**		**216.2668**	**216.2668**	**5.2300e-003**		**216.3974**

4.0 Operational Detail - Mobile

No Operational Emissions

Appendix B

2 CalEEMod Summer Emissions Summary

SOCWA - Construction Only
Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.55	1000sqft	7.00	1,550.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	411.63	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumpmtions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumptions

Demolition - See assumptions

Trips and VMT - See Assumptions

Vehicle Trips - No operational Emissions

Construction Off-road Equipment Mitigation - See Assumptions

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	150
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	230.00	45.00
tblConstructionPhase	NumDays	20.00	180.00
tblConstructionPhase	NumDays	230.00	90.00
tblConstructionPhase	NumDays	230.00	100.00
tblConstructionPhase	NumDays	230.00	120.00

tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	230.00	220.00
tblConstructionPhase	PhaseEndDate	1/27/2020	3/4/2019
tblConstructionPhase	PhaseEndDate	1/28/2019	9/9/2019
tblConstructionPhase	PhaseStartDate	3/12/2019	1/1/2019
tblLandUse	LotAcreage	0.04	7.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Pavers
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	411.63
tblTripsAndVMT	HaulingTripNumber	7.00	1,800.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00

tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripNumber	1.00	10.00
tblTripsAndVMT	WorkerTripNumber	3.00	5.00
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tblTripsAndVMT	WorkerTripNumber	1.00	5.00
tblTripsAndVMT	WorkerTripNumber	1.00	5.00
tblTripsAndVMT	WorkerTripNumber	1.00	5.00
tblTripsAndVMT	WorkerTripNumber	1.00	15.00

2.0 Emissions Summary

Summary not used

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	180 day construction	Demolition	1/1/2019	9/9/2019	5	180	
2	45 day construction	Building Construction	1/1/2019	3/4/2019	5	45	
3	90 day construction	Building Construction	1/1/2019	5/6/2019	5	90	
4	100 day construction	Building Construction	1/1/2019	5/20/2019	5	100	
5	120 day construction	Building Construction	1/1/2019	6/17/2019	5	120	
6	200 day construction	Building Construction	1/1/2019	10/7/2019	5	200	
7	220 day construction	Building Construction	1/1/2019	11/4/2019	5	220	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
90 day construction	Cranes	0	7.00	231	0.29
180 day construction	Excavators	0	8.00	158	0.38
180 day construction	Concrete/Industrial Saws	0	6.00	81	0.73
100 day construction	Cranes	0	7.00	231	0.29
45 day construction	Cranes	0	7.00	231	0.29
45 day construction	Forklifts	0	8.00	89	0.20
45 day construction	Generator Sets	0	8.00	84	0.74
120 day construction	Cranes	0	7.00	231	0.29
200 day construction	Cranes	0	7.00	231	0.29
180 day construction	Rubber Tired Dozers	0	8.00	247	0.40
220 day construction	Cranes	2	8.00	231	0.29
45 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
90 day construction	Forklifts	0	8.00	89	0.20
100 day construction	Forklifts	0	8.00	89	0.20
120 day construction	Forklifts	0	8.00	89	0.20
200 day construction	Forklifts	0	8.00	89	0.20
220 day construction	Forklifts	2	6.00	89	0.20
45 day construction	Welders	0	8.00	46	0.45
90 day construction	Generator Sets	0	8.00	84	0.74
100 day construction	Generator Sets	0	8.00	84	0.74
120 day construction	Generator Sets	0	8.00	84	0.74
200 day construction	Generator Sets	0	8.00	84	0.74
220 day construction	Generator Sets	0	8.00	84	0.74
90 day construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
100 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
120 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
200 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
220 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
90 day construction	Welders	0	8.00	46	0.45

100 day construction	Welders	0	8.00	46	0.45
120 day construction	Welders	0	8.00	46	0.45
200 day construction	Welders	1	6.00	46	0.45
220 day construction	Welders	0	8.00	46	0.45
45 day construction	Excavators	1	8.00	158	0.38
45 day construction	Rubber Tired Dozers	1	8.00	247	0.40
90 day construction	Air Compressors	1	6.00	78	0.48
90 day construction	Pavers	1	6.00	130	0.42
100 day construction	Plate Compactors	1	4.00	8	0.43
100 day construction	Concrete/Industrial Saws	1	6.00	81	0.73
120 day construction	Aerial Lifts	1	6.00	63	0.31
200 day construction	Air Compressors	1	6.00	78	0.48
180 day construction	Cement and Mortar Mixers	1	6.00	9	0.56

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
90 day construction	3	5.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
45 day construction	2	10.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
180 day construction	1	5.00	0.00	1,800.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
100 day construction	2	5.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
120 day construction	1	5.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
200 day construction	2	5.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
220 day construction	4	15.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 180 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4800e-003	0.0000	8.4800e-003	1.2800e-003	0.0000	1.2800e-003			0.0000			0.0000
Off-Road	0.0441	0.2761	0.2313	5.3000e-004		0.0108	0.0108		0.0108	0.0108		37.8872	37.8872	3.9300e-003		37.9856
Total	**0.0441**	**0.2761**	**0.2313**	**5.3000e-004**	**8.4800e-003**	**0.0108**	**0.0193**	**1.2800e-003**	**0.0108**	**0.0121**		**37.8872**	**37.8872**	**3.9300e-003**		**37.9856**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0831	2.9642	0.7106	7.7600e-003	0.1741	0.0114	0.1855	0.0477	0.0109	0.0586		862.5726	862.5726	0.0901		864.8238
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0262	0.0179	0.2356	7.6000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		76.1881	76.1881	1.8400e-003		76.2343
Total	**0.1093**	**2.9820**	**0.9462**	**8.5200e-003**	**0.2502**	**0.0119**	**0.2620**	**0.0678**	**0.0114**	**0.0792**		**938.7608**	**938.7608**	**0.0919**		**941.0580**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1400e-003	0.0000	3.1400e-003	4.8000e-004	0.0000	4.8000e-004			0.0000			0.0000
Off-Road	0.0441	0.2761	0.2313	5.3000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	37.8872	37.8872	3.9300e-003		37.9856
Total	**0.0441**	**0.2761**	**0.2313**	**5.3000e-004**	**3.1400e-003**	**0.0108**	**0.0139**	**4.8000e-004**	**0.0108**	**0.0113**	**0.0000**	**37.8872**	**37.8872**	**3.9300e-003**		**37.9856**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0831	2.9642	0.7106	7.7600e-003	0.1741	0.0114	0.1855	0.0477	0.0109	0.0586		862.5726	862.5726	0.0901		864.8238
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0262	0.0179	0.2356	7.6000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		76.1881	76.1881	1.8400e-003		76.2343
Total	**0.1093**	**2.9820**	**0.9462**	**8.5200e-003**	**0.2502**	**0.0119**	**0.2620**	**0.0678**	**0.0114**	**0.0792**		**938.7608**	**938.7608**	**0.0919**		**941.0580**

3.3 45 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	1.3953	14.7563	7.5473	0.0137		0.7181	0.7181		0.6606	0.6606		1,356.5541	1,356.5541	0.4292		1,367.2840
Total	**1.3953**	**14.7563**	**7.5473**	**0.0137**		**0.7181**	**0.7181**		**0.6606**	**0.6606**		**1,356.5541**	**1,356.5541**	**0.4292**		**1,367.2840**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0523	0.0357	0.4711	1.5300e-003	0.1520	9.9000e-004	0.1530	0.0403	9.2000e-004	0.0412		152.3763	152.3763	3.6900e-003		152.4685
Total	**0.0523**	**0.0357**	**0.4711**	**1.5300e-003**	**0.1520**	**9.9000e-004**	**0.1530**	**0.0403**	**9.2000e-004**	**0.0412**		**152.3763**	**152.3763**	**3.6900e-003**		**152.4685**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2029	4.5246	8.4486	0.0137		0.0224	0.0224		0.0224	0.0224	0.0000	1,356.5541	1,356.5541	0.4292		1,367.2840
Total	**0.2029**	**4.5246**	**8.4486**	**0.0137**		**0.0224**	**0.0224**		**0.0224**	**0.0224**	**0.0000**	**1,356.5541**	**1,356.5541**	**0.4292**		**1,367.2840**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0523	0.0357	0.4711	1.5300e-003	0.1520	9.9000e-004	0.1530	0.0403	9.2000e-004	0.0412		152.3763	152.3763	3.6900e-003		152.4685
Total	**0.0523**	**0.0357**	**0.4711**	**1.5300e-003**	**0.1520**	**9.9000e-004**	**0.1530**	**0.0403**	**9.2000e-004**	**0.0412**		**152.3763**	**152.3763**	**3.6900e-003**		**152.4685**

3.4 90 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6569	5.9319	5.7446	8.8300e-003		0.3606	0.3606		0.3420	0.3420		861.2281	861.2281	0.2072		866.4083
Total	**0.6569**	**5.9319**	**5.7446**	**8.8300e-003**		**0.3606**	**0.3606**		**0.3420**	**0.3420**		**861.2281**	**861.2281**	**0.2072**		**866.4083**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0262	0.0179	0.2356	7.6000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		76.1881	76.1881	1.8400e-003		76.2343
Total	**0.0262**	**0.0179**	**0.2356**	**7.6000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**76.1881**	**76.1881**	**1.8400e-003**		**76.2343**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	0.1500	3.6286	6.2612	8.8300e-003		0.0135	0.0135		0.0135	0.0135	0.0000	861.2281	861.2281	0.2072		866.4083
Total	**0.1500**	**3.6286**	**6.2612**	**8.8300e-003**		**0.0135**	**0.0135**		**0.0135**	**0.0135**	**0.0000**	**861.2281**	**861.2281**	**0.2072**		**866.4083**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0262	0.0179	0.2356	7.6000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		76.1881	76.1881	1.8400e-003		76.2343
Total	**0.0262**	**0.0179**	**0.2356**	**7.6000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**76.1881**	**76.1881**	**1.8400e-003**		**76.2343**

3.5 100 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3666	2.8171	2.8819	4.9400e-003		0.1770	0.1770		0.1770	0.1770		461.7390	461.7390	0.0331		462.5659
Total	**0.3666**	**2.8171**	**2.8819**	**4.9400e-003**		**0.1770**	**0.1770**		**0.1770**	**0.1770**		**461.7390**	**461.7390**	**0.0331**		**462.5659**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0262	0.0179	0.2356	7.6000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		76.1881	76.1881	1.8400e-003		76.2343
Total	**0.0262**	**0.0179**	**0.2356**	**7.6000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**76.1881**	**76.1881**	**1.8400e-003**		**76.2343**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1061	1.7995	2.9992	4.9400e-003		0.0111	0.0111		0.0111	0.0111	0.0000	461.7390	461.7390	0.0331		462.5659
Total	**0.1061**	**1.7995**	**2.9992**	**4.9400e-003**		**0.0111**	**0.0111**		**0.0111**	**0.0111**	**0.0000**	**461.7390**	**461.7390**	**0.0331**		**462.5659**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0262	0.0179	0.2356	7.6000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		76.1881	76.1881	1.8400e-003		76.2343
Total	**0.0262**	**0.0179**	**0.2356**	**7.6000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**76.1881**	**76.1881**	**1.8400e-003**		**76.2343**

3.6 120 day construction - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	0.0305	0.5106	0.8196	1.2600e-003		0.0125	0.0125		0.0115	0.0115		124.6752	124.6752	0.0395		125.6614
Total	**0.0305**	**0.5106**	**0.8196**	**1.2600e-003**		**0.0125**	**0.0125**		**0.0115**	**0.0115**		**124.6752**	**124.6752**	**0.0395**		**125.6614**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0262	0.0179	0.2356	7.6000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		76.1881	76.1881	1.8400e-003		76.2343
Total	**0.0262**	**0.0179**	**0.2356**	**7.6000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**76.1881**	**76.1881**	**1.8400e-003**		**76.2343**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	0.0310	0.7079	0.9559	1.2600e-003		0.0289	0.0289		0.0289	0.0289	0.0000	124.6752	124.6752	0.0395		125.6614

Total	**0.0310**	**0.7079**	**0.9559**	**1.2600e-003**		**0.0289**	**0.0289**		**0.0289**	**0.0289**	**0.0000**	**124.6752**	**124.6752**	**0.0395**		**125.6614**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0262	0.0179	0.2356	7.6000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		76.1881	76.1881	1.8400e-003		76.2343
Total	**0.0262**	**0.0179**	**0.2356**	**7.6000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**76.1881**	**76.1881**	**1.8400e-003**		**76.2343**

3.7 200 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5553	3.0536	3.1967	4.8900e-003		0.2035	0.2035		0.2035	0.2035		437.0563	437.0563	0.0498		438.3010
Total	**0.5553**	**3.0536**	**3.1967**	**4.8900e-003**		**0.2035**	**0.2035**		**0.2035**	**0.2035**		**437.0563**	**437.0563**	**0.0498**		**438.3010**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0262	0.0179	0.2356	7.6000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		76.1881	76.1881	1.8400e-003		76.2343
Total	**0.0262**	**0.0179**	**0.2356**	**7.6000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**76.1881**	**76.1881**	**1.8400e-003**		**76.2343**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	0.3434	2.2780	3.1878	4.8900e-003		0.0787	0.0787		0.0787	0.0787	0.0000	437.0563	437.0563	0.0498		438.3010
Total	**0.3434**	**2.2780**	**3.1878**	**4.8900e-003**		**0.0787**	**0.0787**		**0.0787**	**0.0787**	**0.0000**	**437.0563**	**437.0563**	**0.0498**		**438.3010**

Mitigated Construction Off-Site

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

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0262	0.0179	0.2356	7.6000e-004	0.0760	5.0000e-004	0.0765	0.0202	4.6000e-004	0.0206		76.1881	76.1881	1.8400e-003		76.2343
Total	**0.0262**	**0.0179**	**0.2356**	**7.6000e-004**	**0.0760**	**5.0000e-004**	**0.0765**	**0.0202**	**4.6000e-004**	**0.0206**		**76.1881**	**76.1881**	**1.8400e-003**		**76.2343**

3.8 220 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2480	14.1565	6.3774	0.0138		0.6752	0.6752		0.6212	0.6212		1,369.4018	1,369.4018	0.4333		1,380.2334
Total	**1.2480**	**14.1565**	**6.3774**	**0.0138**		**0.6752**	**0.6752**		**0.6212**	**0.6212**		**1,369.4018**	**1,369.4018**	**0.4333**		**1,380.2334**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0785	0.0536	0.7067	2.2900e-003	0.2281	1.4900e-003	0.2296	0.0605	1.3700e-003	0.0619		228.5644	228.5644	5.5300e-003		228.7027
Total	**0.0785**	**0.0536**	**0.7067**	**2.2900e-003**	**0.2281**	**1.4900e-003**	**0.2296**	**0.0605**	**1.3700e-003**	**0.0619**		**228.5644**	**228.5644**	**5.5300e-003**		**228.7027**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2408	4.0560	7.8862	0.0138		0.0227	0.0227		0.0227	0.0227	0.0000	1,369.4018	1,369.4018	0.4333		1,380.2334
Total	**0.2408**	**4.0560**	**7.8862**	**0.0138**		**0.0227**	**0.0227**		**0.0227**	**0.0227**	**0.0000**	**1,369.4018**	**1,369.4018**	**0.4333**		**1,380.2334**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0785	0.0536	0.7067	2.2900e-003	0.2281	1.4900e-003	0.2296	0.0605	1.3700e-003	0.0619		228.5644	228.5644	5.5300e-003		228.7027
Total	**0.0785**	**0.0536**	**0.7067**	**2.2900e-003**	**0.2281**	**1.4900e-003**	**0.2296**	**0.0605**	**1.3700e-003**	**0.0619**		**228.5644**	**228.5644**	**5.5300e-003**		**228.7027**

4.0 Operational Detail - Mobile

No Operational Emissions

Appendix B

3 CalEEMod Annual Emissions Summary

SOCWA - Construction Only
Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.55	1000sqft	7.00	1,550.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	411.63	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumpmtions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumptions

Off-road Equipment - See Assumptions

Demolition - See assumptions

Trips and VMT - See Assumptions

Vehicle Trips - No operational Emissions

Construction Off-road Equipment Mitigation - See Assumptions

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	150
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	230.00	45.00
tblConstructionPhase	NumDays	20.00	180.00
tblConstructionPhase	NumDays	230.00	90.00
tblConstructionPhase	NumDays	230.00	100.00
tblConstructionPhase	NumDays	230.00	120.00

tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	230.00	220.00
tblConstructionPhase	PhaseEndDate	1/27/2020	3/4/2019
tblConstructionPhase	PhaseEndDate	1/28/2019	9/9/2019
tblConstructionPhase	PhaseStartDate	3/12/2019	1/1/2019
tblLandUse	LotAcreage	0.04	7.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Pavers
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	411.63
tblTripsAndVMT	HaulingTripNumber	7.00	1,800.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripLength	14.70	20.00

tblTripsAndVMT	WorkerTripLength	14.70	20.00
tblTripsAndVMT	WorkerTripNumber	1.00	10.00
tblTripsAndVMT	WorkerTripNumber	3.00	5.00
tblTripsAndVMT	WorkerTripNumber	1.00	5.00
tblTripsAndVMT	WorkerTripNumber	1.00	5.00
tblTripsAndVMT	WorkerTripNumber	1.00	5.00
tblTripsAndVMT	WorkerTripNumber	1.00	5.00
tblTripsAndVMT	WorkerTripNumber	1.00	15.00

2.0 Emissions Summary

Summary not used

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	180 day construction	Demolition	1/1/2019	9/9/2019	5	180	
2	45 day construction	Building Construction	1/1/2019	3/4/2019	5	45	
3	90 day construction	Building Construction	1/1/2019	5/6/2019	5	90	
4	100 day construction	Building Construction	1/1/2019	5/20/2019	5	100	
5	120 day construction	Building Construction	1/1/2019	6/17/2019	5	120	
6	200 day construction	Building Construction	1/1/2019	10/7/2019	5	200	
7	220 day construction	Building Construction	1/1/2019	11/4/2019	5	220	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
90 day construction	Cranes	0	7.00	231	0.29
180 day construction	Excavators	0	8.00	158	0.38
180 day construction	Concrete/Industrial Saws	0	6.00	81	0.73
100 day construction	Cranes	0	7.00	231	0.29
45 day construction	Cranes	0	7.00	231	0.29
45 day construction	Forklifts	0	8.00	89	0.20
45 day construction	Generator Sets	0	8.00	84	0.74
120 day construction	Cranes	0	7.00	231	0.29
200 day construction	Cranes	0	7.00	231	0.29
180 day construction	Rubber Tired Dozers	0	8.00	247	0.40
220 day construction	Cranes	2	8.00	231	0.29
45 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
90 day construction	Forklifts	0	8.00	89	0.20
100 day construction	Forklifts	0	8.00	89	0.20
120 day construction	Forklifts	0	8.00	89	0.20
200 day construction	Forklifts	0	8.00	89	0.20
220 day construction	Forklifts	2	6.00	89	0.20
45 day construction	Welders	0	8.00	46	0.45
90 day construction	Generator Sets	0	8.00	84	0.74
100 day construction	Generator Sets	0	8.00	84	0.74
120 day construction	Generator Sets	0	8.00	84	0.74
200 day construction	Generator Sets	0	8.00	84	0.74
220 day construction	Generator Sets	0	8.00	84	0.74
90 day construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
100 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
120 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
200 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
220 day construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
90 day construction	Welders	0	8.00	46	0.45

100 day construction	Welders	0	8.00	46	0.45
120 day construction	Welders	0	8.00	46	0.45
200 day construction	Welders	1	6.00	46	0.45
220 day construction	Welders	0	8.00	46	0.45
45 day construction	Excavators	1	8.00	158	0.38
45 day construction	Rubber Tired Dozers	1	8.00	247	0.40
90 day construction	Air Compressors	1	6.00	78	0.48
90 day construction	Pavers	1	6.00	130	0.42
100 day construction	Plate Compactors	1	4.00	8	0.43
100 day construction	Concrete/Industrial Saws	1	6.00	81	0.73
120 day construction	Aerial Lifts	1	6.00	63	0.31
200 day construction	Air Compressors	1	6.00	78	0.48
180 day construction	Cement and Mortar Mixers	1	6.00	9	0.56

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
90 day construction	3	5.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
45 day construction	2	10.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
180 day construction	1	5.00	0.00	1,800.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
100 day construction	2	5.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
120 day construction	1	5.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
200 day construction	2	5.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
220 day construction	4	15.00	0.00	0.00	20.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 180 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.6000e-004	0.0000	7.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9700e-003	0.0249	0.0208	5.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	3.0934	3.0934	3.2000e-004	0.0000	3.1014
Total	**3.9700e-003**	**0.0249**	**0.0208**	**5.0000e-005**	**7.6000e-004**	**9.7000e-004**	**1.7300e-003**	**1.2000e-004**	**9.7000e-004**	**1.0900e-003**	**0.0000**	**3.0934**	**3.0934**	**3.2000e-004**	**0.0000**	**3.1014**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.5700e-003	0.2755	0.0656	6.9000e-004	0.0154	1.0300e-003	0.0165	4.2300e-003	9.9000e-004	5.2200e-003	0.0000	69.9878	69.9878	7.4300e-003	0.0000	70.1737
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-003	1.8100e-003	0.0200	7.0000e-005	6.7200e-003	4.0000e-005	6.7600e-003	1.7800e-003	4.0000e-005	1.8300e-003	0.0000	5.9761	5.9761	1.4000e-004	0.0000	5.9797
Total	**9.9700e-003**	**0.2773**	**0.0856**	**7.6000e-004**	**0.0222**	**1.0700e-003**	**0.0232**	**6.0100e-003**	**1.0300e-003**	**7.0500e-003**	**0.0000**	**75.9639**	**75.9639**	**7.5700e-003**	**0.0000**	**76.1534**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.8000e-004	0.0000	2.8000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9700e-003	0.0249	0.0208	5.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	3.0934	3.0934	3.2000e-004	0.0000	3.1014
Total	**3.9700e-003**	**0.0249**	**0.0208**	**5.0000e-005**	**2.8000e-004**	**9.7000e-004**	**1.2500e-003**	**4.0000e-005**	**9.7000e-004**	**1.0100e-003**	**0.0000**	**3.0934**	**3.0934**	**3.2000e-004**	**0.0000**	**3.1014**

<u>Mitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.5700e-003	0.2755	0.0656	6.9000e-004	0.0154	1.0300e-003	0.0165	4.2300e-003	9.9000e-004	5.2200e-003	0.0000	69.9878	69.9878	7.4300e-003	0.0000	70.1737
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-003	1.8100e-003	0.0200	7.0000e-005	6.7200e-003	4.0000e-005	6.7600e-003	1.7800e-003	4.0000e-005	1.8300e-003	0.0000	5.9761	5.9761	1.4000e-004	0.0000	5.9797
Total	**9.9700e-003**	**0.2773**	**0.0856**	**7.6000e-004**	**0.0222**	**1.0700e-003**	**0.0232**	**6.0100e-003**	**1.0300e-003**	**7.0500e-003**	**0.0000**	**75.9639**	**75.9639**	**7.5700e-003**	**0.0000**	**76.1534**

3.3 45 day construction - 2019

<u>Unmitigated Construction On-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0314	0.3320	0.1698	3.1000e-004		0.0162	0.0162		0.0149	0.0149	0.0000	27.6895	27.6895	8.7600e-003	0.0000	27.9085
Total	**0.0314**	**0.3320**	**0.1698**	**3.1000e-004**		**0.0162**	**0.0162**		**0.0149**	**0.0149**	**0.0000**	**27.6895**	**27.6895**	**8.7600e-003**	**0.0000**	**27.9085**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	9.1000e-004	9.9900e-003	3.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.9880	2.9880	7.0000e-005	0.0000	2.9898
Total	**1.2000e-003**	**9.1000e-004**	**9.9900e-003**	**3.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.9880**	**2.9880**	**7.0000e-005**	**0.0000**	**2.9898**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5700e-003	0.1018	0.1901	3.1000e-004		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	27.6895	27.6895	8.7600e-003	0.0000	27.9085
Total	**4.5700e-003**	**0.1018**	**0.1901**	**3.1000e-004**		**5.0000e-004**	**5.0000e-004**		**5.0000e-004**	**5.0000e-004**	**0.0000**	**27.6895**	**27.6895**	**8.7600e-003**	**0.0000**	**27.9085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	9.1000e-004	9.9900e-003	3.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.9880	2.9880	7.0000e-005	0.0000	2.9898
Total	**1.2000e-003**	**9.1000e-004**	**9.9900e-003**	**3.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.9880**	**2.9880**	**7.0000e-005**	**0.0000**	**2.9898**

3.4 90 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0296	0.2669	0.2585	4.0000e-004		0.0162	0.0162		0.0154	0.0154	0.0000	35.1582	35.1582	8.4600e-003	0.0000	35.3697
Total	**0.0296**	**0.2669**	**0.2585**	**4.0000e-004**		**0.0162**	**0.0162**		**0.0154**	**0.0154**	**0.0000**	**35.1582**	**35.1582**	**8.4600e-003**	**0.0000**	**35.3697**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	9.1000e-004	9.9900e-003	3.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.9880	2.9880	7.0000e-005	0.0000	2.9898
Total	**1.2000e-003**	**9.1000e-004**	**9.9900e-003**	**3.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.9880**	**2.9880**	**7.0000e-005**	**0.0000**	**2.9898**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.7500e-003	0.1633	0.2818	4.0000e-004		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	35.1581	35.1581	8.4600e-003	0.0000	35.3696
Total	**6.7500e-003**	**0.1633**	**0.2818**	**4.0000e-004**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**35.1581**	**35.1581**	**8.4600e-003**	**0.0000**	**35.3696**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	9.1000e-004	9.9900e-003	3.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.9880	2.9880	7.0000e-005	0.0000	2.9898
Total	**1.2000e-003**	**9.1000e-004**	**9.9900e-003**	**3.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.9880**	**2.9880**	**7.0000e-005**	**0.0000**	**2.9898**

3.5 100 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0183	0.1409	0.1441	2.5000e-004		8.8500e-003	8.8500e-003		8.8500e-003	8.8500e-003	0.0000	20.9441	20.9441	1.5000e-003	0.0000	20.9816
Total	**0.0183**	**0.1409**	**0.1441**	**2.5000e-004**		**8.8500e-003**	**8.8500e-003**		**8.8500e-003**	**8.8500e-003**	**0.0000**	**20.9441**	**20.9441**	**1.5000e-003**	**0.0000**	**20.9816**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	1.0100e-003	0.0111	4.0000e-005	3.7300e-003	2.0000e-005	3.7600e-003	9.9000e-004	2.0000e-005	1.0100e-003	0.0000	3.3200	3.3200	8.0000e-005	0.0000	3.3220
Total	**1.3400e-003**	**1.0100e-003**	**0.0111**	**4.0000e-005**	**3.7300e-003**	**2.0000e-005**	**3.7600e-003**	**9.9000e-004**	**2.0000e-005**	**1.0100e-003**	**0.0000**	**3.3200**	**3.3200**	**8.0000e-005**	**0.0000**	**3.3220**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	5.3000e-003	0.0900	0.1500	2.5000e-004		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004	0.0000	20.9441	20.9441	1.5000e-003	0.0000	20.9816
Total	**5.3000e-003**	**0.0900**	**0.1500**	**2.5000e-004**		**5.6000e-004**	**5.6000e-004**		**5.6000e-004**	**5.6000e-004**	**0.0000**	**20.9441**	**20.9441**	**1.5000e-003**	**0.0000**	**20.9816**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	1.0100e-003	0.0111	4.0000e-005	3.7300e-003	2.0000e-005	3.7600e-003	9.9000e-004	2.0000e-005	1.0100e-003	0.0000	3.3200	3.3200	8.0000e-005	0.0000	3.3220
Total	**1.3400e-003**	**1.0100e-003**	**0.0111**	**4.0000e-005**	**3.7300e-003**	**2.0000e-005**	**3.7600e-003**	**9.9000e-004**	**2.0000e-005**	**1.0100e-003**	**0.0000**	**3.3200**	**3.3200**	**8.0000e-005**	**0.0000**	**3.3220**

3.6 120 day construction - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	1.8300e-003	0.0306	0.0492	8.0000e-005		7.5000e-004	7.5000e-004		6.9000e-004	6.9000e-004	0.0000	6.7862	6.7862	2.1500e-003	0.0000	6.8399
Total	**1.8300e-003**	**0.0306**	**0.0492**	**8.0000e-005**		**7.5000e-004**	**7.5000e-004**		**6.9000e-004**	**6.9000e-004**	**0.0000**	**6.7862**	**6.7862**	**2.1500e-003**	**0.0000**	**6.8399**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-003	1.2100e-003	0.0133	4.0000e-005	4.4800e-003	3.0000e-005	4.5100e-003	1.1900e-003	3.0000e-005	1.2200e-003	0.0000	3.9840	3.9840	1.0000e-004	0.0000	3.9864
Total	**1.6000e-003**	**1.2100e-003**	**0.0133**	**4.0000e-005**	**4.4800e-003**	**3.0000e-005**	**4.5100e-003**	**1.1900e-003**	**3.0000e-005**	**1.2200e-003**	**0.0000**	**3.9840**	**3.9840**	**1.0000e-004**	**0.0000**	**3.9864**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	1.8600e-003	0.0425	0.0574	8.0000e-005		1.7400e-003	1.7400e-003		1.7400e-003	1.7400e-003	0.0000	6.7862	6.7862	2.1500e-003	0.0000	6.8399

Total	**1.8600e-003**	**0.0425**	**0.0574**	**8.0000e-005**		**1.7400e-003**	**1.7400e-003**		**1.7400e-003**	**1.7400e-003**	**0.0000**	**6.7862**	**6.7862**	**2.1500e-003**	**0.0000**	**6.8399**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-003	1.2100e-003	0.0133	4.0000e-005	4.4800e-003	3.0000e-005	4.5100e-003	1.1900e-003	3.0000e-005	1.2200e-003	0.0000	3.9840	3.9840	1.0000e-004	0.0000	3.9864
Total	**1.6000e-003**	**1.2100e-003**	**0.0133**	**4.0000e-005**	**4.4800e-003**	**3.0000e-005**	**4.5100e-003**	**1.1900e-003**	**3.0000e-005**	**1.2200e-003**	**0.0000**	**3.9840**	**3.9840**	**1.0000e-004**	**0.0000**	**3.9864**

3.7 200 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0555	0.3054	0.3197	4.9000e-004		0.0204	0.0204		0.0204	0.0204	0.0000	39.6491	39.6491	4.5200e-003	0.0000	39.7620
Total	**0.0555**	**0.3054**	**0.3197**	**4.9000e-004**		**0.0204**	**0.0204**		**0.0204**	**0.0204**	**0.0000**	**39.6491**	**39.6491**	**4.5200e-003**	**0.0000**	**39.7620**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6700e-003	2.0200e-003	0.0222	7.0000e-005	7.4700e-003	5.0000e-005	7.5200e-003	1.9800e-003	5.0000e-005	2.0300e-003	0.0000	6.6401	6.6401	1.6000e-004	0.0000	6.6441
Total	**2.6700e-003**	**2.0200e-003**	**0.0222**	**7.0000e-005**	**7.4700e-003**	**5.0000e-005**	**7.5200e-003**	**1.9800e-003**	**5.0000e-005**	**2.0300e-003**	**0.0000**	**6.6401**	**6.6401**	**1.6000e-004**	**0.0000**	**6.6441**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0343	0.2278	0.3188	4.9000e-004		7.8700e-003	7.8700e-003		7.8700e-003	7.8700e-003	0.0000	39.6490	39.6490	4.5200e-003	0.0000	39.7620
Total	**0.0343**	**0.2278**	**0.3188**	**4.9000e-004**		**7.8700e-003**	**7.8700e-003**		**7.8700e-003**	**7.8700e-003**	**0.0000**	**39.6490**	**39.6490**	**4.5200e-003**	**0.0000**	**39.7620**

Mitigated Construction Off-Site

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

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6700e-003	2.0200e-003	0.0222	7.0000e-005	7.4700e-003	5.0000e-005	7.5200e-003	1.9800e-003	5.0000e-005	2.0300e-003	0.0000	6.6401	6.6401	1.6000e-004	0.0000	6.6441
Total	**2.6700e-003**	**2.0200e-003**	**0.0222**	**7.0000e-005**	**7.4700e-003**	**5.0000e-005**	**7.5200e-003**	**1.9800e-003**	**5.0000e-005**	**2.0300e-003**	**0.0000**	**6.6401**	**6.6401**	**1.6000e-004**	**0.0000**	**6.6441**

3.8 220 day construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1373	1.5572	0.7015	1.5200e-003		0.0743	0.0743		0.0683	0.0683	0.0000	136.6530	136.6530	0.0432	0.0000	137.7339
Total	**0.1373**	**1.5572**	**0.7015**	**1.5200e-003**		**0.0743**	**0.0743**		**0.0683**	**0.0683**	**0.0000**	**136.6530**	**136.6530**	**0.0432**	**0.0000**	**137.7339**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	8.8100e-003	6.6500e-003	0.0732	2.4000e-004	0.0246	1.6000e-004	0.0248	6.5400e-003	1.5000e-004	6.6900e-003	0.0000	21.9122	21.9122	5.3000e-004	0.0000	21.9254
Total	**8.8100e-003**	**6.6500e-003**	**0.0732**	**2.4000e-004**	**0.0246**	**1.6000e-004**	**0.0248**	**6.5400e-003**	**1.5000e-004**	**6.6900e-003**	**0.0000**	**21.9122**	**21.9122**	**5.3000e-004**	**0.0000**	**21.9254**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0265	0.4462	0.8675	1.5200e-003		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003	0.0000	136.6529	136.6529	0.0432	0.0000	137.7338
Total	**0.0265**	**0.4462**	**0.8675**	**1.5200e-003**		**2.4900e-003**	**2.4900e-003**		**2.4900e-003**	**2.4900e-003**	**0.0000**	**136.6529**	**136.6529**	**0.0432**	**0.0000**	**137.7338**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8100e-003	6.6500e-003	0.0732	2.4000e-004	0.0246	1.6000e-004	0.0248	6.5400e-003	1.5000e-004	6.6900e-003	0.0000	21.9122	21.9122	5.3000e-004	0.0000	21.9254
Total	**8.8100e-003**	**6.6500e-003**	**0.0732**	**2.4000e-004**	**0.0246**	**1.6000e-004**	**0.0248**	**6.5400e-003**	**1.5000e-004**	**6.6900e-003**	**0.0000**	**21.9122**	**21.9122**	**5.3000e-004**	**0.0000**	**21.9254**

4.0 Operational Detail - Mobile

No Operational Emissions

Appendix B

Biological Resources Assessment

ESA

ESA

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February 28, 2018

Jeff Weishaar
Associate Vice President
Carollo Engineers, Inc.
5355 Mira Sorrento, Suite 270
San Diego, CA 92121

Subject: Results of a Biological Resources Assessment for the JB Latham Treatment Plant Facility Improvements Package B Final Design

Dear Mr. Weishaar:

This Biological Resources Letter Report for the South Orange County Wastewater Authority (SOCWA) JB Latham Treatment Plant (JBLTP) Facility Improvements Package B Final Design(project) documents the existing biological conditions on the project site. This letter report also includes a discussion of the sensitive biological resources that have a potential to occur, an analysis of potential impacts to biological resources as a result of project implementation, and recommendations to avoid or minimize impacts below a level of significance. Methodology used for this report includes a review of available literature and databases, and a field survey conducted within the project site.

Project Location

The approximately 8.3-acre project site is generally located north of State Route 1 (Pacific Coast Highway), southwest of Interstate 5, and east of Dana Point Harbor, in the City of Dana Point, Orange County, California. The project site occurs within the existing JB Latham Treatment Plant located at 34156 Del Obispo Street. The project site is located in an urbanized area of the City of Dana Point. North of the site is Del Obispo Park and the Dana Point Community Center. West of the site is Del Obispo Street and a residential community. To the south is a recently graded area that is under construction for residential condominiums, with Doheny Park Plaza further to the south adjacent to Pacific Coast Highway. To the east is San Juan Creek that has a width of approximately 260 feet. San Juan Creek Trail is located along the western bank of the San Juan Creek adjacent to the site, with an industrial development to the east of San Juan Creek is an industrial area.

The project site is also mapped within the boundaries of the Coastal Subarea Plan of the Orange County Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP).

Project Description

SOCWA proposes improvements to the JBLTP, which include equipment and structure repairs, equipment and structure replacement, new piping, safety-related modifications, and structural demolition. The following describes in detail each of the 18 Project Elements to be implemented:

1. Effluent Pump Station Piping Modifications. The 24-inch discharge pipeline from the 30-inch by 24-inch reducer section will be replaced with a 24-inch by 30-inch increaser section. The replacement includes the 24-inch check valve, actuator and pressure indicator. The flow meter will remain in place. The temporary handling of effluent during the replacement will occur.

2. Effluent Discharge Valves Replacement. Two effluent discharge valves connecting the Chlorine Contact Basin to the San Juan Creek Ocean Outfall will be replaced.

3. Secondary Sedimentation Basins Modifications (Secondary Clarifiers 10 through 13 on Figure 1). The rotating scum skimmers, telescoping valves and drain valve assembly will be replaced.

4. Secondary Sedimentation Basins Modifications (Secondary Clarifiers 1 through 9 on Figure 1). The chain and flight assembly (note that the drives have already been replaced) and telescoping valves will be replaced, and repairs to damaged concrete on the crosswalks adjacent to the drive unit will be provided.

5. Primary Effluent Channel. The basin protective coating will be replaced, the concrete surface and cracks will be repaired, the channel slide gates with drop gate assemblies will be replaced, and the diamond plate covers, supporting angles and grating rebate will be replaced. Work along the channel diamond plate covers includes modification of aeration drain piping and foul air ducting above the deck.

6. Primary Sedimentation Basins (Primary Clarifiers 1 through 6 on Figure 1). The basin protective coating will be replaced, the concrete surfaces and cracks will be repaired, and the launders, scum beach, and scum skimmers, and basin and hatch covers will be replaced. The switches will be disconnected and all new electrical conduits (includes power supply to scum skimmer drives, basin lights and power receptacles) will be rerouted from the north side of the Primary Sedimentation Basins, along the east wall of the Basins through Primary Sludge Valve Tunnel to the motor control center in the Blower Room. There are four discharge valves per digester.

7. Plant 2 Primary Influent Channel. The lining, gates, rebate and diamond plates in the Influent Channel will be replaced. The covers of the Primary Sedimentation Basin will be temporarily removed during construction and the covers will be restored after the completion of the improvement at the Plant 2 Influent Channel.

8. Plant 1 Primary Influent Channel: The basin protective coating will be replaced, the concrete surface and cracks will be repaired, and the inlet gates, diamond plate covers and grating rebate will be replaced. The primary sedimentation basins' chain and flight and collector drive control will be relocated, as necessary.

9. Safety Related Items for Liquids Facility. Various structures within the Liquids Facility portion of the treatment plant will include modifications to roofs, hatch-skylight, fixed ladders, and handrails.

10. Safety Related Items for Solids Facility. Various structures within the Solids Facility portion of the treatment plant will include modifications to roofs, hatch-skylight, fixed ladders, and handrails.

11. Modification of the Existing Thickening and Digestion System. The metal structures of the DAF units are known to have structural defects due to corrosion. This modification includes patching up structure, sand blasting and recoating the interior of the DAFs, replacement of DAF covers and handrails, and replacement and coating collector mechanism. This modification also includes an upgrade containing a dissolution tank, recirculation pump, compressor, thicken waste activated sludge (TWAS) pumps, aboveground piping and valves. The instrumentation and control system, all wiring, aboveground conduit and Motor Control Center (MCC) buckets are also included.

12. Centrate Drainage Pump Station and Discharge Line. The existing centrate piping runs between the Energy Recovery Building and Plant 1 Headworks Building. The original drainage line was modified in 2008, however the system is still subject to flow backing up. This improvement includes a pump, re-routed discharge line, pump station control and power supply.

13. Digesters 1 and 2 Mixing System Improvements. Improvements include replacement of the existing pumps and control valves. The existing mix pumps are to be replaced with chopper type pumps.

14. Heat Exchanger Replacement. The four existing heat exchangers located between Digesters 1 and 2 and between 3 and 4 will be replaced along with the aboveground piping.

15. Boilers Replacement. The boilers and control system located in the Digester 1 and 2 Control Building and Digester 3 and 4 Control Building will be replaced.

16. Digester Control Buildings. The gas monitoring system and lighting will be replaced and the roof will be removed and reconstructed at Digester Control Building 1 and 2. All HVAC equipment and penetrations through the roof will be replaced and a walkway on the roof will be reinforced at Digester Control Building 3 and 4. A new stairway for each digester to the top of Digesters 3 and 4 will be included.

17. Laboratory Demolition. Because SOCWA has shifted its laboratory function to the Regional Treatment Plant, the existing laboratory that dates back to the 1960’s and has a dimension of approximately 47 feet by 33 feet by 12.7 feet tall will be demolished.

18. Energy Recovery Building Improvements. A 25-foot-long monorail system will be provided on the upper floor of the Energy Recovery Building to allow storage of equipment. The weight capacity of the monorail crane will be 2 tons. An independent support system for the monorail system will be provided on the ceiling. In addition, the existing built-up roof and skylight support curbs have aged and will be replaced.

Methodology

Literature Review

Prior to conducting the field survey, ESA biologist Tommy Molioo conducted a database search and review of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) (CDFW 2018) and California Native Plant Society (CNPS) Rare Plant Inventory (CNPS 2018) for recorded occurrences of special-status plant and wildlife species within the Dana Point, California 7.5-minute USGS topographic quadrangle and the five surrounding USGS quadrangles (**Attachment A**). Combined, the sources reviewed provided a comprehensive baseline from which to inventory the biological resources potentially occurring on the project site and within the general area.

Field Survey

Field surveys were conducted by ESA biologist Tommy Molioo on January 28, 2018 from the hours of 9:00 AM to 11:00 AM. Field surveys conducted include vegetation mapping, assessment for potential wetlands, and habitat suitability assessment for special-status species[1]. Weather conditions during the survey consisted of an average temperature of 70 degrees Fahrenheit, winds of 1 to 2 miles per hour, and mostly sunny skies. The survey consisted of walking the entire project site to characterize and map vegetation communities within the project site and immediate vicinity. Vegetation communities were characterized based on the presence of dominant plant species and delineated within the project site. Vegetation community classification and descriptions were determined according to *A Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009) or based on field observations and technical expertise. Plant taxonomy followed Baldwin, et al. (2012).

All areas within and adjacent to the project site were assessed for their potential to support special-status plant or wildlife species. The potential for special-status species to occur within or adjacent to the proposed project was based on the presence of suitable habitat (including soils and vegetation), previously recorded occurrences, topography and elevation, and existing land uses. Representative photographs of the project site are included in **Attachment B**.

Regulatory Framework

Endangered Species Act

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

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

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 Code of Federal Regulations [CFR] Section 17.3). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR Section 17.3).

Clean Water Act

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

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

Migratory Bird Treaty Act

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

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

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

California Environmental Quality Act

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

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or the USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with the provisions of an adopted habitat conservation plan (HCP); Natural Community Conservation Plan; or other approved local, regional, or state HCP.

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

California Fish and Game Code

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

CFGC Sections 1600–1616 – Pursuant to Section 1600 et seq. of the CFGC, the California Department of Fish and Wildlife (CDFW) (formerly California Department of Fish and Game) regulates activities of an applicant's project that would substantially alter the flow, bed, channel, or banks of streams or lakes, unless certain conditions outlined by CDFW are met by the applicant. The limits of CDFW jurisdiction are defined in CFGC

Section 1600 et seq. as the “bed, channel, or bank of any river, stream,[2] or lake designated by CDFW in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit.”[3] However, in practice, CDFW usually extends its jurisdictional limit and assertion to the top of a bank of a stream, the bank of a lake, or outer edge of the riparian vegetation, whichever is wider.

In some cases, drainage ditches and retention ponds[4] can be potentially considered under the regulatory administration of CDFW. CDFW provides specific guidance concerning its regulatory administration in California Code of Regulations Title 14 Section 720 (Designation of Waters of Department Interest):

For the purpose of implementing Sections 1601 and 1603 of the Fish and Game Code, which requires submission to the Department of general plans sufficient to indicate the nature of a project for construction by or on behalf of any person, governmental agency, state or local, and any public utility, of any project which will divert, obstruct, or change the natural flow or bed of any river, stream, or lake designated by the Department, or will use material from the streambeds designated by the Department, all rivers, streams, lakes, and streambeds in the State of California, including all rivers, streams, and streambeds, *which may have intermittent flows of water*, are hereby designated for such purpose (italics added.)

CFGC Sections 2050–2115 – Any proposed impact to state-listed species within or adjacent to the project area would require a permit under CESA. CESA generally parallels the main provisions of FESA and is administered by CDFW. CESA prohibits take of wildlife and plants listed as threatened or endangered by the CFGC. “Take” is defined under the CFGC as any action or attempt to “hunt, pursue, catch, capture, or kill.” Therefore, take under CESA does not include “the taking of habitat alone or the impacts of the taking.”[5] Rather, the courts have affirmed that, under CESA, “taking involves mortality.”

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

CFGC Section 2080.1 allows an applicant who has obtained a federal incidental take statement as part of a Biological Opinion pursuant to a FESA Section 7 consultation or an incidental take permit under FESA Section 10(a) to notify the CDFW Director in writing that the applicant has been issued an incidental take statement or permit pursuant to FESA and to submit a copy to the CDFW Director. The CDFW Director then has 30 days to

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

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

4 Title 14 CCR 1.56 defines a lake as a feature that “includes lakes or man-made reservoirs.”

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

determine whether the incidental take statement or permit is “consistent” with CESA in the form of a written “consistency determination.” If the CDFW Director determines that the incidental take statement or permit is consistent with CESA, the applicant does not need to obtain separate take authorization from CDFW in the form of an incidental take permit under CFGC Section 2081(b) and (c). However, consistency determinations apply only in those situations where the affected species is listed under both FESA and CESA. If the species is listed under CESA only, an applicant must obtain an incidental take permit under CFGC Section 2081(b) and (c).

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

Existing Conditions

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

General Site Characteristics

The project site is located within a developed area of the City of Dana Point. Surrounding land uses consist of commercial and residential developments, a park to the north, and San Juan Creek to the east. The site occurs on relatively flat land, at an elevation range of approximately 15 feet above mean sea level (AMSL) to 20 feet AMSL. The project site is entirely developed, consisting of very little vegetation throughout most of the site; however, non-native landscaped trees occur along the boundaries of the project site. San Juan Creek, a concrete-lined channel with no riparian vegetation adjacent to the project site, is located to the east of the project site. The project site has been developed since the early 1960’s, and no native vegetation or natural biological conditions occur on the project site.

Soils

Based on a review of the U.S. Department of Agriculture Soils Map for the project site, the historically mapped soils on the project site consist of Metz sandy loam and Sorrento clay loam (NRCS 2018). However, the development on the project site has significantly altered the natural composition and compaction of the previously mapped soils. The observed surface soils have been covered with concrete and asphalt, except in areas where landscaped trees occur. No native soils currently exist on the project site.

Vegetation Communities and Land Cover Types

The vegetation communities and land cover types previously occurring on the project site have been significantly altered and the current land cover on the project site consists entirely of developed land, as further described below.

Developed Land

Developed land comprises the entirety of the project site. The majority of the project site consists of buildings, tanks, and plant infrastructure necessary to the operations of the facility. No exposed surface soils, besides at the base of landscaped trees, occur on the project site. The only vegetation observed within developed areas includes non-native landscaped trees that occur along the boundaries of the project site. Non-native landscaped trees observed include Peruvian pepper tree (*Schinus molle*), pine tree (*Pinus* sp.), blue gum (*Eucalyptus globulus*), Mexican fan palm (*Washingtonia robusta*), and acacia (*Acacia* sp.).

Wildlife

Wildlife observed during the field reconnaissance included avian species commonly observed in upland settings and urban environments including house finch (*Carpodacus mexicanus*), European starling (*Sturnus vulgaris*), yellow-rumped warbler (*Setophaga coronata*), common raven (*Corvus corax*), and Anna’s hummingbird (*Calypte anna*). No mammal, reptile, amphibian, or fish species were observed on the project site during the survey.

Discussion of Findings

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

Sensitive Natural Communities

Sensitive natural communities are vegetation communities that are considered rare in the region by regulatory agencies and are known to provide habitat for sensitive animal or plant species. Impacts to these sensitive vegetation communities require restoration or compensatory mitigation per CEQA Guidelines. Sensitive natural communities known to occur in the vicinity of the project site includes southern coast live oak riparian forest, southern coastal salt marsh, southern cottonwood willow riparian forest, southern dune scrub, southern foredunes, southern mixed riparian forest, southern sycamore alder riparian woodland, and valley needlegrass grassland.

The project site is entirely developed and lacks native soils capable of supporting any sensitive natural community known to occur in the general area. Therefore, there is no potential for a sensitive natural community to occur on the project site, and no sensitive natural communities were observed during the field survey. San Juan Creek is located adjacent to the eastern boundary of the project site which could support riparian woodlands and forests. However, the portion of San Juan Creek adjacent to the project site is regularly maintained to reduce flow restriction and lacks any established native vegetation growing within the channel. Therefore, there is no potential for a sensitive natural community to occur adjacent to the project site that could be impacted by construction noise or other indirect impact.

Special-Status Plants

Special-status plants were not detected during the field survey, and the entirely developed nature of the project site eliminates the potential for any special-status plant species to occur. Although the site visit was conducted outside of the blooming period for special-status plant species listed in Attachment A, and a focused rare plant survey was not conducted, the project site is unlikely to support special-status plant species due to its lack of suitable vegetation communities, observed surface soils, and high level of disturbance. Because of the lack of suitable habitat onsite to support special-status plants, the project will have no impact on any special-status plants. No focused plant surveys or mitigation measures would be recommended.

Special-Status Wildlife

Special-status wildlife species were not observed during the field survey. Due to the developed nature of the site, with no native habitats existing with the project boundaries, the potential for special-status wildlife to occur onsite is minimal. Additionally, the project site is not connected to open areas of habitat that could support special-status wildlife and the potential for special-status wildlife to move onto the site is low. Due to the lack of suitable habitat on the project site to support special-status wildlife, none of the special-status wildlife species listed in Attachment A have any potential to occur. Therefore, the proposed project will not result in any impact to special-status wildlife species, and no focused surveys or mitigation measures are recommended.

Nesting Birds

The existing landscaped trees along the boundaries of the project site, provide suitable nesting habitat for avian species protected by the MBTA and California Fish and Game Code (CFGC) 3500. No sign of active nesting was observed during the field survey; however, the survey was conducted outside the general avian nesting season of February 1 through August 31. Direct removal of habitat or trees where nesting birds or nests are present, disruption of nesting activity as a result of construction noise and vibration during the nesting season would be considered significant. Avoidance measures are included in the Recommendations section to reduce potential project-related impacts to nesting birds.

Wildlife Corridors

Wildlife movement corridors, also referred to as biological core and linkage areas, are generally defined as linear features along which animals can travel from one habitat or resource area to another. The project site does not function as a wildlife movement corridor, due to the existing developments within the City of Dana Point. Additionally, the project site is bounded by development in all directions, preventing the potential for wildlife species to move through the project site. San Juan Creek is located to the east of the project site which does function as a wildlife corridor for local wildlife, particularly birds, to move through the area between the Pacific Ocean and the Cleveland National Forest. However, the project site is physically separated from San Juan Creek and the proposed project will not result in any impacts outside of the current JBLTP boundary. Therefore, the proposed project is expected to result in a less than significant impact to wildlife corridors.

Jurisdictional Resources

Wetlands are defined under the federal Clean Water Act (CWA), as accepted by the U.S. Army Corps of Engineers and CDFW, as land that is flooded or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include areas such as swamps, marshes, and bogs. If potential wetlands or drainage features are onsite and may be impacted by the proposed project, a jurisdictional delineation would be required to confirm the presence of federal and state wetlands and waters within the project site.

The field survey determined that no jurisdictional resources occur within the boundaries of the project site. Moreover, the parcel is flat and without drainage features, and is surrounded by development with no connectivity to jurisdictional resources. However, San Juan Creek occurs adjacent to the east of the project site that is regulated by the CWA and CFGC. The channel is concrete-lined with no riparian vegetation and only dirt, rip-rap, and concrete occur on the associated levees. The portion of San Juan Creek adjacent to the project site is channelized from the Pacific Ocean upstream towards the crossing below Interstate 5. No portions of the project will result in any impacts to San Juan Creek, a jurisdictional feature. Therefore, a jurisdictional delineation survey, permitting, and mitigation is not recommended for the project.

Trees Regulated by Local Policies and Ordinances

Several non-native and landscaped trees are mapped along the boundaries of the project site. The tree species along the boundaries of the site include Peruvian pepper tree, pine tree, blue gum, Mexican fan palm, and acacia. Street and parkway trees require written authorization from the City in accordance with Municipal Code §13.04.050 Care of Natural Resources, and §14.01.610 Landscape Maintenance Within the Parkway Area. However, the proposed project does not include the removal of street or parkway trees, and thus, the municipal code ordinances do not apply to the proposed project. Therefore, there would be no impact to local policies or ordinances, particularly ones applying to tree protection. No additional surveys or mitigation measures are recommended.

Habitat Conservation Plans

The project site occurs within the boundaries of the Coastal Subarea Plan of the Orange County NCCP/HCP. Construction of the proposed project would not result in impacts to coastal sage scrub habitat or coastal California gnatcatcher, a target planning species of the Orange County NCCP/HCP. Also, the project site does not occur within land designated for conservation by the Orange County NCCP/HCP. Therefore, construction and operation of project would not conflict with the goals and provisions of the Orange County NCCP/HCP, and there will be no impact to local or regional Habitat Conservation Plans. No mitigation measures are recommended.

Recommendations

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

Nesting Birds

All proposed project activities (including, but not limited to, staging and disturbances to native and non-native vegetation, structures, and substrates) is recommended to occur outside of the avian nesting season, which generally runs from February 1 through August 31, to avoid take of nesting birds, eggs, chicks, or fledglings.

If construction activities occur during the avian breeding season, a qualified biologist with experience in conducting nesting bird surveys shall conduct a pre-construction clearance survey for active nests within 500 feet of the proposed construction area and no more than ten days prior to the initiation of project construction activities. If a protected native bird is found, flagging, stakes, and/or construction fencing and noise attenuation shall be used, if necessary, to demarcate a suitable buffer zone. The buffer zone will be determined by the qualified biologist and will depend on the sensitivity of the species and proximity of the nest to the construction area. A qualified biological monitor shall be present onsite during construction to ensure that these activities remain within the project footprint (i.e., outside the demarcated buffer) and that the flagging/stakes/fencing is being maintained, and to minimize the likelihood that active nests are abandoned or fail due to project construction activities. The 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. In addition, the frequency of monitoring construction activities will be determined by the qualified biologist.

Project construction personnel, including all contractors working onsite, will be instructed on the sensitivity of the area. The project proponent shall delay all project construction activities within the buffer zone until a qualified biologist has determined that the juveniles have fledged, the nest is vacated, and there is no evidence of a second attempt at nesting.

If there is a lapse of construction activities associated with the proposed project 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.

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If you should have any questions regarding the findings of this letter report, please feel free to contact me at 949-753-7001 or tmolioo@esassoc.com.

Sincerely,

Tommy Molioo
Sr. Associate Biologist

Attachments:

A. CNDDB and CNPS Lists
B. Site Photographs

ATTACHMENT A

SPECIES LISTS

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Dana Point (3311746) OR San Onofre Bluff (3311735) OR San Clemente (3311745) OR Canada Gobernadora (3311755) OR San Juan Capistrano (3311756) OR Laguna Beach (3311757))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Allen's pentachaeta *Pentachaeta aurea ssp. allenii*	PDAST6X021	None	None	G4T1	S1	1B.1
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
aphanisma *Aphanisma blitoides*	PDCHE02010	None	None	G3G4	S2	1B.2
arroyo chub *Gila orcuttii*	AFCJB13120	None	None	G2	S2	SSC
arroyo toad *Anaxyrus californicus*	AAABB01230	Endangered	None	G2G3	S2S3	SSC
big free-tailed bat *Nyctinomops macrotis*	AMACD04020	None	None	G5	S3	SSC
big-leaved crownbeard *Verbesina dissita*	PDAST9R050	Threatened	Threatened	G1G2	S1	1B.1
Blochman's dudleya *Dudleya blochmaniae ssp. blochmaniae*	PDCRA04051	None	None	G3T2	S2	1B.1
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
California glossy snake *Arizona elegans occidentalis*	ARADB01017	None	None	G5T2	S2	SSC
California horned lark *Eremophila alpestris actia*	ABPAT02011	None	None	G5T4Q	S4	WL
California least tern *Sternula antillarum browni*	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
California satintail *Imperata brevifolia*	PMPOA3D020	None	None	G4	S3	2B.1
chaparral nolina *Nolina cismontana*	PMAGA080E0	None	None	G3	S3	1B.2
chaparral ragwort *Senecio aphanactis*	PDAST8H060	None	None	G3	S2	2B.2
cliff spurge *Euphorbia misera*	PDEUP0Q1B0	None	None	G5	S2	2B.2
coast horned lizard *Phrynosoma blainvillii*	ARACF12100	None	None	G3G4	S3S4	SSC
Coast Range newt *Taricha torosa*	AAAAF02032	None	None	G4	S4	SSC
coastal cactus wren *Campylorhynchus brunneicapillus sandiegensis*	ABPBG02095	None	None	G5T3Q	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
coastal California gnatcatcher *Polioptila californica californica*	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
coastal whiptail *Aspidoscelis tigris stejnegeri*	ARACJ02143	None	None	G5T5	S3	SSC
Cooper's hawk *Accipiter cooperii*	ABNKC12040	None	None	G5	S4	WL
Coronado skink *Plestiodon skiltonianus interparietalis*	ARACH01114	None	None	G5T5	S2S3	WL
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	PDAST5L0A1	None	None	G4T2	S2	1B.1
Coulter's saltbush *Atriplex coulteri*	PDCHE040E0	None	None	G3	S1S2	1B.2
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	None	G3G4	S1S2	
Davidson's saltscale *Atriplex serenana var. davidsonii*	PDCHE041T1	None	None	G5T1	S1	1B.2
decumbent goldenbush *Isocoma menziesii var. decumbens*	PDAST57091	None	None	G3G5T2T3	S2	1B.2
Dulzura pocket mouse *Chaetodipus californicus femoralis*	AMAFD05021	None	None	G5T3	S3	SSC
estuary seablite *Suaeda esteroa*	PDCHE0P0D0	None	None	G3	S2	1B.2
globose dune beetle *Coelus globosus*	IICOL4A010	None	None	G1G2	S1S2	
golden eagle *Aquila chrysaetos*	ABNKC22010	None	None	G5	S3	FP
grasshopper sparrow *Ammodramus savannarum*	ABPBXA0020	None	None	G5	S3	SSC
intermediate mariposa-lily *Calochortus weedii var. intermedius*	PMLIL0D1J1	None	None	G3G4T2	S2	1B.2
intermediate monardella *Monardella hypoleuca ssp. intermedia*	PDLAM180A4	None	None	G4T2?	S2?	1B.3
Laguna Beach dudleya *Dudleya stolonifera*	PDCRA040P0	Threatened	Threatened	G1	S1	1B.1
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S2	
little mousetail *Myosurus minimus ssp. apus*	PDRAN0H031	None	None	G5T2Q	S2	3.1
long-eared owl *Asio otus*	ABNSB13010	None	None	G5	S3?	SSC
long-spined spineflower *Chorizanthe polygonoides var. longispina*	PDPGN040K1	None	None	G5T3	S3	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
many-stemmed dudleya *Dudleya multicaulis*	PDCRA040H0	None	None	G2	S2	1B.2
mesa horkelia *Horkelia cuneata var. puberula*	PDROS0W045	None	None	G4T1	S1	1B.1
Mexican long-tongued bat *Choeronycteris mexicana*	AMACB02010	None	None	G4	S1	SSC
monarch - California overwintering population *Danaus plexippus pop. 1*	IILEPP2012	None	None	G4T2T3	S2S3	
mud nama *Nama stenocarpa*	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	AMAFD05031	None	None	G5T3T4	S3S4	SSC
Nuttall's scrub oak *Quercus dumosa*	PDFAG050D0	None	None	G3	S3	1B.1
orange-throated whiptail *Aspidoscelis hyperythra*	ARACJ02060	None	None	G5	S2S3	WL
Orcutt's pincushion *Chaenactis glabriuscula var. orcuttiana*	PDAST20095	None	None	G5T1T2	S1	1B.1
Pacific pocket mouse *Perognathus longimembris pacificus*	AMAFD01042	Endangered	None	G5T1	S1	SSC
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G5	S3	SSC
Palmer's grapplinghook *Harpagonella palmeri*	PDBOR0H010	None	None	G4	S3	4.2
Parish's brittlescale *Atriplex parishii*	PDCHE041D0	None	None	G1G2	S1	1B.1
Pendleton button-celery *Eryngium pendletonense*	PDAPI0Z120	None	None	G1	S1	1B.1
pocketed free-tailed bat *Nyctinomops femorosaccus*	AMACD04010	None	None	G4	S3	SSC
prostrate vernal pool navarretia *Navarretia prostrata*	PDPLM0C0Q0	None	None	G2	S2	1B.1
red-diamond rattlesnake *Crotalus ruber*	ARADE02090	None	None	G4	S3	SSC
Riverside fairy shrimp *Streptocephalus woottoni*	ICBRA07010	Endangered	None	G1G2	S1S2	
Robinson's pepper-grass *Lepidium virginicum var. robinsonii*	PDBRA1M114	None	None	G5T3	S3	4.3
salt spring checkerbloom *Sidalcea neomexicana*	PDMAL110J0	None	None	G4	S2	2B.2
San Diego desert woodrat *Neotoma lepida intermedia*	AMAFF08041	None	None	G5T3T4	S3S4	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
San Diego fairy shrimp *Branchinecta sandiegonensis*	ICBRA03060	Endangered	None	G2	S2	
San Miguel savory *Clinopodium chandleri*	PDLAM08030	None	None	G2	S2	1B.2
south coast saltscale *Atriplex pacifica*	PDCHE041C0	None	None	G4	S2	1B.2
southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	ABPBX91091	None	None	G5T3	S3	WL
Southern Coast Live Oak Riparian Forest *Southern Coast Live Oak Riparian Forest*	CTT61310CA	None	None	G4	S4	
Southern Coastal Salt Marsh *Southern Coastal Salt Marsh*	CTT52120CA	None	None	G2	S2.1	
Southern Cottonwood Willow Riparian Forest *Southern Cottonwood Willow Riparian Forest*	CTT61330CA	None	None	G3	S3.2	
Southern Dune Scrub *Southern Dune Scrub*	CTT21330CA	None	None	G1	S1.1	
Southern Foredunes *Southern Foredunes*	CTT21230CA	None	None	G2	S2.1	
Southern Mixed Riparian Forest *Southern Mixed Riparian Forest*	CTT61340CA	None	None	G2	S2.1	
Southern Sycamore Alder Riparian Woodland *Southern Sycamore Alder Riparian Woodland*	CTT62400CA	None	None	G4	S4	
southern tarplant *Centromadia parryi ssp. australis*	PDAST4R0P4	None	None	G3T2	S2	1B.1
southwestern willow flycatcher *Empidonax traillii extimus*	ABPAE33043	Endangered	Endangered	G5T2	S1	
steelhead - southern California DPS *Oncorhynchus mykiss irideus pop. 10*	AFCHA0209J	Endangered	None	G5T1Q	S1	
Stephens' kangaroo rat *Dipodomys stephensi*	AMAFD03100	Endangered	Threatened	G2	S2	
sticky dudleya *Dudleya viscida*	PDCRA040T0	None	None	G2	S2	1B.2
summer holly *Comarostaphylis diversifolia ssp. diversifolia*	PDERI0B011	None	None	G3T2	S2	1B.2
thread-leaved brodiaea *Brodiaea filifolia*	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
tidewater goby *Eucyclogobius newberryi*	AFCQN04010	Endangered	None	G3	S3	SSC
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
two-striped gartersnake *Thamnophis hammondii*	ARADB36160	None	None	G4	S3S4	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Valley Needlegrass Grassland *Valley Needlegrass Grassland*	CTT42110CA	None	None	G3	S3.1	
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G5T4	S3S4	SSC
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC
western red bat *Lasiurus blossevillii*	AMACC05060	None	None	G5	S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	None	None	G3	S3	SSC
white rabbit-tobacco *Pseudognaphalium leucocephalum*	PDAST440C0	None	None	G4	S2	2B.2
white-tailed kite *Elanus leucurus*	ABNKC06010	None	None	G5	S3S4	FP
yellow rail *Coturnicops noveboracensis*	ABNME01010	None	None	G4	S1S2	SSC
yellow warbler *Setophaga petechia*	ABPBX03010	None	None	G5	S3S4	SSC
yellow-breasted chat *Icteria virens*	ABPBX24010	None	None	G5	S3	SSC
Yuma myotis *Myotis yumanensis*	AMACC01020	None	None	G5	S4	

Record Count: 93

CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

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

Search Criteria

Found in Quads 3311757, 3311756, 3311755, 3311746 3311745 and 3311735;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Aphanisma blitoides	aphanisma	Chenopodiaceae	annual herb	Feb-Jun	1B.2	S2	G3G4
Artemisia palmeri	San Diego sagewort	Asteraceae	perennial deciduous shrub	(Feb)May-Sep	4.2	S3?	G3?
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	4.2	S4	G4
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	Mar-Oct	1B.2	S1S2	G3
Atriplex pacifica	South Coast saltscale	Chenopodiaceae	annual herb	Mar-Oct	1B.2	S2	G4
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	1B.1	S1	G1G2
Atriplex serenana var. davidsonii	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S1	G5T1
Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	1B.1	S2	G2
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	4.2	S3S4	G3G4
Calochortus weedii var. intermedius	intermediate mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	1B.2	S2	G3G4T2
Caulanthus simulans	Payson's jewelflower	Brassicaceae	annual herb	(Feb)Mar-May(Jun)	4.2	S4	G4
Centromadia parryi ssp. australis	southern tarplant	Asteraceae	annual herb	May-Nov	1B.1	S2	G3T2
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	Asteraceae	annual herb	Jan-Aug	1B.1	S1	G5T1T2
Chorizanthe leptotheca	Peninsular spineflower	Polygonaceae	annual herb	May-Aug	4.2	S3	G3
Chorizanthe polygonoides var. longispina	long-spined spineflower	Polygonaceae	annual herb	Apr-Jul	1B.2	S3	G5T3
Cistanthe maritima	seaside cistanthe	Montiaceae	annual herb	(Feb)Mar-Jun(Aug)	4.2	S3	G3G4
Clinopodium chandleri	San Miguel savory	Lamiaceae	perennial	Mar-Jul	1B.2	S2	G2

			shrub				
Comarostaphylis diversifolia ssp. diversifolia	summer holly	Ericaceae	perennial evergreen shrub	Apr-Jun	1B.2	S2	G3T2
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov	4.2	S4	G4
Dichondra occidentalis	western dichondra	Convolvulaceae	perennial rhizomatous herb	(Jan)Mar-Jul	4.2	S3S4	G3G4
Dudleya blochmaniae ssp. blochmaniae	Blochman's dudleya	Crassulaceae	perennial herb	Apr-Jun	1B.1	S2	G3T2
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	1B.2	S2	G2
Dudleya stolonifera	Laguna Beach dudleya	Crassulaceae	perennial stoloniferous herb	May-Jul	1B.1	S1	G1
Dudleya viscida	sticky dudleya	Crassulaceae	perennial herb	May-Jun	1B.2	S2	G2
Eryngium pendletonense	Pendleton button-celery	Apiaceae	perennial herb	Apr-Jun(Jul)	1B.1	S1	G1
Euphorbia misera	cliff spurge	Euphorbiaceae	perennial shrub	Dec-Aug(Oct)	2B.2	S2	G5
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	4.2	S3	G4
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
Horkelia cuneata var. puberula	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	1B.1	S1	G4T1
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	2B.1	S3	G4
Isocoma menziesii var. decumbens	decumbent goldenbush	Asteraceae	perennial shrub	Apr-Nov	1B.2	S2	G3G5T2T3
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	4.3	S3	G5T3
Lycium brevipes var. hassei	Santa Catalina Island desert-thorn	Solanaceae	perennial deciduous shrub	Jun(Aug)	3.1	S1	G5T1Q
Lycium californicum	California box-thorn	Solanaceae	perennial shrub	(Dec)Mar,Jun,Jul,Aug	4.2	S4	G4
Malacothrix saxatilis var. saxatilis	cliff malacothrix	Asteraceae	perennial rhizomatous herb	Mar-Sep	4.2	S4	G5T4
Microseris douglasii ssp. platycarpha	small-flowered microseris	Asteraceae	annual herb	Mar-May	4.2	S4	G4T4
Monardella hypoleuca ssp. intermedia	intermediate monardella	Lamiaceae	perennial rhizomatous herb	Apr-Sep	1B.3	S2?	G4T2?
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q
Nama stenocarpa	mud nama	Namaceae	annual / perennial herb	Jan-Jul	2B.2	S1S2	G4G5

Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
Nolina cismontana	chaparral nolina	Ruscaceae	perennial evergreen shrub	(Mar)May-Jul	1B.2	S3	G3
Pentachaeta aurea ssp. allenii	Allen's pentachaeta	Asteraceae	annual herb	Mar-Jun	1B.1	S1	G4T1
Phacelia ramosissima var. austrolitoralis	south coast branching phacelia	Hydrophyllaceae	perennial herb	Mar-Aug	3.2	S3	G5?T3
Piperia cooperi	chaparral rein orchid	Orchidaceae	perennial herb	Mar-Jun	4.2	S3	G3
Polygala cornuta var. fishiae	Fish's milkwort	Polygalaceae	perennial deciduous shrub	May-Aug	4.3	S4	G5T4
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	2B.2	S2	G4
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	Feb-Apr(May-Aug)	1B.1	S3	G3
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	4.2	S4	G4
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	2B.2	S2	G4
Suaeda esteroa	estuary seablite	Chenopodiaceae	perennial herb	(May)Jul-Oct(Jan)	1B.2	S2	G3
Suaeda taxifolia	woolly seablite	Chenopodiaceae	perennial evergreen shrub	Jan-Dec	4.2	S4	G
Tetracoccus dioicus	Parry's tetracoccus	Picrodendraceae	perennial deciduous shrub	Apr-May	1B.2	S2	G3?
Verbesina dissita	big-leaved crownbeard	Asteraceae	perennial herb	(Mar)Apr-Jul	1B.1	S1	G1G2
Viguiera laciniata	San Diego County viguiera	Asteraceae	perennial shrub	Feb-Jun(Aug)	4.3	S4	G4

Suggested Citation

California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 12 February 2018].

Questions and Comments
rareplants@cnps.org

ATTACHMENT B

SITE PHOTOGRAPHS

Attachment B: Site Photographs

Photograph 1: Taken from the northwestern corner of the JBLTP, facing south.

Photograph 2: Taken from the eastern boundary of the JBLTP, facing west towards facility buildings.

Attachment B: Site Photographs

Photograph 3: Taken from the SE corner of the project site, facing east towards landscaped pine trees.

Photograph 4: Taken from the SE corner of the project site, facing west towards a row of paperbark trees.

Attachment B: Site Photographs

Photograph 5: Taken from the NE corner of the project site, facing west towards the northern project boundary.

Photograph 6: Taken from the NE corner of the project site, facing south towards landscaped trees and water tanks.

Appendix C

Cultural Resources and Paleontological Resources Assessments and AB-52 Coordination Materials

Public Version

J.B. Latham Treatment Plant Facility Improvements Package B Final Design

Cultural Resources Assessment Report

Prepared for

South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

March 2018

Public Version

J.B. Latham Treatment Plant Facility Improvements Package B Final Design

Cultural Resources Assessment Report

March 2018

Prepared for:
South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

Prepared by:
ESA
626 Wilshire Blvd. Suite 1100
Los Angeles, CA 90017

Project Director and Principal Investigator:
Michael R. Bever, Ph.D., R.P.A.

Report Authors:
Amber Grady, M.A.
Michael Vader, B.A.
Christopher Lockwood, Ph.D., R.P.A.

Project Location:
Dana Point (CA) USGS 7.5-minute Topographic Quad
Township 8 South, Range 8 West, Unsectioned

Acreage: Approx. 8.3 acres

626 Wilshire Boulevard
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Los Angeles, CA 90017
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J.B. Latham Treatment Plant Facility Improvements Package B Final Design Cultural Resources Assessment Report

Appendices

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Figures

Tables

EXECUTIVE SUMMARY

J.B. Latham Treatment Plant Facility Improvements Package B Final Design Cultural Resources Assessment Report

Environmental Science Associates (ESA) has been retained by the South Orange County Wastewater Authority (SOCWA) to conduct a cultural resources assessment for the J.B. Latham Treatment Plant Facility Improvements Package B Final Design (project) in support of an Initial Study/Mitigated Negative Declaration (IS/MND). The proposed project would make improvements to the existing J.B. Latham Treatment Plant (JBLTP). These improvements would include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition. SOCWA is the lead agency pursuant to the California Environmental Quality Act (CEQA). The 8.3-acre project area encompasses the JBLTP located at 34156 Del Obispo Street in the City of Dana Point. Specifically, the project is located in an unsectioned portion of Township 8 South, Range 8 West on the Dana Point USGS 7.5-minute topographic quadrangle.

A records search for the project was conducted on January 17, 2018, by staff at the California Historical Resources Information System (CHRIS) South Central Coastal Information Center (SCCIC) housed at California State University, Fullerton. The records search included a review of all recorded archaeological resources and previous studies within the project area, as well as a 0.5-mile radius around the project area. The records search also included a review of historic architectural resources within the project area, as well as a 0.25-mile radius around the project area. The records search results indicate that 42 cultural resources studies have been conducted within a ½-mile radius of the project. Approximately 75 percent of the 0.5-mile records search radius has been included in previous cultural resources surveys. Of the 42 previous studies, eight (OC-00536, -01172, -01178, -01204, -01434, -03765, -03826) overlap the project. The entirety of the project area has been included in previous cultural resources studies.

The records search results indicate that 12 cultural resources have been previously recorded within the 0.5-mile records search radius. Of these 12 resources, three are prehistoric archaeological sites (P-30-000021, -000188, and -000484), two are historic-period archaeological sites (P-30-001337 and -001767), and seven are historic-period built resources (P-30-176663, -177499, -177553, -177554, -177596, -177597, and -177631). No cultural resources have been previously recorded within the project area.

A desktop geoarchaeological review conducted for the project indicates the project area is underlain by Holocene-age deposits, and given the project's proximity to upland, coastal and alluvial environments, the project area is considered highly sensitive for the presence of prehistoric subsurface deposits. In addition, the record of floodplain aggradation suggests there have been a series of flood events capable of entombing and preserving archaeological resources. As a result, the project area is considered to have a high sensitivity for multiple, intact, and stratigraphically-distinct archaeological components. Within the project area, the western half may retain more integrity than the eastern half.

The California Native American Heritage Commission (NAHC) maintains a confidential Sacred Lands File (SLF) which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on January 9, 2018, to request a search of the SLF. The NAHC responded to the request in a letter dated January 10, 2018, indicating that no Native American cultural resources are known to be located within the project area.

A cultural resources survey of the project area was conducted on January 25, 2018, by cultural resources specialists Max Loder, M.A., and Michael Vader, B.A. The survey was aimed at assessing the current conditions of the JBLTP, as well as to determine the archaeological potential within the project area. The structures and buildings that comprise the JBLTP were photographed. Due to the developed and paved nature of the project area, it was subject to a reconnaissance archaeological survey, wherein areas within visible ground surface were intensively inspected for the presence of archaeological resources. Because the JBLTP was originally constructed in 1964 and is over 45 years old, it was formally documented on California Department of Parks and Recreation (DPR) 523 forms.

While no archaeological resources were identified within the project area as a result of the archival records search and the site visit, the geoarchaeological review indicates that the project area is highly sensitive for the presence of intact subsurface archaeological deposits. Should archaeological deposits underlie the project, they would likely be located at depths greater than 2 feet, given that geotechnical testing within the project area indicates that the uppermost layer of sediment consists of 2 feet of fill. As such, project-related ground disturbing activities that exceed 2 feet in depth have the potential to significantly impact subsurface archaeological deposits that may qualify as historical resources or unique archaeological resources pursuant to CEQA. Therefore, recommendations to mitigate potential project-related impacts to previously unknown archaeological resources are provided in the *Conclusions and Recommendations* section at the close of this report.

As part of the current project, the JBLTP was evaluated for inclusion in the California Register based on archival research and the information gathered during the site visit. The JBLTP, which consists of multiple buildings, structures, and features associated with the activated sludge method of wastewater treatment, is recommended not eligible for listing in the California Register, and, therefore, does not qualify as a historical resource pursuant to CEQA. No additional work related to the JBLTP as a historical resource is required.

J.B. LATHAM TREATMENT PLANT FACILITY IMPROVEMENTS PACKAGE B FINAL DESIGN

Cultural Resources Assessment Report

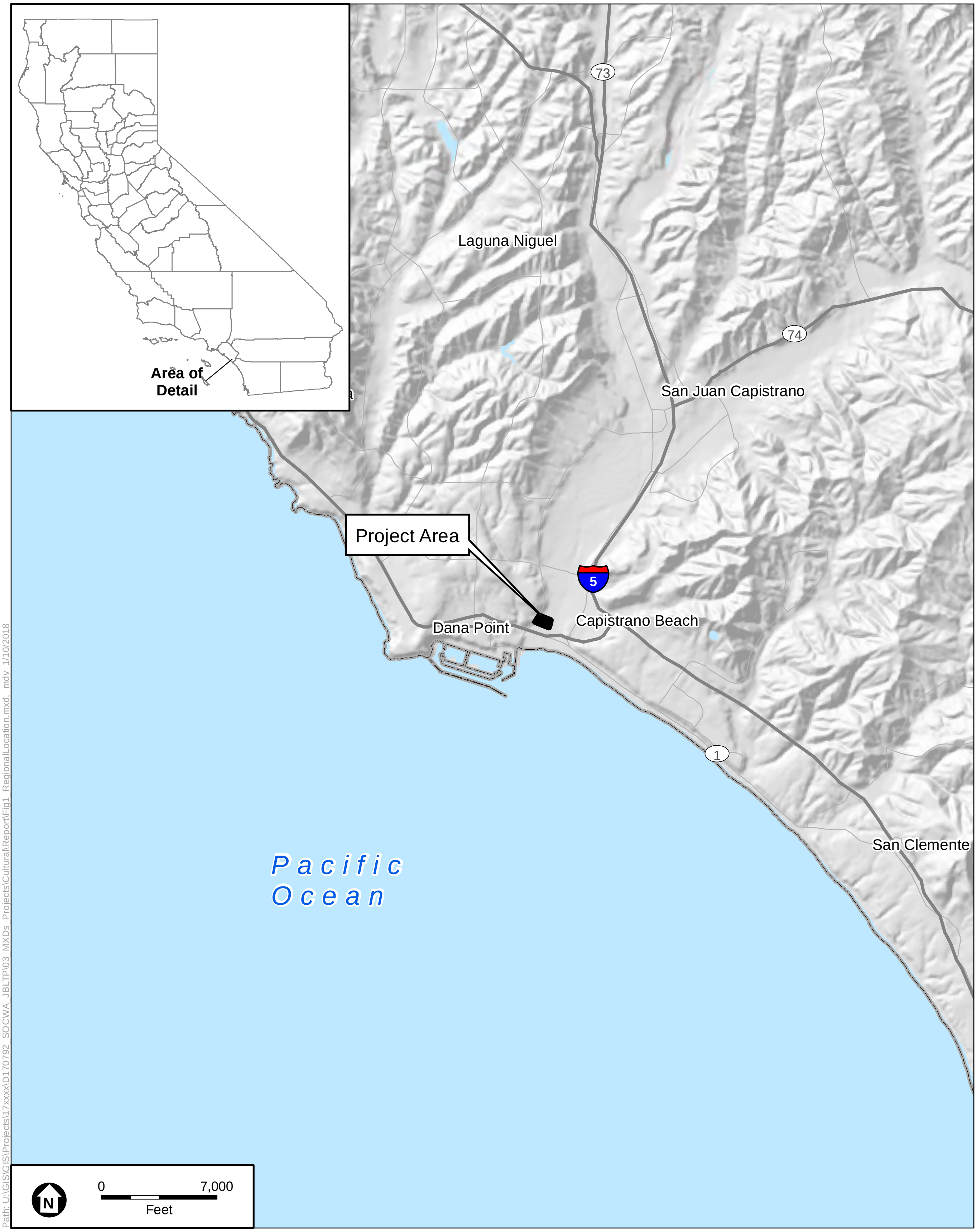
Introduction

The South Orange County Wastewater Authority (SOCWA) has retained Environmental Science Associates (ESA) to conduct a cultural resources assessment for the J.B. Latham Treatment Plant Facility Improvements Package B Final Design(project) in support of an Initial Study/Mitigated Negative Declaration (IS/MND). The project proposes improvements to the existing J.B. Latham Treatment Plant (JBLTP). These improvements include equipment and structure repairs, equipment and structure replacement, new piping, safety-related modifications, and structural demolition. SOCWA is the lead agency pursuant to the California Environmental Quality Act (CEQA).

ESA personnel involved in the preparation of this report are as follows: Michael R. Bever, Ph.D., R.P.A., Project Director and Principal Investigator; Amber Grady, M.A. report author; Michael Vader, B.A, surveyor and report author; Christopher Lockwood, Ph.D., R.P.A., author of the geoarchaeological review; and Max Loder, M.A., surveyor. Resumes of key personnel are included in **Appendix A**.

Project Location

The 8.3-acre project area is located within the City of Dana Point in south Orange County (**Figure 1**). The project area encompasses the JBLTP located at 34156 Del Obispo Street, immediately southeast of the intersection of Del Obispo Street and Village Road (**Figure 2**). Specifically, the project is located in an unsectioned portion of Township 8 South, Range 8 West on the Dana Point USGS 7.5-minute topographic quadrangle (**Figure 3**).



SOURCE: ESRI

JBLTP Facility Improvements Project D170794.00

Figure 1
Reginal Location

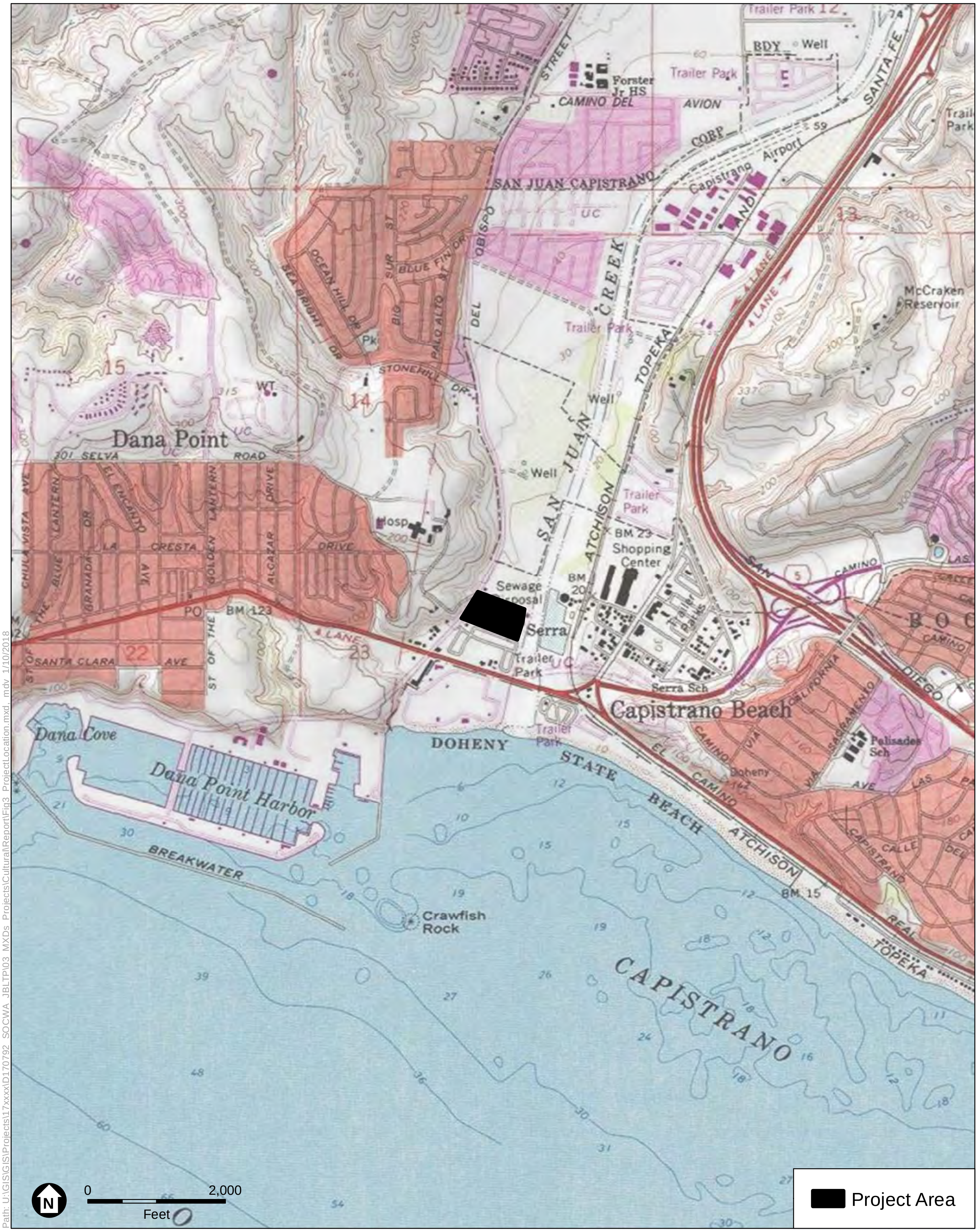
ESA

SOURCE: ESRI

JBLTP Facility Improvements Project . D170792.00

Figure 2
Project Detail

ESA



Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

ESA

Project Description

SOCWA proposes improvements to the JBLTP, which include equipment and structure repairs, equipment and structure replacement, new piping, safety-related modifications, and structural demolition. The following describes in detail the improvements to be implemented:

1. The 24-inch discharge pipeline from the 30-inch by 24-inch reducer section of the Effluent Pump Station will be replaced with a 24-inch by 30-inch increaser section. The replacement includes the 24-inch check valve, actuator, and pressure indicator.
2. Two effluent discharge valves connecting the Chlorine Contact Basin to the San Juan Creek Ocean Outfall will be replaced.
3. The chain and flight assembly and telescoping valves of Secondary Sedimentation Basins 1 – 9 will be replaced, and repairs to damaged concrete on the crosswalks adjacent to the drive unit will be provided.
4. The rotating scum skimmers, telescoping valves, and drain valve assembly of the Secondary Sedimentation Basins 10 – 13 will be replaced.
5. The Primary Effluent Channel's basin protective coating will be replaced, its concrete surface and cracks will be repaired; its slide gates and drop gate assemblies will be replaced; and the diamond plate covers, supporting angles, and grating rebate will be replaced. Work along the channel diamond plate covers includes modification of aeration drain piping and foul air ducting above the deck.
6. The Primary Sedimentation Basins' protective coating will be replaced; their concrete surfaces and cracks will be repaired; and their launders, scum beach, scum skimmers, and basin and hatch covers will be replaced. All new electrical conduits (includes power supply to scum skimmer drives, basin lights, and power receptacles) will be rerouted from the north side of the Primary Sedimentation Basins, along the east wall of the Basins through the Primary Sludge Valve Tunnel, to the motor control center in the Blower Room.
7. The Plant 2 Influent Channel's lining, gates, rebate, and diamond plates will be replaced. The covers of the Primary Sedimentation Basin will be temporarily removed during construction and the covers will be restored after the completion of the improvement at the Plant 2 Influent Channel.
8. The Plant 1 Primary Influent Channel's basin protective coating will be replaced; its concrete surface and cracks will be repaired; and its inlet gates, diamond plate covers, and grating rebate will be replaced.
9. Various structures within the Liquids Facility and Solids Facility portions of the JBLTP will include modifications to roofs, hatch-skylight, fixed ladders, and handrails.
10. The metal structures of the Thickening and Digestion System are known to have structural defects due to corrosion. Corrosion repairs would include structural patching, sandblasting, and recoating the interior of the Thickening and Digestion System. Improvements would also include upgrading the dissolution tank, recirculation pump, compressor, thicken waste activated sludge pumps, aboveground piping, and valves.
11. The existing piping of the Centrate Drainage Pump runs between the Energy Recovery Building and Plant 1 Headworks Building. The original drainage line was modified in

2008, however the system is still subject to flow backing up. FIRM shall prepare a conceptual memorandum including the amount of flow to handle the system, pump size, location of pumps, routing of discharge line, pump station control, and power supply. The expected routing and location are as shown in Exhibit 2.

12. Replacement of the existing pumps and control valves within the Digesters 1 and 2 Mixing Systems.
13. Replacement of four heat exchangers and above ground piping.
14. Replacement of indoor boilers and control system.
15. Replacement of the gas monitoring system and lighting and removal and reconstruction of the roof within Digester Control Building ½.
16. Replacement of all HVAC equipment and penetrations through the roof and a reinforced walkway on the roof of Digester Control Building 3/4.
17. The existing lab, which was constructed in the 1960s, has shifted its laboratory function to the Regional Treatment Plant, and the building would be demolished to make space for future improvements.
18. Improvements to the Energy Recovery Building would include a 25-foot-long monorail system on the upper floor of the building to allow storage of equipment.

Setting

Natural Setting

The project area is located on the west side of the San Juan Creek Channel approximately 0.25 miles north of the Channel's outlet into the Pacific Ocean. The project area is comprised of the JBLTP, and is largely paved and built up with industrial facilities associated with water treatment. The project area vicinity is largely developed for residential, recreational, and commercial purposes.

Prehistoric Setting

The chronology of southern California is typically divided into three general time periods: the Early Holocene (9,600 cal B.C. to 5,600 cal B.C.), the Middle Holocene (5,600 cal B.C. to 1,650 cal B.C.), and the Late Holocene (1,650 cal B.C. to cal A.D. 1769). This chronology is manifested in the archaeological record by particular artifacts and burial practices that indicate specific technologies, economic systems, trade networks, and other aspects of culture.

While it is not certain when humans first came to California, their presence in southern California by about 9,600 cal B.C. has been well documented. At Daisy Cave, on San Miguel Island, cultural remains have been radiocarbon dated to between 9,150 and 9,000 cal B.C. (Byrd and Raab 2007). During the Early Holocene (9,600 cal B.C. to 5,600 cal B.C.), the climate of Southern California became warmer and more arid and the human populations, who were represented by small hunter gathers until this point and resided mainly in coastal or inland desert areas, began exploiting a wider range of plant and animal resources (Byrd and Raab 2007).

During the Middle Holocene (5,600 cal B.C. to 1,650 cal B.C.), there is evidence for the processing of acorns for food and a shift toward a more generalized economy. The first confirmed evidence of human occupation in the Los Angeles area is associated with the Millingstone cultures, which appeared in California around 6,000-5,000 cal B.C. (Byrd and Raab 2007; Wallace 1955; Warren 1968). Millingstone cultures were characterized by the collection and processing of plant foods, particularly acorns, and the hunting of a wider variety of game animals (Byrd and Raab 2007; Wallace 1955). Millingstone cultures also established more permanent settlements that were located primarily on the coast and in the vicinity of estuaries, lagoons, lakes, streams, and marshes where a variety of resources, including seeds, fish, shellfish, small mammals, and birds, were exploited. Early Millingstone occupations are typically identified by the presence of handstones (manos) and millingstones (metates), while those Millingstone occupations dating later than approximately 3,000 B.C. contain a mortar and pestle complex as well, signifying the exploitation of acorns in the region.

During the Late Holocene (1,650 cal B.C. to cal A.D. 1769), many aspects of Millingstone culture persisted, but a number of socioeconomic changes occurred (Erlandson 1994; Wallace 1955; Warren 1968). The native populations of southern California were becoming less mobile and populations began to gather in small sedentary villages with satellite resource-gathering camps. Increasing population size necessitated the intensified use of existing terrestrial and marine resources (Erlandson 1994). Evidence indicates that the overexploitation of larger, high-ranked food resources may have led to a shift in subsistence, towards a focus on acquiring greater amounts of smaller resources, such as shellfish and small-seeded plants (Byrd and Raab 2007). Between about A.D. 800 and A.D. 1350, there was an episode of sustained drought, known as the Medieval Climatic Anomaly (MCA) (Jones et al. 1999). While this climatic event did not appear to reduce the human population, it did lead to a change in subsistence strategies in order to deal with the substantial stress on resources. The Late Holocene marks a period in which specialization in labor emerged, trading networks became an increasingly important means by which both utilitarian and non-utilitarian materials were acquired, and travel routes were extended. Trade during this period reached its zenith as asphaltum (tar), seashells, and steatite were traded from Catalina Island (*Pimu* or *Pimugna)* and coastal southern California to the Great Basin. The bow and arrow was introduced sometime after cal A.D. 500, largely replacing the dart and atlatl (Byrd and Raab 2007).

Ethnographic Setting

The project area is located in a region traditionally occupied by the Juaneño, or Acjachemen (pronounced “A-ha-che-men”). The term “Juaneño” is a general term that refers to those Native Americans who were administered by the Spanish at the Mission San Juan Capistrano. Prior to European colonization, Juaneño territory extended from Aliso Creek in the north to San Onofre Creek in the south, and extended from the crest of the Santa Ana Mountains to the east to the Pacific Ocean in the west (Kroeber 1925). The Juaneño have been considered by many scholars to have similar lifeways as their Luiseño neighbors to the north, south, and east.

Like many California tribes, the Juaneño were organized in permanent villages of 50 to 250 individuals and were often located near watercourses and the coast, which allowed for exploitation of fresh water, as well as floral and faunal communities that thrived in those areas. Seasonal camps were established to harvest acorns, gather seeds, and to hunt game in the interior. Marine mammals, fish, and shellfish were also exploited on the coast and goods were traded between other ethnographic groups (Bean and Shipek 1978). The Juaneño subsisted primarily on game animals such as deer, rabbit, jackrabbit, antelope, dove, duck and other bird species. Marine resources utilized included sea mammals, fish, crustaceans, and mollusks (in particular abalone). Acorns were also used and they were considered the most important single food source (Bean and Shipek 1978).

Settlement patterns show that the Juaneño inhabited several distinct ecological zones and village areas were typically concentrated in sheltered coves or canyons, near water sources, in defensive locations and on the sides of slopes in warm thermal zones. The nearest ethnographic villages to the project area include *Toovanga*, *Axatcme*, and *Puttisumna* (O'Neil and Evans, 1980). *Toovanga* was located on the east side of the San Juan Creek outlet, approximately 0.25 miles southwest of the project; *Axatcme* and *Puttisumna* were located on the east and west side of San Juan Creek, respectively, at its confluence with Arroyo Truabuco, approximately 2.25 miles northeast of the project (O'Neil and Evans, 1980).

Historic Setting

Spanish Period (A.D. 1769 – 1821)

Although Spanish explorers made brief visits to the region in 1542 and 1602, sustained European exploration of southern California began in 1769, when Gaspar de Portolá and a small Spanish contingent began their exploratory journey along the California coast from San Diego to Monterey. This was followed in 1776 by the expedition of Father Francisco Garcés (Johnson and Earle 1990). In the late 18th century, the Spanish began establishing missions in California and forcibly relocating and converting native peoples. In 1771, Father Junipero Serra founded the Mission San Juan Capistrano, located approximately 0.75 miles northeast of the project (California Missions Resource Center 2003). Disease and hard labor took a toll on the native population in California; by 1900, the Native Californian population had declined by as much as 90 percent (Cook 1978). In addition, native economies were disrupted, trade routes were interrupted, and native ways of life were significantly altered.

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

Mexican Period (A.D. 1821-1846)

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

Many ranchos continued to be used for cattle grazing by settlers during the Mexican Period. Hides and tallow from cattle became a major export for Californios, many of whom became wealthy and prominent members of society. The Californios led generally easy lives, leaving the hard work to vaqueros and Indian laborers (Pitt 1994; Starr 2007).

American Period (A.D. 1846-present)

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

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

The first transcontinental railroad was completed in 1869, connecting San Francisco with the eastern United States. Newcomers poured into northern California. Southern California experienced a trickle-down effect, as many of these newcomers made their way south. The Southern Pacific Railroad extended this line from San Francisco to Los Angeles in 1876. The second transcontinental line, the Santa Fe, was completed in 1886 and caused a fare war, driving fares to an unprecedented low. Settlers flooded into the region and the demand for real estate skyrocketed. As real estate prices soared, land that had been farmed for decades outlived its agricultural value and was sold to become residential communities. The subdivision of the large ranchos took place during this time (Meyer 1981; McWilliams 1946). During the first three decades of the 20th century, more than two million people moved to Los Angeles County, transforming it from a largely agricultural region into a major metropolitan area.

History of the Project Area

Settlement of Orange County and Dana Point (1889-1920s)

When California became a state in 1850, it was divided into 27 counties. “Over the next six decades, hardly a session of the state legislature went by without a bill introduced to divide, merge, or realign the counties, taking California from its original [27] counties to [58] today” (Brigandi 2013). In 1889, residents of the southern portion of Los Angeles County voted to form their own county. At the time, the state legislature held the authority to form counties and incorporate cities. Attempts to split up Los Angeles County began in 1870, when Max Strobel petitioned for the creation of Anaheim County, complaining that communities in south Los Angeles County were being ignored by their elected county representatives. "It was inconvenient to go all the way to Los Angeles to transact official business; the roads were bad, and the county had not seen fit to build any bridges in the south; and the City of Los Angeles monopolized most of the county offices, making it a veritable case of taxation without representation" (Brigandi 2013). Prior to Strobel's efforts, the area had been sparsely populated. Beginning in 1868, the sale of former ranchos prompted the settlement of several new communities.

Although Strobel's movement to establish Anaheim County failed, additional attempts to establish a new county would follow. In 1871, a new group formed in the community of Gallatin, just outside of Downey. The Gallatin based movement advocated for the creation of Orange County, named for southern California's reputation as a semi-tropical paradise (Brigandi 2013). However, a growing rivalry between the town of Anaheim and the rapidly expanding community of Santa Ana jeopardized the Orange County bill. In 1876, supporters of the new county changed the proposed name to Santa Ana County in order to gain support from Santa Ana community leaders, but the effort failed.

The movement to establish a new county struggled over the next decade. Leaders from Anaheim had been the movement's biggest supporters. However, by 1882 they had turned to oppose separation from Los Angeles County. They would continue to fight the movement to establish a new county until 1889 when a bill to create Orange County was overwhelmingly supported by the public. "Of the 3,009 ballots cast county-wide, 2,509 voted for division and 500 voted against" (Hallan-Gibson 1986). With the new county established, more communities settled the former ranch lands.

The community of Dana Point was first created as a residential and rest resort by the San Juan Point Corporation in the early 1920s (LSA 2014). The corporation laid out a series of residential streets and constructed a handful of buildings; however, within three months the development went bankrupt due to inadequate highway access and water supplies, which resulted in low sales. In 1926 the Dana Point development was re-opened by a group of real estate investors and businessmen called the Dana Point Syndicate. Although a luxuriously planned coastal town was envisioned, only a few dozen residences, one hotel, and a few commercial buildings were constructed before the stock market crash of 1929. Dana Point would remain sparsely settled until the Dana Point Harbor was constructed in the 1960s (Brigandi 2013). In the 1960s, a six-lane highway was constructed through the community to the Dana Point Harbor and connected it with Interstate 5 and Highway 1. Over the next 20 years, community leaders attempted to have Dana Point incorporated as a city within Orange County (LSA 2014). By 1989, once Dana Point was entirely built out, it was incorporated as a City which encompassed portions of Laguna Niguel, Monarch Beach, Monarch Bay, and Capistrano Beach.

Suburbanization of Orange County (1941-1970)

The 1930s brought the Great Depression to Orange County, stunting the community's growth over the course of the decade. By 1940, the county had grown to a population of 130,760 people but still maintained its rural feel. "There were thousands of acres of natural wilderness areas in the Santa Ana Mountains, most of which had become Cleveland National Forrest, miles of open fields, acres of orange groves, and [40] miles of scenic coast" (Hallan-Gibson 1986). It would all begin to change in 1941 when the United States Army began building what would become the Santa Ana Army Air Base (SAAAB), adding thousands of soldiers to the local population.

Initially known as the United States Air Corps Replacement Training Center, SAAAB occupied 400 acres leased to the federal government for one dollar per year (Hallan-Gibson 1986). "The presence of the military meant growth, jobs, and economic revitalization" (Hallan-Gibson 1986). In addition to the economic growth, the military base introduced thousands of soldiers to the mild climate of Southern California. While the base was only open for a few years (1943-1946), it would have a profound impact on the development of the area. Many soldiers who were stationed at SAAAB would return after the war, contributing to the population boom and suburbanization of Orange County in the post-war years.

> *The war changed Orange County forever. New buildings stood where beans had grown; new businesses remained permanent fixtures in downtowns. But the greatest change would come later. The war had brought hundreds of thousands of people into Orange County, however briefly. They had sampled the sunshine and had felt the ocean breezes; they had seen productive fields and growing cities. All around them they saw opportunities for a better life for themselves and their families.* (Hallan-Gibson 1986).

The 1950s would be a decade of unprecedented population growth in Orange County. The post-war boom began in Los Angeles and spread outward as veterans returned to Southern California with their families. By 1960, the population of Orange County had grown to over one million people. The increase in population meant significant residential and commercial development. In 1950, 5,500 residential construction permits were filed in the county. "Five years later, that number had reached nearly 26,000. The total peaked again in 1962, with 33,200 permits issued" (Brigandi 2013). The western portions along the coastline developed rapidly due to the flat open spaces and proximity to Los Angeles. Dozens of new cities were established while older communities expanded by annexing neighboring towns.

Wastewater Treatment Methods and Infrastructure

Wastewater treatment in the United States began to evolve significantly during the late 18th century as cities began to grow. Pit privies and open ditches were replaced by underground sewers, while the treatment of wastewater was mostly through dilution into receiving waters. In Europe, many communities dispersed their wastewater in nearby agricultural fields to serve as fertilizer. "However, water logging became a major problem, and the continuous expansion of the cities made it more difficult to find sufficient land nearby" (Mogens et al. 2008). Experimentation with biological filters using organisms began in the United Kingdom in 1893. The first biological filter in the United States was developed in Madison, Wisconsin in 1901. In 1913, a new method of treatment was developed in England called the activated sludge process. By 1916, the first activated sludge plants were being built throughout the United States in places like San Marcos, Texas; Milwaukee; Wisconsin; and Cleveland, Ohio (Alleman n.d.). Although the activated sludge method of wastewater treatment was the preferred option, patent litigation throughout the 1920s and 1930s stalled its development. Multiple communities throughout the United States were sued over their wastewater treatment plants during this time. "Several existing plants quickly shut down to avoid monetary fines, including the original San Marcos, Texas facility" (Alleman n.d.). However, during the post-war years the activated sludge process would finally become the preferred approach to waste water treatment.

The activated sludge process relies on microorganisms feeding on the contaminants in wastewater. The process results in a high-quality effluent at a low cost. "Other advantages of the activated sludge process are the low construction cost and the relatively small land requirement" (NSFC 2003). Wastewater treatment plants utilizing the activated sludge process consist of multiple components including aeration tanks where biological reactions occur, clarifiers where solids are separated from the water, and a means of collecting the solids. Variations of the activated sludge process include extended aeration, sequencing batch reactors, and oxidation ditches (NSFC 2003).

Clean Water Act of 1972

In 1972, the Federal Government passed the Clean Water Act (CWA), establishing rules regulating the "discharges of pollutants into the waters of the United States and regulating quality standards for surface waters" (EPA 2016a). The CWA was an extension of the Federal Water Pollution Control Act passed in 1948, resulting in the development of wastewater standards for industry and water quality standards for contaminants in surface waters. "All waters should be protected for recreational uses in or on the water and for the preservation and propagation of desirable species of aquatic life" (George 2008). The CWA also provided local governments with the funding needed to meet the new requirements. The Construction and renovation frenzy that ensued was the largest public works project in the county to date. By its completion, the United States had 16,000 sewage treatment plants and an improved sewage treatment process (EPA 2016b). While the CWA prevented the discharge of pollutants in navigable waters, a special permit could be obtained. In 1973, the Environmental Protection Agency issued the first wastewater discharge permit to the community of Riverton, Illinois. "The treatment system used by Riverton is a modified activated sludge secondary treatment system using the contact stabilization process. The plant's effluent is chlorinated before being discharged to the river" (EPA 2016b). Overtime, more municipalities would join Riverton as permit holders. However, Congress passed the Ocean Dumping Ban Act in 1989 forcing coastal communities to develop new methods for disposing of their sludge (George 2008).

J.B. Latham Treatment Plant

Originally known as the Dana Point Sanitary District Sewage Treatment Plant, construction of the JBLTP followed the approval of a $350,000 bond issue in 1957 (Los Angeles Times 1957). In August 1958, contracts were awarded to three firms. William H. Schallock of Bakersfield would construct the treatment plant and provide all equipment and accessories; Dorfman Construction Co. of Los Angeles would construct the interceptor sewers and a segment of the outfall trunk; and Macco Corp. of Paramount would construct the ocean outfall lines (Los Angeles Times 1958). The first portion of the JBLTP was constructed between 1958 and 1964 as a 1 million gallons per day (MGD) secondary treatment plant with aerobic digestion and solar drying in sludge beds. In 1976, the plant was dedicated to J.B. Latham, a former chairman of the South East Regional Reclamation Authority, an antecedent to the present-day SOCWA (Los Angeles Times 1976).

After its initial construction in 1964, the JBLTP underwent additional phases of expansion. Key expansions within the plant are listed by year below:

- 1971: First two anaerobic digesters were constructed. Centrifuges were installed outdoors for solids dewatering.
- 1974: Third and fourth digesters were constructed. Dissolved air flotation system was added.
- 1978: West (4MGD) plant was constructed.
- 1985: Energy Recovery Building was constructed to house dewatering equipment, sludge-hauling truck loading bay, cogeneration equipment and maintenance shop.
- 1989: Aeration blower driven by digester gas powered engine was installed in the Energy Recovery Building. The hot water waste stream was used to heat the digesters. Aeration basin diffusers were replaced.
- 1999: First centrifuge was installed in the Energy Recovery Building.
- 2000: Motor Control Center was constructed.
- 2006: Digesters 1 and 2 were upgraded, which included replacement of metallic covers with steel domes and replacement of sludge mixing systems with pump mixing systems.
- 2012: Structural rehabilitation of Digester No.3 occurred.

Regulatory Framework

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

State

California Environmental Quality Act

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

The *CEQA Guidelines* (Title 14 California Code of Regulations [CCR] Section 15064.5) recognize that historical resources include: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (California Register); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

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

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

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

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

A. Convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

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

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

In general, a project that complies with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Standards) (Weeks and Grimer, 1995) is considered to have mitigated its impacts to historical resources to a less-than-significant level (*CEQA Guidelines* Section 15064.5(b)(3)).

California Register of Historical Resources

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

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

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

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

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

- California properties listed on the National Register and those formally determined eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and,

- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

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

California Health and Safety Code Section 7050.5

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

California Public Resources Code Section 5097.98

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

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

Assembly Bill 52 and Related Public Resources Code Sections

Assembly Bill (AB) 52 was approved by California State Governor Edmund Gerry “Jerry” Brown, Jr. on September 25, 2014. The act amended California PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation (NOP) or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as tribal cultural resources. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the CEQA Guidelines, which was approved by the Office of Administrative Law on September 27, 2016.

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

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

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

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

Local

City of Dana Point General Plan

The City of Dana Point's General Plan, Conservation/Open Space Element (1991), contains the following cultural resources goals and policies relevant to this project:

> **Goal 8:** Encourage the preservation of significant historical or culturally significant buildings, sites or features within the community.
>
> > **Policy 8.1:** Require reasonable mitigation measures where development may affect historical, archaeological or paleontological resources. (Coastal Act/30244, 30250)
> >
> > **Policy 8.2:** Retain and protect resources of significant historical, archaeological, or paleontological value for education, visitor-serving, and scientific purposes. (Coastal Act/30244, 30250, 30253).
> >
> > **Policy 8.3:** Development adjacent to a place, structure or object found to be of historic significance should be designed so that the uses permitted and the architectural design will protect the visual setting of the historical site. (Coastal Act/30250).
> >
> > **Policy 8.4:** Develop and maintain a cultural resource inventory.

In addition, the Conservation/Open Space Element contains the following conservation measure relevant to cultural resources:

> *Archaeological and biological surveys shall be required for any development projects on lands identified in this Element as potentially paleontologically, historically or biologically sensitive. Mitigation measures shall be developed and implemented to mitigate any significant impacts.*

Archival Research

SCCIC Records Search

A records search for the project was conducted on January 17, 2018, by staff at the California Historical Resources Information System (CHRIS) South Central Coastal Information Center (SCCIC) housed at California State University, Fullerton. The records search included a review of all recorded archaeological resources and previous studies within the project area, as well as a 0.5-mile radius around the project area. The records search also included a review of historic architectural resources within the project area, as well as a 0.25-mile radius around the project area.

Previous Cultural Resources Investigations

The records search results indicate that 42 cultural resources studies have been conducted within a 0.5-mile radius of the project (**Table 1**). Approximately 75 percent of the 0.5-mile records search radius has been included in previous cultural resources surveys. Of the 42 previous studies, eight (OC-00076, -00536, -01172, -01178, -01204, -01434, -03765, -03826) overlap the project. The entirety of the project area has been included in previous cultural resources studies.

TABLE 1
PREVIOUS CULTURAL RESOURCES INVESTIGATIONS

Author	SCCIC # (OC-)	Title	Date
Arrington, Cindy and Nancy Sikes	03373	*Cultural Resources Final Report of Monitoring and Findings for the Qwest network Construction Project State of California: Volumes I and II*	2006
Brechbiel, Brant A.	01739	*Cultural Resources Survey Report for a Pacific Bell Mobile Services Telecommunications Facility: Cm 077-35 in the City of Dana Point, California*	1997
Conkling, Steven W. and Debora K. B. Mclean	01616	*An Evaluation of the Dolph House, 34000 Capistrano by the Sea, Dana Point, Orange County, California*	1997
Cooper, John	00947	*Cultural and Paleontological Surveys of the Seastar Property (Tract 13191), Dana Point, Orange County, California*	1989
Cooper, John and Vicki Mason	00973	*Cultural Resources and Paleontological Surveys of Hampton Hills, Track 13785 Dana Point, Orange County, California*	1989
Cottrell, Marie G.	02317	*Letter Report*	1976
Demcak, Carol	03826*	*Report of Cultural Resources assessment for Two Proposed MNWD Pipelines, Component A (Mission Viejo) and Component B(Dana Point), South Orange County, California*	2009
Demcak, Carol R.	01172*	*Cultural Resources Assessment for the Serra Reclaimed Water Project Facilities, South Orange County, California*	1991
Demcak, Carol R.	01178*	*Boundaries of the Ari Survey in 1975*	1991
Demcak, Carol R. and Stephen R. Van Wormer	01204*	*Archaeological Investigations at CA-ORA-27a, CA-ORA-882, CA-ORA-1042, and CA-ORA-870; Chiquita Canyon Water Reclamation Plant Project, South Orange County, California*	1987
Desautels, Roger J.	00061	*Archaeological Survey Report on Parcel 35 - Tract #932*	1976
Desautels, Roger J.	00076*	*Archaeological Survey Report on Parcel 2 of a Portion of the Rango Pg's 119 & 119 of Papents Records of Los Angeles County*	1976
Desautels, Roger J.	00122	*Archaeological Report on Two Parcels of Land Located in the Dana Point Area of the County of Orange*	1976
Desautels, Roger J.	00166	*Archaeological Survey Report on Lot 14 - Bloc 7 - Tract 862, Dana Point Orange County, California*	1977
Desautels, Roger J.	00499	*Archaeological Survey Report on a 10+ Acre Parcel of Land in the Dana Point Area of the county of Orange*	1980
Desautels, Roger J.	00636	*Cultural Resources Report on the Proposed Extension of Stonehill Drive, San Juan Capistrano, County of Orange*	1981
Desautels, Roger J.	02527	*Dana Bluffs, Ltd. Tentative Tract 7901*	1973
Drover, Christopher	00536*	*City of San Juan Capistrano General Plan Program, Historic/Archaeological Element*	1974

Author	SCCIC # (OC-)	Title	Date
Duke, Curt	02874	*Cultural Resource Assessment City of Dana Point Salt Creek Storm Drain Treatment Facility, Orange County, California*	2002
Duke, Curt	02875	*Cultural Resources Assessment City of Dana Point north Creek Urban Runoff Diversion Project, Orange County, California*	2002
Flynn, Chris	04223	*Notification of Finding of No Adverse Effect with Standard Conditions for the Bridge Deck Maintenance and Sealing at 30 Locations Throughout Orange County, California*	2011
Hasleton, Frank	04331	*Draft Environmental Impact Report Volume I, 34202 Del Obispo Street Project City of Dana Point*	2014
Lichtenstein, Robert J., Barry a Price, and David H. Price	03765*	*Cultural Resources Inventory and Site Assessment for the Proposed San Juan Capistrano Non-Domestic/Recycled Water Master Plan Update, Orange County, California*	2009
Mason, Roger D.	02873	*Cultural Resources Records Search and Reconnaissance Survey Report for the Dana Point Harbor Revitalization Project City of Dana Point, Orange County*	2003
Maxon, Patrick O.	01684	*Archaeological Survey and Impact Assessment of the Capistrano Beach Water District Stonehill Road Right of Way Acquisition*	1995
Maxon, Patrick O.	01434*	*Archaeological Survey and Impact Assessment of the Proposed Upgrade to the Capistrano Beach Water District Waste Water Treatment Facility*	1995
Maxon, Patrick O.	01695	*Cultural Resources Reconnaissance and Impact Assessment of the Proposed Capistrano Beach Water District Grading and Flood Control Project*	1998
O'Neil, Stephen	04193	*Phase I Cultural Resources Inventory for the Doheny Hotel Project, The City of Dana Point, Orange County, California*	2012
Padon, Beth	01850	*Archaeological and Paleontological Archival Review for the Capistrano by the Sea Project*	1998
Pierson, Larry, Shiner, Gerald, and Slater, Richard	04082	*California Outer Continental Shelf, Archaeological Resource Study: Morro Bay to Mexican Border, Final Report*	1987
Price, Barry A. and David H. Price	03390	*Cultural Resources Inventory for the Proposed Non-Domestic/Recycled Water Master Plan Update, City of San Juan Capistrano, Orange County, California*	2007
Romero, John B.	00512	*Orange County, California, Indian Campsites*	1935
Shinn, Juanita R.	01260	*Cultural Resource Assessment of the Capistrano Beach Water Facility, Capistrano Beach, California*	1993
Shinn, Juanita R.	01261	*Archaeological Literature and Records Review for the Capistrano Beach Water Facility, Capistrano Beach, California.*	1993
Shinn, Juanita R.	01298	*Addendum Report of Cultural Resource Assessment for the Capistrano Beach Water Facility, Capistrano Beach, California*	1993
Sinopoli, Cheryl	02872	*Historical Resources Compliance Report for the Relinquishment of a Segment of State Route 1 (PCH) to the City of Dana Point From the Northern City Limits to San Juan Creek, in the City of Dana Po9int, Orange County, California*	2002
Solis, Laurie and Nate Orsi	03832	*Archaeological Monitoring of Doheny State Beach*	2009
Sundberg, Frederick A. and Nancy Whitney-Desautels	01264	*Archaeological Reassessment of the Dana Bluff Development (Tract 11711) Dana Point, California*	1991
Tibbet, Casey, Cheryl Sinopoli, and Glenn G. Moser	03969	*Historic Property Survey Report for proposed widening of Interstate 5 (I-5) between Avenida Pico and San Juan Creek Road*	2010
Unknown	04309	*Draft Initial Study 34202 Del Obispo Street City of Dana Point*	2014

Author	SCCIC # (OC-)	Title	Date
Whitney-Desautels, Nancy A.	00626	*Historical/Paleontological Survey Report on a 10 Acre Parcel Located in the Dana Point Area, County of Orange*	1981
Whitney-Desautels, Nancy A.	00833	*Archaeological Assessment of the Price Club Development near San Juan Capistrano, Orange County, California*	1986

*Indicates study overlaps project area

Previously Recorded Cultural Resources

The records search results indicate that 12 cultural resources have been previously recorded within the 0.5-mile records search radius (**Table 2**). Of these 12 resources, three are prehistoric archaeological sites (P-30-000021, -000188, and -000484), two are historic-period archaeological sites (P-30-001337 and -001767), and seven are historic-period built resources (P-30-176663, -177499, -177553, -177554, -177596, -177597, and -177631). No cultural resources have been previously recorded within the project area.

TABLE 2
PREVIOUSLY RECORDED CULTURAL RESOURCES

Primary # (P-30-)	Permanent Trinomial (CA-ORA-)	Description	Date Recorded
000021	21	Prehistoric archaeological site: inhumations	1949
000188	188	Prehistoric archaeological site: shell midden deposits and artifact scatter	1966
000484	484	Prehistoric archaeological site: midden deposits	Unknown
001337	1337H	Historic-period archaeological site: remnants of Serra railroad siding	1985
001767	1767H	Historic-period archaeological site: remnants of beach sand stabilization control groin	2008
176663	-	Historic-period built resource: Burlington Northern Santa Fe Railroad	
177499	-	Historic-period built resource: Dolph Mansion	1997
177553	-	Historic-period built resource: garage structure constructed in the 1920s	1997
177554	-	Historic-period built resources: bungalow constructed in 1927	1997
177596	-	Historic-period built resource: Dana Villa Inn	1997
177597	-	Historic-period built resource: Woodruff House	1997
177631	-	Historic-period built resource: adobe wall and arched entry to Doheny State Beach constructed in 1935	2003

Geoarchaeological Review

A desktop geoarchaeological review for the project was conducted by ESA geoarchaeologist, Chris Lockwood, Ph.D., R.P.A.

Geology

The project area is located within the Peninsular Ranges Geomorphic Province. The project area is within the lower reach of the broad, north-to-south oriented alluvial valley of San Juan Creek, a perennial stream which is bounded by moderate to steep coastal uplands. These uplands are composed of sedimentary bedrock, which formed under water in a marine environment during the Miocene and Pliocene epochs (Tan 1999). The bedrock, consisting of siltstones, sandstones, and breccia associated with the Capistrano, Niguel, and Monterey Formations, was subsequently uplifted during the early to middle Pleistocene. Today the uplands form steep sea cliffs overlooking the mouth of the creek (Ninyo and Moore 2012).

During the middle and late Pleistocene, the emerged bedrock landforms experienced a series of geomorphic changes. Chief among these was fluvial incision and aggradation. As sea levels lowered during glacial periods, stream channels downcut in an effort to attain base level. Alternately, during warmer interglacial periods, when sea levels were higher, stream channels aggraded resulting in accretion of sediments. Evidence of these processes is seen in the paired and unpaired fluvial terraces located along upstream portions of San Juan Creek at various elevations (Ninyo and Moore, 2012). A remnant of a middle to late Pleistocene floodplain underlies Del Obispo Street, immediately west of the project area.

During the Last Glacial Maximum, global sea levels were up to 400 feet lower than modern conditions (Berger 2008) and the California coastline was well west of its current position. San Juan Creek would have been actively downcutting during this time. However, as conditions warmed at the end of the Pleistocene, sea levels along the southern California coast rose rapidly until approximately 6,000 to 8,000 years ago when the rate of increase slowed (Reynolds and Simms 2015). Since this time, sea levels have risen approximately 20-25 feet to reach modern levels. The net effect of this sea level rise has been aggradation or backfilling along the current floodplain.

Published geologic maps indicate that the project area is underlain by Holocene-aged alluvium deposited along San Juan Creek. During geotechnical investigations, Ninyo and Moore (2012) encountered fill material to a depth of less than 2 feet below overlying alluvium. The fill materials consisted of medium dense, silty sand with gravel. Alluvial deposits beneath the fill extended to a depth of more than 80 feet below surface. The alluvial deposits consisted of interbedded layers of loose to very dense, poorly graded sand with silt, silty sand, and sandy silt, and stiff, silty clay and clayey silt (Ninyo and Moore, 2012).

San Juan Creek was naturally unconfined and, along with the Los Angeles Basin, subject to flooding caused by heavy orographic precipitation as Pacific storms came on land. Massive flooding of the basin occurred in 1862 and again in 1938. Aerial photographs of the mouth of San Juan Creek taken in 1938 show development of multiple, braided distributary channels as the stream scoured and then struggled to transport vast quantities of sediment out to sea. The eastern half of the project area appears affected, while the western half remains vegetated and unaffected by the event.

Soils

Soils within the project area are mapped as Metz loamy sand (NRCS, 2018). The Metz series consists of very deep, somewhat excessively drained soils that formed on floodplains and alluvial fans in parent material derived chiefly from sedimentary rocks (NRCS, 1999). Metz soils are commonly cultivated, and the typically pedon of Metz soil consists of a plowed soil A-horizon overlying a series of differentiated soil C-horizons. The absence of an identified soil B-horizon between the A-horizon and the uppermost C-horizon illustrates that little soil development has occurred, suggesting that only a short amount of time has passed since deposition of the C-horizon. The presence of multiple alluvial C-horizons within 10 feet of ground surface in Metz pedons demonstrates that substantial vertical accretion of the floodplain has occurred in a series of flood events.

Archaeological Sensitivity

Given the greater distance between the project area and the shoreline that would have existed during the Late Pleistocene to Early Holocene when compared with the Middle Holocene and after, archaeological sites from this earlier time period (if present) would likely be oriented towards terrestrial subsistence resources. As sea level continued to rise, however, reliance on marine resources may have become more prevalent. The recent age of deposits underlying the project area, combined with the proximity of the project area to upland, coastal and alluvial environments, which would have supported resources valuable to local inhabitants, suggest a high sensitivity for prehistoric archaeological resources. In addition, the record of floodplain aggradation suggests there has been a series of flood events capable of entombing and preserving archaeological resources. As a result, the project area is considered to have a high sensitivity for multiple, intact, and stratigraphically-distinct prehistoric archaeological components. Within the project area, the western half may retain more integrity than the eastern half.

Sacred Lands File

The NAHC maintains a confidential Sacred Lands File (SLF), which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on January 9, 2018, to request a search of the SLF. The NAHC responded to the request in a letter dated January 10, 2018. The results of the SLF search conducted by the NAHC indicate that no Native American cultural resources are known to be located within the project area (**Appendix B**). SOCWA is conducting consultation with appropriate tribes per requirements of AB 52, and the results of this consultation will be included in the MND.

Historic Maps and Aerial Photographs

Historic topographic maps and aerial photographs were examined 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 1948, 1968, and 1974 Dana Point 7.5-

minute topographic quadrangles. Historic aerial photographs of the project were available for the years 1936, 1937, 1947, 1948, 1952, 1967, 1968, 1980, 1994, 2001, 2008, and 2012 (historicaerials.com 2017, University of California 2018).

The 1948 topographic map shows the project area located approximately halfway between Dana Point to the west and Capistrano Beach to the southeast, and within the San Juan Creek floodplain immediately east of Del Obispo Street. No structures are indicated within the project area, and there are very few structures within the project vicinity on the west side of San Juan Creek with the exception of those associated with Doheny Beach State Park, which are depicted immediately south of the project south of Highway 1. The 1968 and 1974 topographic maps show San Juan Creek was channelized, and that urban development associated with the expansion of Dana Point bounds the western and southern portions of the project area. A number of structures associated with the JBLTP are depicted within the eastern portion of the project.

The 1938, 1946, and 1952 aerial photographs depict the project area located on the east side of Del Obispo Road, with the eastern portion of the project located within the San Juan Creek Channel. With the exception of the Doheny State Beach located to the south of the project, the aerial photographs indicate very little development in the vicinity of the project area. The 1967 and 1980 aerial photographs show that San Juan Creek was channelized and structures associated with the JBLTP are depicted within the project area. The photographs also show that urban development bounds the southern and northern portions of the project. The 1994 and 2012 aerial photographs show a dramatic increase in development around the project area as indicated by a number of new housing subdivision located immediately west of the project on the west side of Del Obispo Road.

In sum, the historic topographic map and aerial photograph review indicates that the project area remained undeveloped and was partially located within the San Juan Creek Channel until the 1960s when the creek was channelized and the JBLTP was constructed. During the 1960s and 1970s urban development associated with the expansion of Dana Point began to envelop the areas to the south of the project, and by the 1990s the project area was completely surrounded by development.

Cultural Resources Survey

Methods

A cultural resources survey of the project area was conducted on January 25, 2018, by cultural resources specialists Max Loder, M.A., and Michael Vader B.A. The survey was aimed at assessing the current conditions of the JBLTP as well as determining the potential for archaeological resources in the project area. The structures and buildings that comprise the JBLTP were photographed. Due to the developed and paved nature of the project area, it was subject to a reconnaissance archaeological resources survey, wherein areas with visible ground surface were intensively inspected for the presence of archaeological resources.

Results

Archaeological Resources

The project area is comprised of paved and landscaped surfaces with no visibly undisturbed areas where surficial archaeological resources would be preserved. Landscaping with visible ground surface is located along the perimeter of the project area, and was subject to intensive investigation to identify the presence of archaeological resources. No archaeological resources were observed as a result of the survey.

Historic Architectural Resources

JBLTP consists of multiple buildings, structures, and features that were constructed over time, allowing the SOCWA to improve its water treatment capabilities. Most of the 55+ buildings, structures, and features located on the property were constructed after 1973 and do not meet the OHP's 45-year threshold for consideration as historical resources, and therefore were not documented. However, 17 buildings, structures, and features constructed between 1964 and 1973 were documented as a result of the survey and are evaluated for listing in the California Register below (**Figure 4**). All of the 55+ buildings, structures, and features located on the property are listed below in **Table 3**. The JBLTP was documented on California Department of Parks and Recreation (DPR) 523 forms (**Appendix C**).

SOURCE: Carollo 2017

JBLTP Facility Improvements Project

Figure 4

Initial and 1971 Expansion Structures

ESA

TABLE 3
SURVEYED FEATURES OF J.B. LATHAM TREATMENT PLANT

Era of Construction	Building Name (Year of Construction)
Initial Development (1964)	Plant 1 Blower Building
	Aeration Tank 1
	Primary Clarifiers 5 and 6
	Laboratory
	Secondary Clarifiers 8 and 9
1971 Expansion	Digesters 3 and 4
	Grit Chamber (Plant 1)
	Primary Clarifiers 3 and 4
	Secondary Clarifiers 4, 5, 6, and 7
	Aeration Tanks 2 and 3
	Sodium Hypochlorite System (portion of)
1974 Expansion	Digesters 1 and 2 (Building 60)
	Aeration Tank 4
	Primary Clarifiers 1 and 2
	Secondary Clarifiers 1, 2, and 3
1978 Expansion	Plant 2 Blower Building
	Grit Chamber (Plant 2)
	Aeration Tanks 5, 6, and 7
	Primary Clarifiers 7, 8, and 9
	Secondary Clarifiers 10, 11, 12, and 13
	Sodium Hypochlorite System (portion of)
1980-present Expansions/Renovations	Solids Building (1985, 2001)
	Plant 2 Headworks Building (1996)
	Operations Building (1994)
	Plant 2 Main Switchgear
	Dana Pt. Metering Structure
	Generator
	Record Storage Building
	Warehouse
	Gate/Entrance
	Abandoned Effluent Pumping Station
	Process Water Pumping Station
	Effluent Pump Switchgear Room
	Effluent Pumping Station
	Sodium Hypochlorite Facilities
	Scum Pump Station
	Plant Drainage Pump Station
	Air Gap Tank
	Plant Drainage Pump Station
	Flood Control Pump Station

J.B. Latham Treatment Plant

The JBLTP consists mainly of aeration tanks, digesters, clarifiers, support buildings, and processing facilities that cover the majority of the subject property. The buildings and structures represent different periods of JBLTP's growth, including its initial period of development in 1964 as well as expansions and alterations that took place in 1971, 1974, 1978, 1985, 1991, 1996, 1997, and 2001.

Initial Development (1958-1964)

When the initial phase of development was completed in 1964, the treatment plant occupied a small portion of the subject property and consisted primarily of the Plant 1 Blower Building, Primary Clarifiers 5 and 6, Secondary Clarifiers 8 and 9, and Aeration Tank 1. These buildings and structures are extant and were documented during the field survey. A plaque on site reads "DANA POINT SANITARY DISTRICT SEWAGE TREATMENT WORKS 1958" and includes a list of the board of directors (presumably from 1958), "CAL ENGINEERS CONSULTING ENGINEERS," and "WM. H. SCHALLOCK, INC. GENERAL CONTACTOR." A historic aerial photograph from 1968 shows what appear to be three open tanks, one additional circular structure (possibly a closed tank), and two or three smaller, roughly square structures at the southwest corner of the subject property (**Figure 5**); these are no longer extant.

Plant 1 Blower Building

The Plant 1 Blower Building was originally constructed in 1964. According to the historic aerial photographs and current site plans of the subject property, substantial development has occurred in the immediate area around the Plant 1 Blower Building with the construction of four additional primary and seven additional secondary clarifiers in 1971 and 1974. This building is utilitarian in style and features few modest architectural details. It is rectangular in plan and is capped by a flat roof with tall parapets. It is constructed of poured-in-place concrete and features horizontal grooves below the roofline, indicating the base of the parapets. The east façade features a pair of vented metal doors below a fixed awning (**Figure 6**).

Aeration Tank 1

Constructed in 1954, Aeration Tank 1 represents one of the earliest structures remaining on the property. Through subsequent additions in the 1970s, there are currently seven aeration tanks. Aeration Tank 1 is the easternmost tank and is adjacent to Plant 1 Blower Building and the Primary and Secondary Clarifiers. Aeration Tank 1 is constructed of poured-in-place concrete and includes metal railings and walkways around the perimeter. The utilitarian design is devoid of architectural embellishment (Figure 6).

SOURCE: Frame Finder, 2018

Figure 5
Aerial View of JBLTP, March 1, 1968

View of Plant 1 Blower Building (view to northwest)

View of Aeration Tanks

SOURCE: ESA, 2018

Figure 6
Survey Photos

Primary Clarifiers (5 and 6)

Primary Clarifiers 5 and 6 were part of the initial construction in 1964. The clarifiers are constructed of poured-in-place concrete and have a rectangular footprint (**Figure 7**).

Secondary Clarifiers (8 and 9)

Secondary Clarifiers 8 and 9 were part of the initial construction in 1964. The clarifiers are constructed of poured-in-place concrete and have a rectangular footprint (Figure 7).

Laboratory Building

The Laboratory Building was constructed in the 1960s, likely part of the initial construction phase. It no longer functions as a laboratory, but as the Regional Treatment Plant (**Figure 8**). The Laboratory Building appears to have been modified with more contemporary stucco and replacement windows. The building is unremarkable architecturally and has no distinct architectural embellishments.

Expansions

Between 1964 and the present, the JBLTP has expanded significantly to accommodate the water treatment needs of the continuously growing population. During this period, SOCWA added a second blower building, six aeration tanks, seven primary clarifiers, 11 secondary clarifiers and several support buildings and structures.

View of Primary Clarifiers (view to northeast with digesters in the background)

View of Secondary Clarifiers

SOURCE: ESA, 2018

Figure 7
Survey Photos

View of Laboratory Building (view to SW)

SOURCE: ESA, 2018

Figure 8
Survey Photos

Significance Evaluation

The JBLTP was evaluated as a historic district for listing in the California Register under Criteria 1-4. It was constructed in 1964 when Orange County was experiencing significant population growth and suburban development. Over time, the JBLTP expanded to accommodate the County's increasing sanitation needs. The JBLTP consists of numerous buildings, structures, and features associated with wastewater treatment, with construction dates ranging between 1964 and 2000s. Of the numerous buildings, structures, and features, five are 50 years old or older and an additional nine meet the OHP's 45-year age threshold for consideration as historical resources. These buildings, structures, and features reflect JBLTP's early phases of development, and while they may lack individual distinction, together they have the potential for consideration as a historic district.

Criterion 1: Events

Under Criterion 1, a resource is eligible if it is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. While JBLTP is associated with a later period of development for Dana Point and south Orange County, it did not play an important role in the initial development of these communities. Orange County was first settled as early as the 1860s and became its own county in 1889. Initial development of the community of Dana Point began in the 1920s, after which time development stalled until the construction of the Dana Point Harbor in the 1960s. The JBLTP was initially constructed in 1958-1964 and is associated with the post-World War II development of Orange County. Between 1950 and 1960, Orange County's population grew to over one million people. Orange County experienced the construction of thousands of tract homes and commercial development. With the increasing population came a need for social and government services, which were met by the rapid construction of civic and institutional facilities like the wastewater treatment plant on the subject property. However, for a resource to be considered eligible under Criterion 1, its association must be significantly involved with the broad patterns of history. The JBLTP was not the first wastewater treatment plant constructed in Orange County, which would be more reflective of earlier settlement and development of Orange County. JBLTP was constructed in the midst of the area's suburbanizing phenomenon and, therefore, its construction does not appear to have stimulated a development trend in the area nor is it representative of a significant pattern of development, but is rather a reaction to an event stimulated by the area's economic growth. Furthermore, several government facilities were constructed throughout Orange County in response to the growing need for services, including fire and police stations, water and power facilities, and new schools. JBLTP did not play a more significant role in the post-war development of the area more than any of these other facilities and therefore, does not possess a significant association to be considered eligible under Criterion 1.

Based on the historical themes related to JBLTP, it does not appear to have a significant association with events in the history of wastewater treatment; with the settlement of Orange County or Dana Point; or with any other significant events contributing to the broad patterns of California's history and cultural heritage. **Therefore, JBLTP is does not appear to be eligible for listing in the California Register under Criterion 1.**

Criterion 2: Significant Persons

Under Criterion 2, a resource is eligible if it is associated with the lives of persons important in our past. Research for JBLTP did not reveal any associations with specific personages significant to national, state, or local history. Research did not identify any other significant figures in history that were associated with the Plant. **Therefore, JBLTP does not appear to be eligible for listing in the California Register under Criterion 2.**

Criterion 3: Design/Construction

Under Criterion 3, a resource is eligible if it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values. JBLTP was initially constructed in 1958-64 and originally consisted of Plant 1 Blower Building, Primary Clarifiers 5 and 6, Secondary Clarifiers 8 and 9, and Aeration Tank 1 as well as a number of tanks and small buildings and structure that are no longer extant. Over time, the Plant added more clarifiers and digesters, as well as support facilities to accommodate the increasing amount of wastewater requiring treatment. The activated sludge method of wastewater treatment was first used in the United States in 1916. However, the method did not gain popularity among municipalities until the post-war era, due to patent litigation throughout the 1920s and 1930s. The activated sludge method quickly became the preferred method of wastewater treatment because the plants were cheap and easy to build. As many communities were experiencing rapid growth, the activated sludge plant was the preferred treatment approach to accommodate growing populations. JBLTP does not appear to be a significant example of the activated sludge plant. It was constructed nearly 50 years after the method was first used in the United States, and there are no primary or secondary historical sources indicating that the facilities located at JBLTP represent any advancements in the technology. JBLTP is a common example of the activated sludge plant and does not embody the distinctive characteristics of a type, period, region, or method of construction. Construction of the initial development of the JBLTP is attributed to general contractor William H. Schallock of Bakersfield, whose other completed projects include installation of water mains, sewer lines, and a water pressure system at the Kern County Airport (1957), construction of roads and tunnels in the Tehachapi Mountains in Kern County (1963), and preparation work for the State Water Project’s California Aqueduct (1964). Schallock retired in 1974 and died the following year at age 60. Research does not indicate that Schallock or his associates were important creative individuals. Research also did not yield information about Cal Engineers or the identity of an architect associated with JBLTP. Furthermore, the plant does not possess high artistic values. **Therefore, JBLTP does not appear to be eligible for listing in the California Register under Criterion 3.**

Criterion 4: Data Potential

Under Criterion 4, a resource is eligible if it has yielded, or may be likely to yield, information important in prehistory or history. While most often applied to archaeological districts and sites, Criterion 4 can also apply to buildings, structures, and objects that contain important information. In order for these types of properties to be eligible under Criterion 4, they themselves must be, or must have been, the principal source of the important information. JBLTP does not appear to yield significant information that would expand our current knowledge or theories of design, methods of construction, operation, or other information that is not already known. **Therefore, JBLTP does not appear to be eligible for listing in the California Register under Criterion 4.**

Integrity

The California Register recognizes a property's integrity through seven aspects or qualities: location, design, setting, materials, workmanship, feeling, and association. Eligible properties should retain several, if not most, of these aspects. The California Register also requires that a resource retain sufficient integrity to convey its significance, and the property must retain the essential physical features that enable it to convey its historical identity. Integrity is based on significance and understanding of why a property is important. Since JBLTP was not identified as significant under any of the applicable national or state criteria, an integrity analysis was not conducted.

Conclusions and Recommendations

Historic Architectural Resources

The JBLTP, which consists of multiple buildings, structures, and features associated with the activated sludge method of wastewater treatment, is recommended not eligible for listing in the California Register under any of the four criteria, and, therefore, does not qualify as a historical resource pursuant to CEQA. No additional work related to the JBLTP as a historical resource is recommended.

Archaeological Resources

No archaeological resources were identified within the project area as a result of the SCCIC records search and the cultural resources site visit. However, the geoarchaeological review indicates that the project area is highly sensitive for the presence of intact subsurface prehistoric archaeological deposits. Should archaeological deposits underlie the project, they would likely be located beneath two feet of fill, as indicated by geotechnical testing conducted within the project area. As such, project-related ground disturbing activities that exceed two feet in depth have the potential to impact subsurface archaeological deposits that may qualify as historical resources or unique archaeological resources pursuant to CEQA. Therefore, recommendations to mitigate potential project-related impacts to previously unknown archaeological resources are provided below.

> **Recommendation #1. Retain Qualified Archaeologist:** Prior to the start of ground-disturbing activities that exceed two feet in depth, SOCWA 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 cultural resources recommendations #2 through #4 below.

> **Recommendation #2. Cultural Resources Sensitivity Training:** Prior to the start of ground-disturbing activities that exceed two feet in depth, 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, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. SOCWA shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

Recommendation #3. Construction: An archaeological monitor (working under the direct supervision of the qualified archaeologist) shall observe all ground-disturbing activities within the project area that exceed a depth of two feet deep. The qualified archaeologist, in coordination with SOCWA, may reduce or discontinue monitoring if it is determined that the possibility of encountering buried archaeological deposits is low based on observations of soil stratigraphy or other factors. Archaeological monitoring shall be conducted by an archaeologist familiar with the types of archaeological resources that could be encountered within the project area. The archaeological monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of a discovery until the qualified archaeologist has evaluated the discovery and determined appropriate treatment (as prescribed below in Recommendation #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 monitoring report that details the results of monitoring. The report shall be submitted to SOCWA. A copy of the final report shall be filed at the SCCIC.

Recommendation #4. Inadvertent Discoveries: In the event of the unanticipated discovery of archaeological materials, SOCWA shall immediately cease all work activities in the area (within approximately 50 feet) of the discovery until it can be evaluated by a qualified archaeologist. Construction shall not resume until the qualified archaeologist has conferred with SOCWA on the significance of the resource.

If it is determined that the discovered archaeological resource constitutes a historical resource or a unique archaeological resource pursuant to CEQA and 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. The treatment plan shall be implemented by the qualified archaeologist in consultation with SOCWA that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource. If the archaeological resource is determined to be Native American then SOCWA shall consult with appropriate Native American representatives in determining treatment for the Native American resources to ensure cultural values ascribed to the resource are considered.

Recommendation #5: If human remains are encountered, all work will halt work in the vicinity (within 100 feet) of the discovery and the Orange County Coroner will be contacted 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 (as amended by AB 2641). The NAHC will designate an MLD for the remains per PRC Section 5097.98. Until the landowner has conferred with the MLD, SOCWA will ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.

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APPENDIX A
Personnel

Michael R. Bever, PhD, RPA

Senior Cultural Resources Specialist

EDUCATION

Ph.D., Anthropology, Southern Methodist University, Dallas

M.A., Anthropology, Southern Methodist University, Dallas

B.A., Anthropology, with honors, History minor, University of California, Davis

23 YEARS EXPERIENCE

PROFESSIONAL CERTIFICATIONS

Register of Professional Archaeologists (RPA), #16583

Secretary of the Interior and Caltrans Qualified as Principal Investigator

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

Riverside County Certification List for Archaeology

40-Hour HAZWOPER Certification

PROFESSIONAL AFFILIATIONS

Society for American Archaeology

Society for California Archaeology

Dr. Michael Bever has over 20 years of experience in archaeology and cultural resources management. He has worked throughout the western United States, with a focus in California. He has experience and specialized training in project management, business development, and cultural resources practice oversight, and has directed projects involving a wide breadth of resource types in compliance with federal and state laws and regulations. Dr. Bever's experience includes all manner of cultural resources studies and documentation for projects both large and small, and he has presented various cultural resources management training courses in both professional and academic settings.

In addition to work in cultural resources management, Dr. Bever has held tenure-track professorships at the University of Texas at Austin and the University of Nevada, Reno. A published expert in the earliest prehistory of North America, he is well-versed in archaeological research design and all aspects of archaeological field and laboratory research.

Relevant Experience

Montezuma Channel Repair, City of San Diego, California. *Cultural Resources Manager.* Dr. Bever oversaw cultural resource studies for the City's channel repair project in Montezuma Channel. The project requires an evaluation for substantial conformance with the City's Master Maintenance Program, derived from a program-level EIR and meeting the City's Historical Resources Guidelines. Cultural resource studies included a records search, field survey, and preparation of an Individual Historic Assessment (IAH).

Cogswell Reservoir Sediment Removal Project, Los Angeles National Forest, Los Angeles County, CA. *Cultural Resources Manager.* ESA retained by the County of Los Angeles Department of Public Works, Water Resources Division to prepare a Cultural Resources Assessment in support of the Cogswell Reservoir Sediment Removal Project. The purpose of the project is to remove debris and sediment from Cogswell Reservoir associated with the August 26, 2009 Station Fire in the Angeles National Forest. Dr. Bever managed the cultural resources study, which involved coordination with the United States Forest Service, preparation of a work plan and Archaeological Resources Protection Act permit, field survey, and preparation of a Cultural Resources Assessment Report meeting both CEQA and Section 106 of the National Historic Preservation Act requirements.

MFRO Facility for Agriculture Project, City of Escondido, CA. *Cultural Resources Manager*. The City of Escondido is preparing in IS/MND for the Membrane Filtration/Reverse Osmosis (MFRO) Facility for Agriculture Project for the City of Escondido. Using funds from the State Water Resources Control Board (SWRCB)

State Revolving Fund, which requires compliance with Section 106 of the National Historic Preservation Act, the project would include construction of an MFRO facility for agriculture reuse. The MFRO Facility would provide advanced treatment for Title 22 quality reuse water. The water would then be sent through the existing non-potable reuse water/agriculture pipelines and distributed to growers. ESA conducted a Phase I cultural resources study and a geoarchaeological sensitivity study for the project, and Dr. Bever is currently directing an Extended Phase I study, at the request of SWRCB and the California State SHPO.

Los Angeles County Sanitation District, Joint Water Pollution Control Plant Biogas Conditioning System Project, Carson, CA. *Cultural Resources Manager.* ESA prepared the Mitigated Negative Declaration (MND) for the Joint Water Pollution Control Plant (JWPCP) Biogas Conditioning System project. The MND evaluated the installation of a biogas conditioning system and associated pipelines (biogas supply pipeline, tail gas return pipeline, drain water pipeline) within the JWPCP and across a public roadway. Dr. Bever directed the cultural resources studies for this fast-paced MND preparation, which involved a Phase 1 archaeological study with a site survey, and participation in Native American consultation with the District.

Ballona Wetlands Restoration Project, California State Coastal Conservancy, Los Angeles, CA. *Cultural Resources Manager*. The historical Ballona Wetlands, which is now reduced to 577 acres (and only 12 percent of that is tidally influenced), once occupied a 2,000-acre expanse of critical coastal habitat and included some of the most diverse wetland habitat types in the Los Angeles Basin due to the presence of both freshwater and saltwater environments. The Ballona Wetlands Restoration EIR/EIS evaluates four alternatives that include the following key elements: ecosystem restoration, flood and stormwater management (by allowing a naturalized, rather than concrete-lined, Ballona Creek), public access improvements, infrastructure and utility modifications (including abandonment and relocation of Southern California Gas Company monitoring wells and pipelines), a full-scale implementation and restoration program, a state-of-the-art monitoring and adaptive management program, and ongoing operations and maintenance activities. Over more than seven years, Dr. Bever has directed or overseen aspects of the cultural resources studies for the Ballona Wetlands Restoration Project. The cultural resources component of the project has involved field survey and excavation, archival research, geoarchaeological assessment, SHPO and USACE outreach, and reporting to document cultural resources in the area. The area is considered exceptionally sensitive to local Native American groups and extensive consultation and coordination with local tribes and the California Department of Parks and Recreation has been essential. Documents, including cultural resources technical studies and an EIR/EIS, were prepared for the California Coastal Conservancy and the USACE.

Amber L. Grady

Senior Architectural Historian

EDUCATION

M.A., Historic Preservation, Savannah College of Art & Design, Savannah, GA

B.A., Interior Design with a minor in Art History, California State University, Chico

16 YEARS EXPERIENCE

PROFESSIONAL AFFILIATIONS

California Preservation Foundation

Society of Architectural Historians

Amber Grady is an expert in NEPA, CEQA, and Section 106 of the NHPA compliance with over 16 years of experience in cultural resources management. Amber has extensive experience in California architectural history with an emphasis on northern California. Her cultural resources management experience includes archival research, historic building and structure surveys and evaluations, and cultural resources documentation for NEPA and CEQA projects ranging from single building evaluations to district-wide surveys. Previously, Amber served as the Cultural Resources Manager for the State of California for the California Army National Guard (CA ARNG). At the CA ARNG Amber managed the cultural resources program, which included the management of over 100 archaeological sites as well as the State's historic armories and supervising three full time archaeologists. Prior to joining the CA ARNG Amber worked for the California Energy Commission as an Architectural Historian where she worked on a variety of energy project including one of the largest solar projects in California as the Cultural Resources lead. Prior to that Amber worked as an Architectural Historian and Project Manager foranother employer on a variety of projects throughout California and Nevada completing project for City's, school districts, and private sector clients. Amber began her career in the public sector working as a planner for both the County of Santa Clara and the City and County of San Francisco. Amber's expertise includes all phases of environmental compliance from documentation to compliance during construction.

Relevant Experience

California Department of Water Resources (DWR), Oroville Spillway Emergency Repair Project, Oroville Dam, CA. *Senior Architectural Historian.* Amber and her staff have been assisting DWR with Section 106 compliance for built environment resources for the emergency spillway repair project. She routinely advises DWR staff on portions of the project that affect contributing elements of the National Register eligible Oroville Division Historic District, and preparing Finding of Effect documents to ensure construction is not delayed. The project is ongoing and expected to extend through 2017.

Los Angeles Unified School District (LAUSD) President Elementary School Historic Resources Evaluation, Harbor City, CA. *Senior Architectural Historian*. As Senior Architectural Historian, Amber has led ESA staff in several historic resource evaluations for the LAUSD, all of which occurred prior to modernization efforts. This includes a campus in Harbor City, the 6th Avenue Elementary School, and the Thomas Jefferson High School. Part of this work involves consulting with LAUSD and their architectural/construction team to design their project to avoid impacts to the character-defining features of important resources. Amber also translates her technical documents into support text for Environmental Compliance documents.

Chris Lockwood, PhD, RPA

Principal Investigator & Geoarchaeologist

EDUCATION

Ph.D., Anthropology (Archaeology focus), University of Washington

M.A., Anthropology (Archaeology focus), University of Washington

Postgraduate work, Anthropology, Texas A&M University

B.A., History, Washington University in St. Louis

19 YEARS OF EXPERIENCE

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists

HAZWOPER-certified

Chris has 19 years of experience in archaeology and cultural resources in a broad range of environments including coastal, fluvial, lacustrine, and urban settings. Chris has managed cultural resources projects ranging in scope from reconnaissance surveys to data recovery to construction monitoring, designs fieldwork methodologies, and formulates Unanticipated Discovery Plans (UDP) and Archaeological Resources Monitoring and Treatment Plans (ARMTPs), and assists clients with cultural resources avoidance and mitigation. As a geoarchaeologist, Chris has used his dual training in earth sciences and anthropology to assess project risks for cultural resources and to evaluate project alternatives. Chris exceeds the Secretary of the Interior's Standards for Professional Archaeologist and is a Registered Professional Archaeologist.

Relevant Experience

Ballona Wetland Restoration, Los Angeles, CA. *Role.* The historical Ballona Wetlands, which is now reduced to 577 acres (and only 12 percent of that is tidally influenced), once occupied a 2,000-acre expanse of critical coastal habitat and included some of the most diverse wetland habitat types in the Los Angeles Basin due to the presence of both freshwater and saltwater environments. The Ballona Wetlands Restoration EIR/EIS evaluates seven alternatives that include the following key elements: ecosystem restoration, flood and stormwater management (by allowing a naturalized, rather than concrete-lined, Ballona Creek), public access improvements, infrastructure and utility modifications (including abandonment and relocation of Southern California Gas Company monitoring wells and pipelines), a full-scale implementation and construction program, a state-of-the-art monitoring and adaptive management program, and ongoing operations and maintenance activities. In addition, the Annenberg Foundation is proposing a visitor center on the site that would be created with the goal of promoting respect, appreciation, and stewardship of the natural ecosystems of the Ballona Reserve, Santa Monica Bay, and the greater Los Angeles urban ecosystem. The Annenberg Foundation, in partnership with CDFW, would design, construct, maintain, and operate the visitor center.

Eagle Harbor Beach Mains Replacement Project, Bainbridge Island, WA. *Role.* ESA served as the environmental documentation and permitting lead for the Eagle Harbor Beach Mains Replacement project for the City of Bainbridge Island. The project consisted of failing sewer mains located along the beach in Eagle Harbor. ESA's staff facilitated an expedited permitting and approval process so the project could be constructed during the allowed work window. ESA's staff authored the SEPA checklist for the project, and prepared the federal, state, and local permit applications, including Section 404, 401, hydraulic project approval, shoreline substantial development, and NPDES Construction Stormwater General permit.

Redmond Way Stormwater Improvement Project, Redmond, WA. *Cultural Resources Project Manager.* Chris implemented a monitoring plan developed by the Corps of Engineers for a new stormwater facility in portion of downtown Redmond with a very high risk for archaeological resources. Chris supervised day-to-day archaeological monitoring during construction. Based on observations made by monitors, Chris worked with the City and Corps to reduce the level of effort in several portions of the project area. This approach kept the project under budget.

King County Lake Hills/NW Lake Sammamish Interceptor Sewer Upgrade Project, King County, WA. *Cultural Resources Discipline Lead.* Chris is leading cultural resources review for King County's expansion of sewer capacity in the Redmond and Bellevue area. Chris oversaw preparation of a comprehensive cultural resource existing conditions report. As part of a multidisciplinary design team, Chris developed project risk criteria, estimated costs associated with discovery and mitigation of cultural resources, and evaluated a series of project alternatives. As the project advances, Chris is working with regulators and stakeholders to formulate and implement cultural resources assessments in accordance with Section 106.

West Point Office Annex, King County Wastewater Treatment Division, WA. *Principal Investigator*. Chris managed archaeological monitoring during construction of a new office annex at the West Point Treatment Plan. Work was conducted under the provisions of a Washington State Archaeological Excavation Permit because construction occurred above the inferred location of deposits associated with a previously recorded, National Register of Historic Places-eligible prehistoric archaeological site. Prior to construction, Chris drafted an Archaeological Resources Monitoring Plan for the project and provided archaeological training to project managers and supervisors. Chris then coordinated with agency and construction personnel to accommodate changes in project schedule and sequencing to maintain appropriate levels of archaeological staffing throughout the entire project. Chris supervised monitoring staff, performed monitoring, conducted stratigraphic analysis, and coauthored technical memorandum of monitoring results.

Seattle Public Utilities Broadview Sewer and Drainage Improvements, Seattle, WA. *Geoarchaeologist.* Chris assisted with planning for the improvements to SPU's Broadview sewer basin by using geological and cultural archives and maps to assess project risks for cultural resources. Chris's analysis outlined specific cultural resources concerns for each sub-basin within the greater sewer basin. Chris collaborated with ESA's GIS department to produce a map integrating data from Washington's archaeological Statewide Predictive Model with SPU's existing sewer and drainage infrastructure.

King County Wastewater, West Point Screenings Archaeological Monitoring. *Principal Investigator*. For this project, Chris oversaw long-term monitoring of work in close proximity to a prominent 4,200 year old archaeological site. Work involved coordinating field staff, developing monitoring methodology, and preparing technical memoranda.

Michael Vader

Senior Associate

EDUCATION

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

12 YEARS EXPERIENCE

PROFESSIONAL AFFILIATIONS

Society for California Archaeology (SCA)

Society for American Archaeology (SAA)

Pacific Coast Archaeological Society (PCAS)

SPECIALIZED EXPERIENCE

Analysis of faunal remains including fish and shellfish species

Archaeological Monitoring

Paleontological Monitoring

Environmental Compliance Monitoring

Human osteology and bioarchaeology

Michael is cultural resources specialist with experience working on survey, data recovery, and monitoring projects. Michael has experience with project management, has led crews on multiple surveys and excavations, and is familiar with environmental compliance documents. He has worked on a variety of energy and water infrastructure projects throughout California, including projects in Riverside, San Diego, Imperial, San Bernardino, Los Angeles, Orange, Santa Barbara, San Luis Obispo, Kern, Fresno, Madera, and Inyo Counties, as well as in Clark County Nevada. Michael regularly works as part of a team, coordinating with field staff and agency leads.

Relevant Experience

DWR Oroville Dam Emergency Repairs Cultural Resources Monitoring, Oroville, Butte County, CA. *Archaeologist.* ESA was retained by the California Department of Water Resources to conduct cultural resource monitoring for the emergencey repairs to the Oroville Dam spillway. Michael managed a team of 10-12 monitors to ensure that all ground disturbing activities associated with the emergency repairs was appropriately monitored, and coordinated with DWR and contractor staff regarding level of effort needed to cover all monitoring activities.

Cogswell Reservoir Sedmiment Removal Project, Los Angeles National Forest, Los Angeles County, CA. *Archaeologist.* ESA retained by the County of Los Angeles Department of Public Works, Water Resources Division to prepare a Cultural Resources Assessment in support of the Cogswell Reservoir Sediment Removal Project. The purpose of the project is to remove debris and sediment from Cogswell Reservoir associated with the August 26, 2009 Station Fire in the Angeles National Forest . Michael prepared the coordinated with United States Forest Service, prepared the work plan, led the survey, and prepared the Cultural Resources Assessment Report for the project.

DWR Pyramid Lake Maintenance Projects, Angeles National Forest, Los Angeles County, CA. *Archaeologist*. ESA was retained by the California Department of Water Resources to conduct a cultural resources study for improvements and repairs at three locations within the Pyramid Lake area in the Angeles National Forest. The Project includes the installation of a warning siren north of Frenchman's Flat Day Use Area, repairs to an existing bathroom at the Emigrant Landing swim beach, and revegetation at Los Alamos Campground Loops 3 and 4. Michael coordinated the cultural resources survey and prepared the archaeological resources report.

Pacific Beach Vector Habitat Remediation Project, San Diego, San Deigo County, CA. *Archaeologist*. The City of San Diego retained ESA to prepare an ISMND for the Pacific Beach Vector Habitat Remediation Project as part of the

County of San Diego Vector Habitat Remediation Program. The City is proposing this area for mitigation under the County Department of Environmental Health Vector Habitat Remediation Program because it is a known mosquito breeding habitat. The purpose of the Project is to decrease favorable habitat for mosquitos, improve the water quality in the Kendall Frost Mission Bay Marsh Reserve, and to create tidal marsh, transitional zone and upland habitat by improving the Noyes Street storm drain outfall which drains and discharges into the Reserve. Michael led the cultural resources survey and prepared the Phase I cultural resources assessment report in support of the ISMND.

San Jacinto Valley Enhanced Recharge and Recovery Program, Riverside County, CA. *Archaeologist*. ESA was retained by the Eastern Municipal Water District to prepare a Cultural Resources Study in support of an Environmental Impact Report for the proposed San Jacinto Valley Enhanced Recharge and Recovery Program. The Project would aid in supplementing current and future water supplies by recharging imported water and local supplies in the local groundwater basin. The Project would include development of recharge facilities, storm water capture facilities, production and monitoring wells, potable and raw water pipelines, and other conveyance facilities and appurtenances. Michael led the cultural resources survey and prepared the Phase I cultural resources study report.

Sorrento Valley Channel Restoration Project, San Diego, CA. *Archaeologist.* ESA has been retained by the City of San Diego to prepare an EIR for the Sorrento/Los Peñasquitos Restoration Program. The Project consists of the restoration of the historic coastal salt marsh habitat within the Los Peñasquitos Lagoon to be completed in two phases. Michael assisted with the cultural resources survey and prepared the Phase I cultural resources assessment in support of the EIR.

Sterling Natural Resource Center Project. Highland, CA. *Archaeologist*. The San Bernardino Valley Municipal Water District retained ESA to prepare a Phase I Cultural Resources Study in support of an Environmental Impact Report for the proposed Sterling Natural Resource Center Project. The project includes the construction a new treatment facility in the City of Highland to treat locally generated wastewater for beneficial reuse in the upper Santa Ana River watershed. Michael led the Phase I survey of the project area and assisted in the preparation of the cultural resources study.

City of Escondido MFRO Facility for Agriculture Project. Escondido, CA. *Archaeologist.* The City of Escondido retained ESA to prepare an ISMND for the proposed Micro Filtration Reverse Osmosis Facility (MFRO Facility) for Agriculture Project .The Project includes the construction of an MFRO Facility, to provide advanced treatment for Title 22 quality reuse water. In support of the ISMND, ESA conducted a Phase I cultural resources study that complied with CEQA-Plus guidelines. Michael conducted the Phase I survey of the project area, and prepared the Phase I cultural resources study and IS/MND.

APPENDIX B

Sacred Lands File Results

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

January 10, 2018

Michael Vader
ES Associates, Inc.

Sent by E-mail: mvader@esassoc.com

RE: Proposed J. B. Latham Treatment Plant Facility Improvements Project, City of Dana Point; Dana Point USGS Quadrangle, Orange County, California

Dear Mr. Vader:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

Attached is a list of tribes culturally affiliated to the project area. I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

Native American Heritage Commission
Native American Contact List
Orange County
1/10/2018

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

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

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

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

Juaneno Band of Mission Indians
Sonia Johnston, Chairperson
P.O. Box 25628 — Juaneno
Santa Ana, CA, 92799
sonia.johnston@sbcglobal.net

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos — Juaneno
San Juan Capisttrano, CA, 92675
Phone: (949) 293 - 8522

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Joyce Perry, Tribal Manager
4955 Paseo Segovia — Juaneno
Irvine, CA, 92603
Phone: (949) 293 - 8522
kaamalam@gmail.com

Juaneno Band of Mission Indians Acjachemen Nation - Romero
Teresa Romero, Chairperson
31411-A La Matanza Street — Juaneno
San Juan Capistrano, CA, 92675
Phone: (949) 488 - 3484
Fax: (949) 488-3294
tromero@juaneno.com

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

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

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

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

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed J. B. Latham Treatment Plant Facility Improvements Project, Orange County.

Native American Heritage Commission
Native American Contact List
Orange County
1/10/2018

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

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

San Pasqual Band of Mission Indians
John Flores, Environmental Coordinator
P. O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
johnf@sanpasqualtribe.org

Sycuan Band of the Kumeyaay Nation
Lisa Haws, Cultural Resources Manager
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 312 - 1935
lhaws@sycuan-nsn.gov

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

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

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

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

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed J. B. Latham Treatment Plant Facility Improvements Project, Orange County.

APPENDIX C
DPR 523a Forms

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

Page 1 **of** 9 ***Resource Name or #:** J.B. Latham Treatment Plant

P1. Other Identifier:
***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Orange
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Dana Point **Date:** 1968 (photorevised 1975) **T** 8 South; **R** 10 West; Unsectioned**;** S.B. **B.M.**
c. Address: 34156 Del Obispo Street City: Dana Point Zip:
d. UTM: Zone: 11; 436435.89 mE/ 3703211.75 mN (approximate center of J.B. Latham Treatment Plant)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 20 feet amsl

The J.B. Latham Treatment Plant is located at 34156 Del Obispo Street in Dana Point, immediately south of the intersection of Del Obispo Street and Village Road.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The J.B. Latham Treatment Plant consists of multiple buildings, structures, and features. Most of the 55+ buildings, structures, and features located treatment plant property were constructed after 1973 and are less than 45 years old. However, 17 buildings, structures, and features were constructed between 1964 and 1973 and comprise a district associated with the initial development of the treatment plant.

***P3b. Resource Attributes:** (List attributes and codes) HP8: Industrial Buildings
***P4. Resources Present:** ☐Building ☐Structure ☐Object ☐Site ■District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #) Overview of southern portion of treatment plant; view to north; 1/25/18

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
South Orange County Water District
34156 Del Obispo Street
Dana Point, CA 92629

***P8. Recorded by:** (Name, affiliation, and address) M. Loder
ESA
626 Wilshire Blvd, Suite 1100
Los Angeles, CA 90017

P9. Date Recorded: 1/25/2018

***P10. Survey Type:** (Describe)
Pedestrian Survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Grady, Amber, Michael Vader, and Chris Lockwood. *J.B. Latham Treatment Plant Facility Improvements Project, Dana Point, CA - Cultural Resources Assessment,* prepared for the South Orange County Water District by Environmental Science Associates, February 2018.

***Attachments:** ☐NONE ■Location Map ■Sketch Map ■Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ■District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

***NRHP Status Code**

***Resource Name or # (Assigned by recorder)**

D1. Historic Name: D2. Common Name: J.B. Latham Treatment Plant

***D3. Detailed Description** (Discuss overall coherence of the district, its setting, visual characteristics, and minor features. List all elements of district.):

See continuation sheet

***D4. Boundary Description** (Describe limits of district and attach map showing boundary and district elements.):

The resource boundary includes the entirety of the J.B. Latham Treatment Plant, which is bounded by Del Obispo Street to the west, the San Juan Creek Channel to the east, the Del Obispo Community Park, and commercial buildings to the south.

***D5. Boundary Justification:**

The district boundary includes the entirety of the J.B. Latham Treatment Plant because Plant provides the current setting for the 17 contributing buildings, structures, and features. Furthermore, although many of the structures within the Plant do not meet the California Office of Historic Preservation's 45-year age threshold for listing as a historical resource, these resources may be found to be contributing elements to the district as time goes on and they eventually meet the 45-year threshold.

D6. Significance: Theme post-World War II development; Sanitation
Area Dana Point and Orange County **Period of Significance** 1964-1973
Applicable Criteria N/A
(Discuss district's importance in terms of its historical context as defined by theme, period of significance, and geographic scope. Also address the integrity of the district as a whole.)

The J.B. Latham Treatment Plant was evaluated as a historic district for listing in the California Register under Criteria 1-4. It was constructed in 1964 when Orange County was experiencing significant population growth and suburban development. Over time, the treatment plant expanded to accommodate the County's increasing sanitation needs. The treatment plant consists of numerous buildings, structures, and features associated with wastewater treatment, with construction dates ranging between 1964 and the 1990s. Of the numerous buildings, structures, and features, five are 50 years old or older and an additional nine meet the OHP's 45-year age threshold for consideration as historical resources. These buildings, structures, and features reflect the treatment plant's early phases of development, and while they may lack individual distinction, together they have the potential for consideration as a historic district.

See the attached continuation sheet for the remainder of the Plant No. 2 significance discussion

***D7. References** (Give full citations including the names and addresses of any informants, where possible.):

See continuation sheet

***D8. Evaluator:** Amber Grady, M.A. **Date:** 2/7/2018

Affiliation and Address: ESA, 626 Wilshire Blvd., Suite 1100, Los Angeles, CA 90017

***Recorded by:** Max Loder
ESA
626 Wilshire Blvd Ste 1100
Los Angeles, CA 90017

***Date:** January 25, 2018
■ Continuation ☐Update

***D3. Detailed Description**

The J.B. Latham Treatment Plant (JBLTP) consists mainly of aeration tanks, digesters, clarifiers, support buildings, and processing facilities that cover the majority of the subject property. The buildings and structures represent different periods of treatment plant growth, including its initial period of development in 1964 as well as expansions and alterations that took place in 1971, 1974, 1978, 1985, 1991, 1996, 1997, and 2001. These were constructed over time, allowing the South Orange County Water District (SOCWA) to improve its water treatment capabilities. Most of the 55+ buildings, structures, and features located on the property were constructed after 1973 and do not meet the California Office of Historic Preservation's (OHP) 45-year threshold for consideration as historical resources, and therefore were not documented. However, 17 buildings, structures, and features were constructed between 1964 and 1973 were documented as a result of the survey. All of the 55+ buildings, structures, and features located on the property are listed below.

Era of Construction	Building Name (Year of Construction)
Initial Development (1964)	**Plant 1 Blower Building**
	Aeration Tank 1
	Primary Clarifiers 5 and 6
	Laboratory
	Secondary Clarifiers 8 and 9
1971 Expansion	**Digesters 3 and 4**
	Grit Chamber (Plant 1)
	Primary Clarifiers 3 and 4
	Secondary Clarifiers 4, 5, 6, and 7
	Aeration Tanks 2 and 3
	Sodium Hypochlorite System (portion of)
1974 Expansion	**Digesters 1 and 2 (Building 60)**
	Aeration Tank 4
	Primary Clarifiers 1 and 2

***Recorded by:** Max Loder
ESA
626 Wilshire Blvd Ste 1100
Los Angeles, CA 90017

***Date:** January 25, 2018
■ Continuation ☐Update

	Secondary Clarifiers 1, 2, and 3
1978 Expansion	**Plant 2 Blower Building**
	Grit Chamber (Plant 2)
	Aeration Tanks 5, 6, and 7
	Primary Clarifiers 7, 8, and 9
	Secondary Clarifiers 10, 11, 12, and 13
	Sodium Hypochlorite System (portion of)
1980-present Expansions/Renovations	**Solids Building (1985, 2001)**
	Plant 2 Headworks Building (1996)
	Operations Building (1994)
	Plant 2 Main Switchgear
	Dana Pt. Metering Structure
	Generator
	Record Storage Building
	Warehouse
	Gate/Entrance
	Abandoned Effluent Pumping Station
	Process Water Pumping Station
	Effluent Pump Switchgear Room
	Effluent Pumping Station
	Sodium Hypochlorite Facilities

***Recorded by:** Max Loder
ESA
626 Wilshire Blvd Ste 1100
Los Angeles, CA 90017

***Date:** January 25, 2018
■ Continuation ☐Update

	Scum Pump Station
	Plant Drainage Pump Station
	Air Gap Tank
	Plant Drainage Pump Station
	Flood Control Pump Station

When the initial phase of development was completed in 1964, the treatment plant occupied a small portion of the subject property and consisted primarily of the Plant 1 Blower Building, Primary Clarifiers 5 and 6, Secondary Clarifiers 8 and 9, and Aeration Tank 1. At this writing, these buildings and structure are extant. A plaque on site reads "DANA POINT SANITARY DISTRICT SEWAGE TREATMENT WORKS 1958" and includes a list of the board of directors (presumably from 1958), "CAL ENGINEERS CONSULTING ENGINEERS," and "WM. H. SCHALLOCK, INC. GENERAL CONTACTOR." A historic aerial photograph from 1968 shows what appear to be three open tanks, one additional circular structure (possibly a closed tank), and two or three smaller, roughly square structures at the southwest corner of the subject property; these are no longer extant.

D6. Significance:

California Register Criterion 1: Events

Under Criterion 1, a resource is eligible if it is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. While JBLTP is associated with a later period of development for Huntington Beach, Dana Point and Orange County, it did not play an important role in the initial development of these communities. Orange County was first settled as early as the 1860s and became its own county in 1889. Huntington Beach started out as a small coastal town known as Pacific City in 1901 and was incorporated as Huntington Beach in 1909. Initial development of the community of Dana Point began in the 1920s, after which time development stalled until the construction of the Dana Point Harbor in the 1960s. The JBLTP was initially constructed in 1958-1964 and is associated with the post-World War II development of Orange County. Between 1950 and 1960, Orange County's population grew to over one million people. Orange County experienced the construction of thousands of tract homes and commercial development. With the increasing population came a need for social and government services, which were met by the rapid construction of civic and institutional facilities like the wastewater treatment plant on the subject property. However, for a resource to be considered eligible under Criterion 1, its association must be significantly involved with the broad patterns of history. The JBLTP was not the first wastewater treatment plant constructed in Orange County, which would be more reflective of earlier settlement and development of Orange County. JBLTP was constructed in the midst of the area's suburbanizing phenomenon and, therefore, its construction does not appear to have stimulated a development trend in the area nor is it representative of a significant pattern of development, but is rather a reaction to an event stimulated by the area's economic growth. Furthermore, several government facilities were constructed throughout Orange County in response to the growing need for services, including fire and police stations, water and power facilities, and new schools. JBLTP did not play a more significant role in the post-war development of the area more than any of these other facilities and therefore, does not possess a significant association to be considered eligible under Criterion 1.

***Recorded by:** Max Loder
ESA
626 Wilshire Blvd Ste 1100
Los Angeles, CA 90017

***Date:** January 25, 2018
■ Continuation ☐Update

Based on the research of historical themes related to JBLTP, it does not appear to have a significant association with events in the history of wastewater treatment; with the settlement of Orange County, Huntington Beach, or Dana Point; or with any other significant events contributing to the broad patterns of California's history and cultural heritage. **Therefore, JBLTP is does not appear to be eligible for listing in the California Register under Criterion 1.**

California Register Criterion 2: Significant Persons

Under Criterion 2, and resource is eligible if it is associated with the lives of persons important in our past. Research of JBLTP did not reveal any associations with specific personages significant to national, state, or local history. Research did not identify any other significant figures in history that were associated with the Plant. **Therefore, JBLTP does not appear to be eligible for listing in the California Register under Criterion 2.**

California Register Criterion 3: Design/Construction

Under Criterion 3, a resource is eligible if it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values. JBLTP was initially constructed in 1958-64 and originally consisted of Plant 1 Blower Building, Primary Clarifiers 5 and 6, Secondary Clarifiers 8 and 9, and Aeration Tank 1 as well as a number of tanks and small buildings and structure that are no longer extant. Over time, the Plant added more clarifiers and digesters, as well as support facilities to accommodate the increasing amount of wastewater requiring treatment. The activated sludge method of wastewater treatment was first used in the United States in 1916. However, the method did not gain popularity among municipalities until the post-war era, due to patent litigation throughout the 1920s and 1930s. The activated sludge method quickly became the preferred method of wastewater treatment because the plants were cheap and easy to build. As many communities were experiencing rapid growth, the activated sludge plant was the preferred treatment approach to accommodate growing populations. JBLTP does not appear to be a significant example of the activated sludge plant. It was constructed nearly 50 years after the method was first used in the United States, and there are no primary or secondary historical sources indicating that the facilities located at JBLTP represent any advancements in the technology. JBLTP is a common example of the activated sludge plant and does not embody the distinctive characteristics of a type, period, region, or method of construction. Construction of the initial development of the JBLTP is attributed to general contractor William H. Schallock of Bakersfield, whose other completed projects include installation of water mains, sewer lines, and a water pressure system at the Kern County Airport (1957), construction of roads and tunnels in the Tehachapi Mountains in Kern County (1963), and preparation work for the State Water Project's California Aqueduct (1964). Schallock retired in 1974 and died the following year at age 60. Research does not indicate that Schallock or his associates were important creative individuals. Research also did not yield information about Cal Engineers or the identity of an architect associated with JBLTP. Furthermore, the plant does not possess high artistic values. **Therefore, JBLTP does not appear to be eligible for listing in the California Register under Criterion 3.**

Criterion 4: Data Potential

Under Criterion 4, a resource is eligible if it has yielded, or may be likely to yield, information important in prehistory or history. While most often applied to archaeological districts and sites, Criterion 4 can also apply to buildings, structures, and objects that contain important information. In order for these types of properties to be eligible under Criterion 4, they themselves must be, or must have been, the principal source of the important information. JBLTP does not appear to yield significant information that would expand our current knowledge or theories of design, methods of construction, operation, or other information that is not already known. **Therefore, JBLTP does not appear to be eligible for listing in the California Register under Criterion 4.**

***Recorded by:** Max Loder
ESA
626 Wilshire Blvd Ste 1100
Los Angeles, CA 90017

***Date:** January 25, 2018
■ Continuation ☐Update

Integrity

The California Register recognizes a property's integrity through seven aspects or qualities: location, design, setting, materials, workmanship, feeling, and association. Eligible properties should retain several, if not most, of these aspects. The California Register also requires that a resource retain sufficient integrity to convey its significance, and the property must retain the essential physical features that enable it to convey its historical identity. Integrity is based on significance and understanding why a property is important. Since JBLTP was not identified as significant under any of the applicable national or state criteria, an integrity analysis was not conducted.

Conclusion

The JBLTP, which consists of multiple buildings, structures, and features associated with the activated sludge method of wastewater treatment, is recommended not eligible for listing in the California Register.

State of California- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI #
Trinomial

*** Resource Name or Number: J.B. Latham Treatment Plant**

***Map name: Dana Point** ***Scale: 1:24000** ***Date of Map: 1968**

SKETCH MAP

Primary #
HRI #
Trinomial

* Resource Name or Number: J.B. Latham Treatment Plant

*Drawn By: M.Vader

*Date: 9 February 2018

* Required Information

Public Version

J.B. LATHAM TREATMENT PLANT FACILITY IMPROVEMENTS PACKAGE B FINAL DESIGN

Paleontological Resources Assessment

Prepared for

South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

March 2018

ESA

Public Version

J.B. LATHAM TREATMENT PLANT FACILITY IMPROVEMENTS PACKAGE B FINAL DESIGN

Paleontological Resources Assessment

Prepared for:
South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

March 2018

Prepared by:
ESA

Principal Investigator and Report Author:
Alyssa Bell, Ph.D.

Project Director:
Michael R. Bever Ph.D., R.P.A.

Project Location:
Dana Point (CA) USGS 7.5-minute Topographic Quad; Township 8 South, Range 8 West, unsectioned

Acreage: Approx. 8.3 acres

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Tampa

D170792.00

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EXECUTIVE SUMMARY

J.B. Latham Treatment Plant Facility Improvements Package B Final Design Paleontological Resources Assessment Report

The South Orange County Wastewater Authority (SOCWA) has retained Environmental Science Associates (ESA) to conduct a paleontological resources assessment for the J.B. Latham Treatment Plant Facility Improvements Package B Final Design(project) in support of an Initial Study/Mitigated Negative Declaration (IS/MND). The project proposes improvements to the existing J.B. Latham Treatment Plant (JBLTP). These improvements include equipment and structure repairs, equipment and structure replacement, new piping, safety-related modifications, and structural demolition. SOCWA is the lead agency pursuant to the California Environmental Quality Act (CEQA).

This paleontological resources assessment consisted of a review of current geologic mapping and the relevant scientific literature, previous geotechnical studies, and a records search from the Natural History Museum of Los Angeles County (LACM). The records search included a review of all recorded paleontological resources within the project site or from similar geologic units in the vicinity.

The results of this analysis indicate that while there are no previously recorded paleontological resources within the project area, scientifically significant fossils have been recovered from the region in sediments similar to those present in the project area. Therefore, the paleontological sensitivity of the sediments in the project area is high. Monitoring and mitigation protocols are recommended in the *Conclusions and Recommendations* section at the close of this report.

J.B. Latham Treatment Plant Facility Improvements Package B Final Design

Paleontological Resources Assessment Report

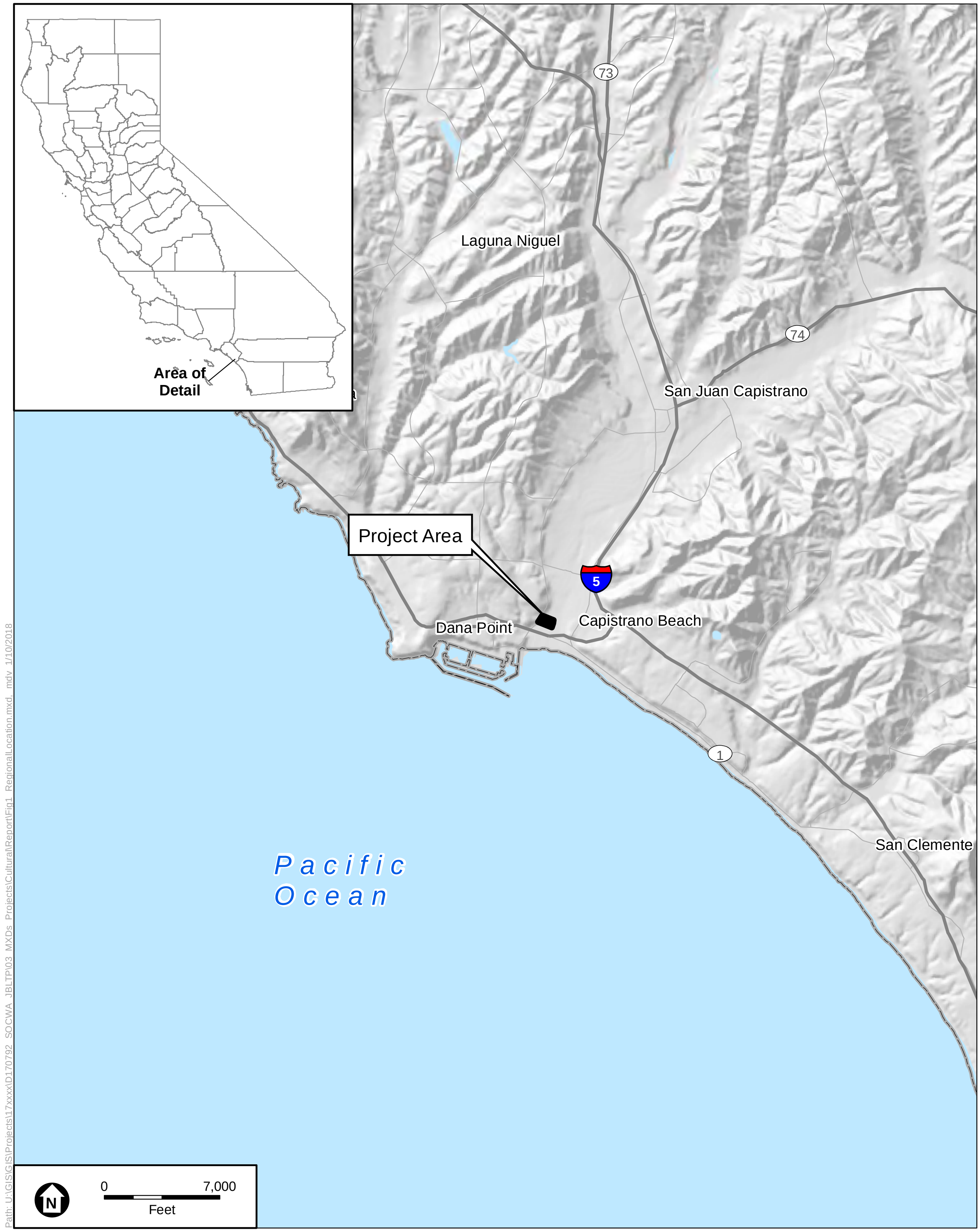
Introduction

The South Orange County Wastewater Authority (SOCWA) has retained Environmental Science Associates (ESA) to conduct a paleontological resources assessment for the J.B. Latham Treatment Plant Facility Improvements Package B Final Design (project) in support of an Initial Study/Mitigated Negative Declaration (IS/MND). The project proposes improvements to the existing J.B. Latham Treatment Plant (JBLTP). These improvements include equipment and structure repairs, equipment and structure replacement, new piping, safety-related modifications, and structural demolition. SOCWA is the lead agency pursuant to the California Environmental Quality Act (CEQA).

ESA personnel involved in the preparation of this report are as follows: Michael R. Bever, Ph.D., R.P.A., Project Director; Alyssa Bell, Ph.D., Principal Investigator and report author; and Jessie Lee, GIS specialist. Resumes of key personnel are included in **Appendix A**.

Project Location

The 8.3-acre project Site is situated within the central portion of the City of Dana Point (**Figure 1**). The project Site is located in an unsectioned portion of Township 8 South, Range 8 West of the Dana Point, CA United States Geological Survey 7.5-minute topographic quadrangle map. The project Site is bounded by Del Obispo Street to the west, Del Obispo Community Park to the north, San Juan Creek to the east, and the newly constructed South Cove residential development to the south (**Figure 2**).

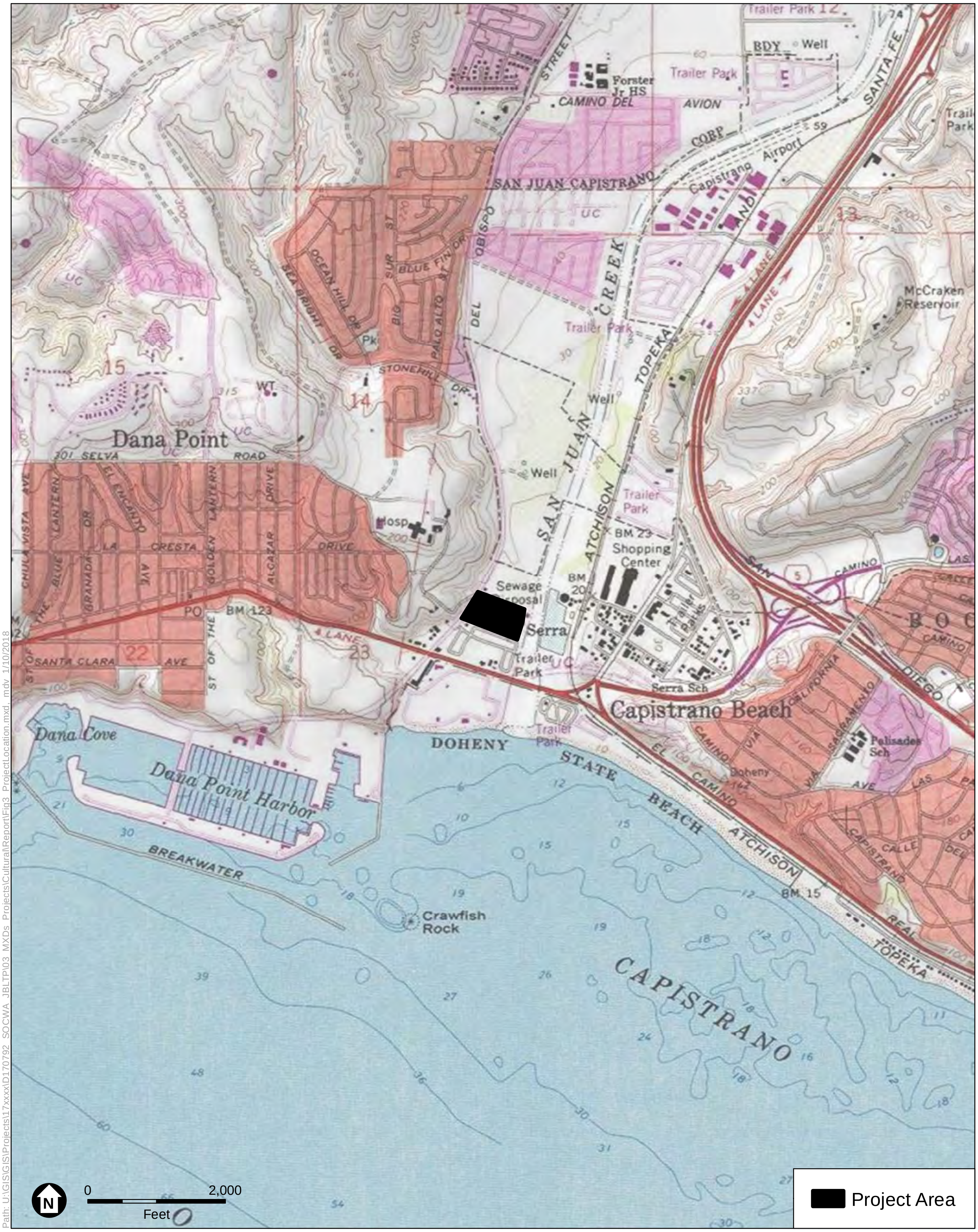


SOURCE: ESRI

JBLTP Facility Improvements Project D170794.00

Figure 1
Reginal Location

ESA



Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 2
Project Location

ESA

Path: U:\GIS\GIS\Projects\17xxxx\D170792_SOCWA_JBLTP\03_MXDs_Projects\CulturalReport\Fig3_ProjectLocation.mxd, mdv 1/10/2018

Project Description

SOCWA proposes improvements to the JBLTP, which include equipment and structure repairs, equipment and structure replacement, new piping, safety-related modifications, and structural demolition. The following describes in detail the improvements to be implemented:

1. The 24-inch discharge pipeline from the 30-inch by 24-inch reducer section of the Effluent Pump Station will be replaced with a 24-inch by 30-inch increaser section. The replacement includes the 24-inch check valve, actuator, and pressure indicator.
2. Two effluent discharge valves connecting the Chlorine Contact Basin to the San Juan Creek Ocean Outfall will be replaced.
3. The chain and flight assembly and telescoping valves of Secondary Sedimentation Basins 1 – 9 will be replaced, and repairs to damaged concrete on the crosswalks adjacent to the drive unit will be provided.
4. The rotating scum skimmers, telescoping valves, and drain valve assembly of the Secondary Sedimentation Basins 10 – 13 will be replaced.
5. The Primary Effluent Channel's basin protective coating will be replaced, its concrete surface and cracks will be repaired; its slide gates and drop gate assemblies will be replaced; and the diamond plate covers, supporting angles, and grating rebate will be replaced. Work along the channel diamond plate covers includes modification of aeration drain piping and foul air ducting above the deck.
6. The Primary Sedimentation Basins' protective coating will be replaced; their concrete surfaces and cracks will be repaired; and their launders, scum beach, scum skimmers, and basin and hatch covers will be replaced. All new electrical conduits (includes power supply to scum skimmer drives, basin lights, and power receptacles) will be rerouted from the north side of the Primary Sedimentation Basins, along the east wall of the Basins through the Primary Sludge Valve Tunnel, to the motor control center in the Blower Room.
7. The Plant 2 Influent Channel's lining, gates, rebate, and diamond plates will be replaced. The covers of the Primary Sedimentation Basin will be temporarily removed during construction and the covers will be restored after the completion of the improvement at the Plant 2 Influent Channel.
8. The Plant 1 Primary Influent Channel's basin protective coating will be replaced; its concrete surface and cracks will be repaired; and its inlet gates, diamond plate covers, and grating rebate will be replaced.
9. Various structures within the Liquids Facility and Solids Facility portions of the JBLTP will include modifications to roofs, hatch-skylight, fixed ladders, and handrails.
10. The metal structures of the Thickening and Digestion System are known to have structural defects due to corrosion. Corrosion repairs would include structural patching, sandblasting, and recoating the interior of the Thickening and Digestion System. Improvements would also include upgrading the dissolution tank, recirculation pump, compressor, thicken waste activated sludge pumps, aboveground piping, and valves.
11. The existing piping of the Centrate Drainage Pump runs between the Energy Recovery Building and Plant 1 Headworks Building. The original drainage line was modified in 2008, however the system is still subject to flow backing up. FIRM shall prepare a conceptual memorandum including the amount of flow to handle the system, pump size, location of

pumps, routing of discharge line, pump station control, and power supply. The expected routing and location are as shown in Exhibit 2.

12. Replacement of the existing pumps and control valves within the Digesters 1 and 2 Mixing Systems.
13. Replacement of four heat exchangers and above ground piping.
14. Replacement of indoor boilers and control system.
15. Replacement of the gas monitoring system and lighting and removal and reconstruction of the roof within Digester Control Building ½.
16. Replacement of all HVAC equipment and penetrations through the roof and a reinforced walkway on the roof of Digester Control Building 3/4.
17. The existing lab, which was constructed in the 1960s, has shifted its laboratory function to the Regional Treatment Plant, and the building would be demolished to make space for future improvements.
18. Improvements to the Energy Recovery Building would include a 25-foot-long monorail system on the upper floor of the building to allow storage of equipment.

Regulatory Framework

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value that are afforded protection under state laws and regulations. The following section summarizes the applicable federal and state laws and regulations, as well as professional standards provided by the Society for Vertebrate Paleontology (SVP).

State Regulations

California Environmental Quality Act

The CEQA Guidelines (Title 14, Chapter 3 of the California Code of Regulations, Section 15000 *et seq*.), define the procedures, types of activities, individuals, and public agencies required to comply with CEQA. As part of CEQA’s Initial Study process, one of the questions that must be answered by the lead agency relates to paleontological resources: “Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?” (CEQA Guidelines Section 15023, Appendix G, Section XIV, Part a).

The loss of any identifiable fossil that could yield information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a significant environmental impact. Direct impacts to paleontological resources primarily concern the potential destruction of nonrenewable paleontological resources and the loss of information associated with these resources. This includes the unauthorized collection of fossil remains. If potentially fossiliferous bedrock or surficial sediments are disturbed, the disturbance could result in the destruction of paleontological resources and subsequent loss of information (significant impact). At the project-specific level, direct impacts can be mitigated to a less than significant level through the implementation of paleontological mitigation.

The CEQA threshold of significance for a significant impact to paleontological resources is reached when a project is determined to "directly or indirectly destroy a significant paleontological resource or unique geologic feature." In general, for project sites that are underlain by paleontologically sensitive geologic units, the greater the amount of ground disturbance, the higher the potential for significant impacts to paleontological resources. For project sites that are directly underlain by geologic units with no paleontological sensitivity, there is no potential for impacts on paleontological resources unless sensitive geologic units which underlie the non-sensitive unit are also affected.

Public Resources Code Section 5097.5 and Section 30244

Other state requirements for paleontological resource management are included in PRC Section 5097.5 and Section 30244. These statutes prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, district) lands.

Local Regulations

City of Dana Point General Plan

The City of Dana Point's General Plan, Conservation/Open Space Element (1991), contains the following paleontological resources goals and policies relevant to this project:

> **Goal 8:** Encourage the preservation of significant historical or culturally significant buildings, sites or features within the community.
>
> > **Policy 8.1:** Require reasonable mitigation measures where development may affect historical, archaeological or paleontological resources. (Coastal Act/30244, 30250)
> >
> > **Policy 8.2:** Retain and protect resources of significant historical, archaeological, or paleontological value for education, visitor-serving, and scientific purposes. (Coastal Act/30244, 30250, 30253).

Society for Vertebrate Paleontology

The SVP has established standard guidelines (SVP, 1995, 2010) that outline professional protocols and practices for conducting paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most practicing professional vertebrate paleontologists adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most state regulatory agencies with paleontological resource-specific Laws, Ordinances, Regulations, and Standards (LORS) accept and use the professional standards set forth by the SVP.

As defined by the SVP (1995:26), significant nonrenewable paleontological resources are:

> Fossils and fossiliferous deposits here restricted to vertebrate fossils and their taphonomic and associated environmental indicators. This definition excludes invertebrate or paleobotanical fossils except when present within a given vertebrate assemblage. Certain invertebrate and plant fossils may be defined as significant by a project paleontologist, local paleontologist, specialists, or special interest groups, or by lead agencies or local governments.

As defined by the SVP (1995:26), significant fossiliferous deposits are:

> A rock unit or formation which contains significant nonrenewable paleontologic resources, here defined as comprising one or more identifiable vertebrate fossils, large or small, and any associated invertebrate and plant fossils, traces, and other data that provide taphonomic, taxonomic, phylogenetic, ecologic, and stratigraphic information (ichnites and trace fossils generated by vertebrate animals, e.g., trackways, or nests and middens which provide datable material and climatic information). Paleontologic resources are considered to be older than recorded history and/or older than 5,000 years BP [before present].

Based on the significance definitions of the SVP (1995), all identifiable vertebrate fossils are considered to have significant scientific value. This position is adhered to because vertebrate fossils are relatively uncommon, and only rarely will a fossil locality yield a statistically significant number of specimens of the same genus. Therefore, every vertebrate fossil found has the potential to provide significant new information on the taxon it represents, its paleoenvironment, and/or its distribution. Furthermore, all geologic units in which vertebrate fossils have previously been found are considered to have high sensitivity. Identifiable plant and invertebrate fossils are considered significant if found in association with vertebrate fossils or if defined as significant by project paleontologists, specialists, or local government agencies.

A geologic unit known to contain significant fossils is considered to be “sensitive” to adverse impacts if there is a high probability that earth-moving or ground-disturbing activities in that rock unit will either directly or indirectly disturb or destroy fossil remains. Paleontological sites indicate that the containing sedimentary rock unit or formation is fossiliferous. The limits of the entire rock formation, both areal and stratigraphic, therefore define the scope of the paleontological potential in each case (SVP, 1995).

Fossils are contained within surficial sediments or bedrock, and are therefore not observable or detectable unless exposed by erosion or human activity. In summary, paleontologists cannot know either the quality or quantity of fossils prior to natural erosion or human-caused exposure. As a result, even in the absence of surface fossils, it is necessary to assess the sensitivity of rock units based on their known potential to produce significant fossils elsewhere within the same geologic unit (both within and outside of the study area), a similar geologic unit, or based on whether the unit in question was deposited in a type of environment that is known to be favorable for fossil preservation. Monitoring by experienced paleontologists greatly increases the probability that fossils will be discovered during ground-disturbing activities and that, if these remains are significant, successful mitigation and salvage efforts may be undertaken in order to prevent adverse impacts to these resources.

Paleontological Sensitivity

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources," the SVP (1995:23) defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential:

- **High Potential.** Rock units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered and are considered to have a high potential for containing significant nonrenewable fossiliferous resources. These units include, but are not limited to, sedimentary formations and some volcanic formations that contain significant nonrenewable paleontologic resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical; and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Also classified as significant are areas that contain potentially datable organic remains older than Recent, including deposits associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways.
- **Low Potential.** Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils. Such units will be poorly represented by specimens in institutional collections.
- **Undetermined Potential.** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials.
- **No Potential.** Metamorphic and granitic rock units generally do not yield fossils and therefore have no potential to yield significant non-renewable fossiliferous resources.

For geologic units with high potential, full-time monitoring is generally recommended during any project-related ground disturbance. For geologic units with low potential, protection or salvage efforts will not generally be required. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be conducted to specifically determine the paleontologic potential of the rock units present within the study area.

Paleontological Resources Significance Criteria

Fossils are considered to be significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct;

2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;
3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life; or
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important (Scott and Springer 2003, Scott et al. 2004).

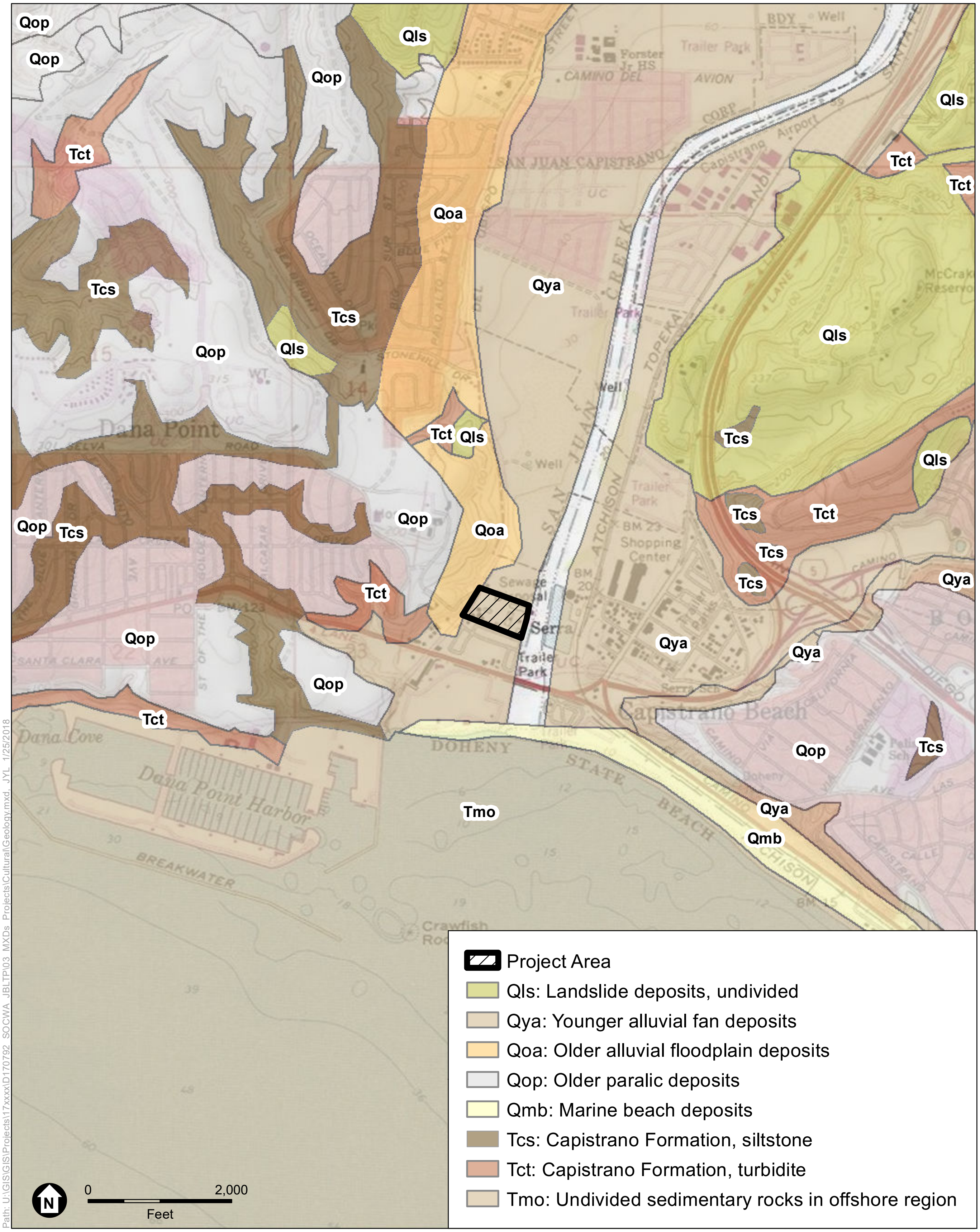
Archival Research

The project was the subject of thorough background research and analysis. The research included a paleontological locality records search from the Natural History Museum of Los Angeles County (LACM), as well as review of the relevant scientific literature, geologic mapping, and a geotechnical study of the site (Ninyo & Moore, 2012).

Geological Setting

The project site is located in the northwestern-most Peninsular Ranges Geomorphic Province, which is one of the largest geologic units in western North America (Norris and Webb, 1990). The Peninsular Ranges extend from Los Angeles in the north to the Baja Peninsula in the south, and from the Pacific coastline in the west to the Colorado Desert and Gulf of California in the east (Norris and Webb, 1990). It is characterized by northwest-trending mountains and valleys (Norris and Webb, 1990), of which the Santa Ana Mountains are closest to the project site. The Peninsular Ranges consist of a complex of fault-bounded blocks with predominantly Cretaceous igneous bedrock associated with the emplacement of Nevadan plutonism (Axen et al., 2000). This bedrock is then covered with marine and non-marine sediments dating from the Miocene (23 million years ago) to Pliocene (5.3 million years ago) (Kennedy et al., 2007). The Santa Ana Mountains, to the east of the project site, are fault-controlled, with uplift of the mountains resulting in the deposition of up to 1,000 feet of sediments into the adjoining basins and washed past the project site and out to sea (Durham and Yerkes, 1965).

Geologic mapping by Kennedy et al. (2007) indicates the surficial geology of the project site consists of younger alluvial floodplain deposits (Qya), with older alluvial floodplain deposits (Qoa) cropping out to the immediate west (**Figure 3**). These units are discussed in more detail below.



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SOURCE: USGS 7.5' Topo Quad Dana Point 1975, 1978; California Geological Survey

JBLTP Facility Improvements Project . D170792.00

Figure 3

Geologic Map

ESA

Younger Alluvial Floodplain Deposits (Qya). These sediments consist of poorly consolidated, fine-grained sediments (predominantly silt and sand, with silty or clay-bearing alluvium) deposited by flooding of the nearby San Juan Creek, and date from the middle or early Holocene (~5,000 years ago) to the late Pleistocene (~11,000 years ago, or slightly older) (Kennedy et al., 2007; ICS, 2017). These sediments are present across the surface of the project site.

Older Alluvial Floodplain Deposits (Qoa). These sediments consist of moderately well consolidated, poorly sorted gravel, sand, silt, and clay deposited by flood action on canyon floors during the late to middle Pleistocene (~11,000 to 78,000 years ago) (Kennedy et al., 2007; ICS, 2017). Older alluvial floodplain deposits are mapped at the surface to the immediate west of the project site, and therefore likely underlie the surficial younger alluvial floodplain deposits at a potentially shallow depth. A geotechnical study by Ninyo & Moore (2012) was unable to determine the depth at which the transition between younger and older alluvial floodplain deposits occurs in the project site.

LACM Records Search

On January 9, 2018, ESA requested a database search from the LACM for records of fossil localities in and around the project site. The purpose of the museum records search was to: (1) determine whether any previously recorded fossil localities occur in the project site, (2) assess the potential for disturbance of these localities during construction, and (3) evaluate the paleontological sensitivity in the project site. The records search returned no known localities within the project site; however, a number of vertebrate fossils are known from similar sedimentary deposits in the area (McLeod, 2018).

The closest LACM fossil locality in alluvial sediments to the project site is a specimen of *Bison* fossil (McLeod, 2018). The next closest locality is a fossil specimen of white croaker fish (*Genyonemus*) collected from terrace deposits (McLeod, 2018). The results of the database search are included as **Appendix B**.

Paleontological Sensitivity Analysis

The results of the records search from the LACM as well as a review of the scientific literature were used to assign paleontological sensitivity rankings of the SVP (2010) to the geologic units found at the surface (younger alluvial floodplain deposits) or in the subsurface (older alluvial floodplain deposits) of the project site. The SVP defines fossil resources as organismal remains or traces over 5,000 years in age (SVP, 2010). Therefore, both the surficial younger alluvial floodplain deposits (Qya) and the older alluvial floodplain deposits (Qoa) likely present in the subsurface are old enough to preserve fossil resources. The records search from the LACM indicates that these sediments have yielded significant fossil resources in the vicinity of the project site (McLeod, 2018). Furthermore, these sediments have a rich fossil history in Orange County (Hudson and Brattstrom, 1977; Jefferson 1991a and b; McDonald and Jefferson, 2008; Miller 1971). The most common Pleistocene terrestrial mammal fossils include the bones of mammoth, bison, deer, and small mammals, but other taxa, including horse, lion, cheetah, wolf, camel, antelope, peccary, mastodon, capybara, and giant ground sloth, have been reported (Graham and Lundelius 1994; McDonald and Jefferson, 2008), as well as reptiles such as frogs, salamanders, and snakes (Hudson and Brattstrom, 1977). In addition to illuminating the striking differences between southern California in the Pleistocene and today, this abundant fossil record has been vital in studies of extinction (e.g. Sandom, et al., 2014; Scott, 2010), ecology (e.g. Connin et al., 1998), and climate change (e.g. Roy et al., 1996).

The results of the literature review and LACM records search presented here indicate the surficial younger alluvial floodplain deposits (Qya) and the older alluvial floodplain deposits (Qoa) likely present in the subsurface have a strong record of preserving fossil resources, and therefore, are assigned **high paleontological sensitivity**.

Conclusions and Recommendations

As a result of this study, the sediments found at the surface and in the subsurface of the project site, identified as younger alluvial floodplain deposits (Qya) and older alluvial floodplain deposits (Qoa), have high paleontological sensitivity. Excavation into these units may encounter fossil resources, the destruction of which would constitute a significant impact under CEQA. Additionally, the geotechnical study of the project site identified around two feet of artificial fill present (Ninyo & Moore, 2012).

The following recommendations are made and would serve to reduce impacts to unique paleontological resources to a less than significant level:

1. A qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards (SVP, 2010) (Qualified Paleontologist) shall be retained prior to ground-disturbing activities that exceed two feet in depth. The Qualified Paleontologist shall provide technical and compliance oversight of all work as it relates to paleontological resources, shall attend the project kick-off meeting and project progress meetings on a regular basis, and shall report to the site in the event potential paleontological resources are encountered.

2. The Qualified Paleontologist shall conduct construction worker paleontological resources sensitivity training prior to the start of ground-disturbing activities that exceed two feet in depth (including vegetation removal, pavement removal, etc.). In the event construction crews are phased, additional trainings shall be conducted for new construction personnel. The training session shall focus on the recognition of the types of paleontological resources that could be encountered within the project site and the procedures to be followed if they are found. Documentation shall be retained demonstrating that all construction personnel attended the training.

3. Full-time paleontological resources monitoring shall be conducted for all ground disturbing activities that exceed two feet in depth and occurring in previously undisturbed sediments of younger alluvial floodplain deposits (Qya) and older alluvial floodplain deposits (Qoa). The upper two feet of artificial fill has no paleontological sensitivity and does not need to be monitored. The Qualified Paleontologist, based on observations of subsurface soil stratigraphy and/or other factors, may increase, reduce, or discontinue monitoring, as warranted. Monitoring may be reduced or discontinued by the Qualified Paleontologist, in coordination with SOCWA, based on observations of subsurface conditions. Paleontological

resources monitoring shall be performed by a qualified paleontological monitor (meeting the standards of the SVP) under the direction of the Qualified Paleontologist. Monitors shall have the authority to temporarily halt or divert work away from exposed fossils in order to recover the fossil specimens. Any significant fossils collected during project-related excavations shall be prepared to the point of identification and curated into an accredited repository with retrievable storage. Monitors shall prepare daily logs detailing the types of activities and soils observed, and any discoveries. The Qualified Paleontologist shall prepare a final monitoring and mitigation report to document the results of the monitoring effort.

4. If construction or other project personnel discover any potential fossils during construction, regardless of the depth of work or location, work at the discovery location shall cease in a 50-foot radius of the discovery until the Qualified Paleontologist has assessed the discovery and made recommendations as to the appropriate treatment. If the find is deemed significant, it should be salvaged following the standards of the SVP (SVP, 2010) and curated with a certified repository.

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APPENDIX A

Personnel Qualifications

ESA

Michael R. Bever, PhD, RPA

Senior Cultural Resources Specialist

EDUCATION

Ph.D., Anthropology, Southern Methodist University, Dallas

M.A., Anthropology, Southern Methodist University, Dallas

B.A., Anthropology, with honors, History minor, University of California, Davis

23 YEARS EXPERIENCE

PROFESSIONAL CERTIFICATIONS

Register of Professional Archaeologists (RPA), #16583

Secretary of the Interior and Caltrans Qualified as Principal Investigator

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

Riverside County Certification List for Archaeology

40-Hour HAZWOPER Certification

PROFESSIONAL AFFILIATIONS

Society for American Archaeology

Society for California Archaeology

Dr. Michael Bever has over 20 years of experience in archaeology and cultural resources management. He has worked throughout the western United States, with a focus in California. He has experience and specialized training in project management, business development, and cultural resources practice oversight, and has directed projects involving a wide breadth of resource types in compliance with federal and state laws and regulations. Dr. Bever's experience includes all manner of cultural resources studies and documentation for projects both large and small, and he has presented various cultural resources management training courses in both professional and academic settings.

In addition to work in cultural resources management, Dr. Bever has held tenure-track professorships at the University of Texas at Austin and the University of Nevada, Reno. A published expert in the earliest prehistory of North America, he is well-versed in archaeological research design and all aspects of archaeological field and laboratory research.

Relevant Experience

Montezuma Channel Repair, City of San Diego, California. *Cultural Resources Manager.* Dr. Bever oversaw cultural resource studies for the City's channel repair project in Montezuma Channel. The project requires an evaluation for substantial conformance with the City's Master Maintenance Program, derived from a program-level EIR and meeting the City's Historical Resources Guidelines. Cultural resource studies included a records search, field survey, and preparation of an Individual Historic Assessment (IAH).

Cogswell Reservoir Sediment Removal Project, Los Angeles National Forest, Los Angeles County, CA. *Cultural Resources Manager.* ESA retained by the County of Los Angeles Department of Public Works, Water Resources Division to prepare a Cultural Resources Assessment in support of the Cogswell Reservoir Sediment Removal Project. The purpose of the project is to remove debris and sediment from Cogswell Reservoir associated with the August 26, 2009 Station Fire in the Angeles National Forest. Dr. Bever managed the cultural resources study, which involved coordination with the United States Forest Service, preparation of a work plan and Archaeological Resources Protection Act permit, field survey, and preparation of a Cultural Resources Assessment Report meeting both CEQA and Section 106 of the National Historic Preservation Act requirements.

MFRO Facility for Agriculture Project, City of Escondido, CA. *Cultural Resources Manager*. The City of Escondido is preparing in IS/MND for the Membrane Filtration/Reverse Osmosis (MFRO) Facility for Agriculture Project for the City of Escondido. Using funds from the State Water Resources Control Board (SWRCB)

State Revolving Fund, which requires compliance with Section 106 of the National Historic Preservation Act, the project would include construction of an MFRO facility for agriculture reuse. The MFRO Facility would provide advanced treatment for Title 22 quality reuse water. The water would then be sent through the existing non-potable reuse water/agriculture pipelines and distributed to growers. ESA conducted a Phase I cultural resources study and a geoarchaeological sensitivity study for the project, and Dr. Bever is currently directing an Extended Phase I study, at the request of SWRCB and the California State SHPO.

Los Angeles County Sanitation District, Joint Water Pollution Control Plant Biogas Conditioning System Project, Carson, CA. *Cultural Resources Manager.* ESA prepared the Mitigated Negative Declaration (MND) for the Joint Water Pollution Control Plant (JWPCP) Biogas Conditioning System project. The MND evaluated the installation of a biogas conditioning system and associated pipelines (biogas supply pipeline, tail gas return pipeline, drain water pipeline) within the JWPCP and across a public roadway. Dr. Bever directed the cultural resources studies for this fast-paced MND preparation, which involved a Phase 1 archaeological study with a site survey, and participation in Native American consultation with the District.

Ballona Wetlands Restoration Project, California State Coastal Conservancy, Los Angeles, CA. *Cultural Resources Manager*. The historical Ballona Wetlands, which is now reduced to 577 acres (and only 12 percent of that is tidally influenced), once occupied a 2,000-acre expanse of critical coastal habitat and included some of the most diverse wetland habitat types in the Los Angeles Basin due to the presence of both freshwater and saltwater environments. The Ballona Wetlands Restoration EIR/EIS evaluates four alternatives that include the following key elements: ecosystem restoration, flood and stormwater management (by allowing a naturalized, rather than concrete-lined, Ballona Creek), public access improvements, infrastructure and utility modifications (including abandonment and relocation of Southern California Gas Company monitoring wells and pipelines), a full-scale implementation and restoration program, a state-of-the-art monitoring and adaptive management program, and ongoing operations and maintenance activities. Over more than seven years, Dr. Bever has directed or overseen aspects of the cultural resources studies for the Ballona Wetlands Restoration Project. The cultural resources component of the project has involved field survey and excavation, archival research, geoarchaeological assessment, SHPO and USACE outreach, and reporting to document cultural resources in the area. The area is considered exceptionally sensitive to local Native American groups and extensive consultation and coordination with local tribes and the California Department of Parks and Recreation has been essential. Documents, including cultural resources technical studies and an EIR/EIS, were prepared for the California Coastal Conservancy and the USACE.

EDUCATION

Ph.D., Vertebrate Paleontology; University of Southern California

M.S., Environmental Microbiology; University of Tennessee

B.A. with honors, Ecology and Systematics; William Jewell College & Homerton College, Cambridge University

10 YEARS EXPERIENCE

Alyssa Bell, PhD

Paleontologist

Dr. Alyssa Bell has supervised and peformed field work, authored project reports, and provided scientific and compliance direction and quality control for paleontological projects throughout Southern California. Dr. Bell has accumulated a wealth of field experience, working with crews from a variety of institutions on field sites in California, Arizona, New Mexico, South Dakota, and Utah, and has led her own expeditions in Montana. She has performed all manner of investigations from surveys and assessments to monitoring and fossil idenfitication over the last 15 years as a part of her academic pursuits and professional consultation, with the last three years being exclusively professional endeavors.

In addition to consulting, Dr. Bell serves as a postdoctoral fellow at the Dinosaur Institute of the Natural History Museum of Los Angeles County (LACM). There she is involved in pursuing her own research into fossil birds as well as working with the Institute's field projects and museum-wide education and outreach initiatives. She has also published peer-reviewed articles and book chapters and given numerous presentations at scientific conferences on both her paleontological and microbiological research.

Relevant Experience

ICHA Area 10 (PA 10-2 & 10-4) Archaeological and Paleontological Monitoring, Irvine, CA. *Principal Investigator & Project Paleontologist.* Dr. Bell managed the curatorial process for fossils collected during monitoring of pre-construction activities at the University of California, Irvine, and authored the final report.

Suncrest Reactive Power Support Project, San Diego County, CA. *Principal Investigator.* Dr. Bell authored the paleontological assessment for the Proponent's Environmental Assessment (PEA) in support for a dynamic reactive power support facility and associated 230-kilovolt (kV) transmission line near Alpine, California. The application for Certificate of Public Convenience and Necessary was filed in summer 2015 and the PEA was deemed complete in December 2015.

Washington National Archaeological and Paleontological Monitoring (Access Culver City), Culver City, CA. *Principal Investigator & Project Paleontologist.* Dr. Bell managed the curatorial process for fossils collected during monitoring of pre-construction activities at the Washington national site in Culver City, CA and authored the final report.

OTO Hotels Santa Monica Archaeological and Paleontological Service, Santa Monica, CA. *Principal Investigator.* Dr. Bell supervised paleontological monitoring and mitigation services during construction excavations and grading. Services included implementation of a paleontological mitigation monitoring program and reporting.

Sacred Heart Specific Plan Environmental Impact Report (EIR), La Canada Flintridge, CA. *Principal Investigator.* Dr. Bell prepared paleontological studies and developed monitoring & mitigation recommendations for the Sacred Heart development project.

Sixth & Bixel Paleontological Monitoring Services Project, Los Angeles, CA. *Principal Investigator & Project Paleontologist.* Dr. Bell supervised paleontological monitoring of preconstruction activities in support of a development project encompassing two parcels in downtown Los Angeles. During these activities, monitors identified and recovered numerous significant vertebrate fossils. Dr. Bell supervised the excavation of fossilized whale remains discovered on-site, and oversaw the collection and curation of all fossil specimens.

Natural and Cultural Support for the Gordon Mull Subdivision EIR, Glendora, CA. *Principal Investigator.* Dr. Bell collected the necessary data to prepare the technical sections and mitigation recommendations to support an EIR prepared by another firm to address the Gordon Mull Subdivision in the city of Glendora. The project is proposes to redevelop a 71-acre, 19-lot located in the San Gabriel Foothills.

Lake Elsinore Lakeshore Town Center Permitting, Riverside County, CA. *Principal Investigator.* Dr. Bell provided paleontological studies and developed monitoring and mitigation recommendations for the Lake Elsinore Town Center project in Riverside County.

San Pedro Plaza Park - Phase III Archaeological Monitor, Los Angeles, CA. *Principal Investigator.* Dr. Bell identified fossils during the mitigation measurement-required archaeological monitoring of earthmoving activities in San Pedro Park Plaza. She is also responsible for curation of the fossil material and authorship of the paleontological section of the final report.

City of Hope Specific Plan and EIR, Duarte, CA. *Principal Investigator.* Dr. Bell provided paleontological resource studies for the City of Hope Specific Plan Project.

Blythe Solar Power Project, Units 1 & 2, Riverside County, CA. *Project Paleontologist.* Dr. Bell supervised paleontological monitoring of preconstruction activities for a solar photo-voltaic cell power-generating facility outside the city of Blythe. As a part of her role, she provided oversight and management of paleontological monitors and development of the final monitoring report.

Industrial Project Environmental Impact Report, Colton, CA. *Principal Investigator.* Dr. Bell provided a paleontological resources study for a six-acre industrial project site at the southwest corner of Agua Mansa Road and Rancho Avenue in the city of Colton.

Mojave Solar Project Paleontological Reporting, San Bernardino County, CA. *Principal Investigator.* Dr. Bell managed curation of fossil materials and authored the final report of paleontological monitoring services provided for construction activities in support of a solar field development project in San Bernardino County.

El Camino Real Bridge Replacement Environmental Services, Atascadero, CA. *Principal Investigator.* Dr. Bell provided environmental services, including preparation of all California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) documentation, technical studies, and permitting, for the replacement of the El Camino Real Bridge over Santa Margarita Creek in Atascadero.

APPENDIX B

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1. Article Addressed to: Campo Band of Mission Indians Ralph Goff, Chairperson 36190 Church Road, Ste 1 Campo, CA 91906	D. Is delivery address different from item 1? ☐ Yes If YES, enter delivery address below: ☐ No 3. Service Type ☒ Certified Mail ☐ Express Mail ☐ Registered ☐ Return Receipt for Merchandise ☐ Insured Mail ☐ C.O.D. 4. Restricted Delivery? (*Extra Fee*) ☐ Yes
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Roni Young

SOCWA

South Orange County Wastewater Authority

34156 Del Obispo Street • Dana Point, CA 92629

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

SOCWA
South Orange County Wastewater Authority

March 12, 2018

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1
Campo, CA 91906
rgoff@campo-nsn.gov

SUBJECT: Notice of Proposed Project Pursuant to Public Resources Code Section 21080.3.1 ("AB 52") JB Latham Treatment Plant Facility Improvements Package B Final Design

This letter is to inform you that the South Orange County Wastewater Authority (SOCWA) proposes to implement the Latham Treatment Plant Facility Improvements Package B Final Design (proposed project) as described below. Per Assembly Bill 52 (AB 52), California Native American groups have the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.

SOCWA proposes to implement the proposed project at the existing JB Latham Treatment Plant (JBLTP) Facility, located in southern Orange County at 34156 Del Obispo Street in the City of Dana Point, California. The proposed project improvements encompass approximately seven of the nine acres of the existing JBLTP and include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition.

If you would like to engage in government-to-government consultation per AB 52, please respond in writing within 30 calendar days from receipt of this letter stating that you would like to consult on the proposed project. Please provide your lead person's contact information in your response. Please contact me as soon as possible if you wish to engage in consultation. My contact information is as follows:

Roni Young, Associate Engineer
South Orange County Wastewater Authority
ryoung@socwa.com
JB Latham Treatment Plant
34156 Del Obispo Street
Dana Point, CA 92629

We look forward to working with you should you elect to engage in the consultation process.

Roni Young

Attachment: Figure 3, Project Location

Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

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1. Article Addressed to:

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

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Roni Young

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South Orange County Wastewater Authority

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

South Orange County Wastewater Authority

March 12, 2018

Ewilaapaayp Tribal Office
Michael Garcia, Chairperson
4054 Willows Road
Alpine, CA 91901
michaelg@leaningrock.net

SUBJECT: Notice of Proposed Project Pursuant to Public Resources Code Section 21080.3.1 ("AB 52") JB Latham Treatment Plant Facility Improvements Package B Final Design

This letter is to inform you that the South Orange County Wastewater Authority (SOCWA) proposes to implement the Latham Treatment Plant Facility Improvements Package B Final Design (proposed project) as described below. Per Assembly Bill 52 (AB 52), California Native American groups have the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.

SOCWA proposes to implement the proposed project at the existing JB Latham Treatment Plant (JBLTP) Facility, located in southern Orange County at 34156 Del Obispo Street in the City of Dana Point, California. The proposed project improvements encompass approximately seven of the nine acres of the existing JBLTP and include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition.

If you would like to engage in government-to-government consultation per AB 52, please respond in writing within 30 calendar days from receipt of this letter stating that you would like to consult on the proposed project. Please provide your lead person's contact information in your response. Please contact me as soon as possible if you wish to engage in consultation. My contact information is as follows:

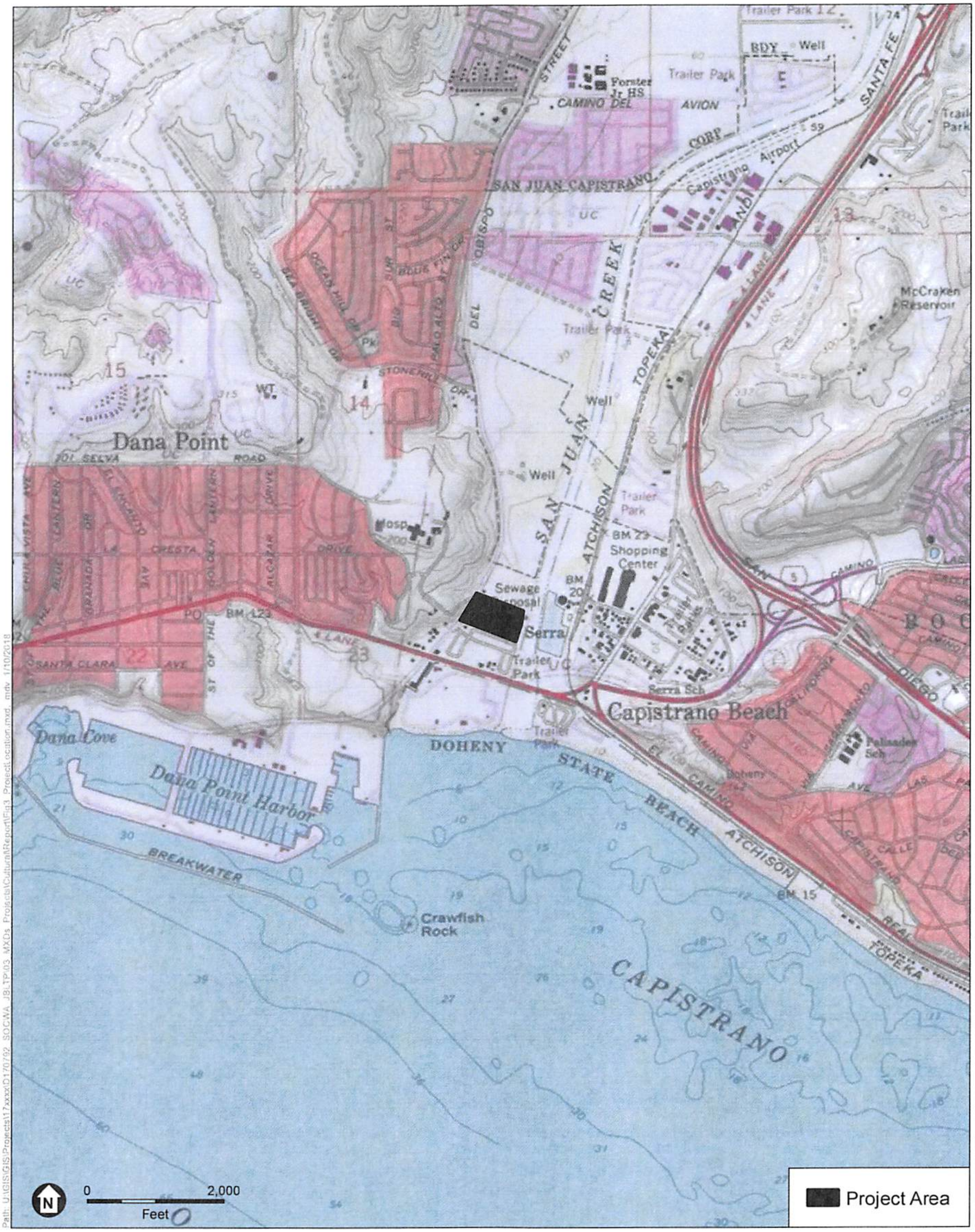
Roni Young, Associate Engineer
South Orange County Wastewater Authority
ryoung@socwa.com
JB Latham Treatment Plant
34156 Del Obispo Street
Dana Point, CA 92629

We look forward to working with you should you elect to engage in the consultation process.

Roni Young

Roni Young Grant

Attachment: Figure 3, Project Location



Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

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34156 Del Obispo Street • Dana Point, CA 92629

Juaneno Band of Mission Indians
Acjachemen Nation-Romero
Teresa Romero, Chairperson
31411-A La Matanza Street
San Juan Capistrano, CA 92675

March 12, 2018

Juaneno Band of Mission Indians Acjachemen Nation – Romero
Teresa Romero, Chairperson
31411-A La Matanza Street
San Juan Capistrano, CA 92675
tromero@juaneno.com

SUBJECT: Notice of Proposed Project Pursuant to Public Resources Code Section 21080.3.1 ("AB 52") JB Latham Treatment Plant Facility Improvements Package B Final Design

This letter is to inform you that the South Orange County Wastewater Authority (SOCWA) proposes to implement the Latham Treatment Plant Facility Improvements Package B Final Design (proposed project) as described below. Per Assembly Bill 52 (AB 52), California Native American groups have the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.

SOCWA proposes to implement the proposed project at the existing JB Latham Treatment Plant (JBLTP) Facility, located in southern Orange County at 34156 Del Obispo Street in the City of Dana Point, California. The proposed project improvements encompass approximately seven of the nine acres of the existing JBLTP and include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition.

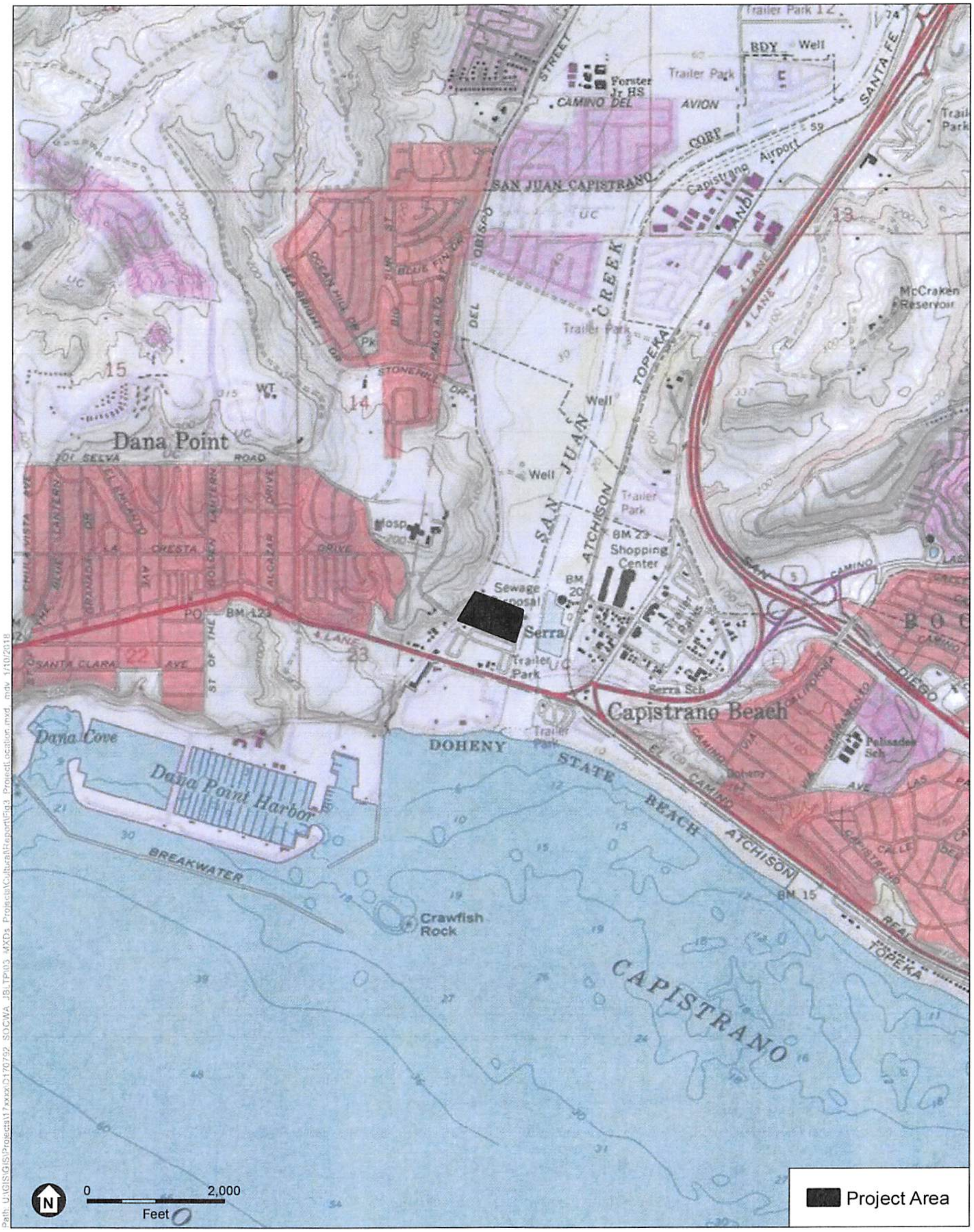
If you would like to engage in government-to-government consultation per AB 52, please respond in writing within 30 calendar days from receipt of this letter stating that you would like to consult on the proposed project. Please provide your lead person's contact information in your response. Please contact me as soon as possible if you wish to engage in consultation. My contact information is as follows:

Roni Young, Associate Engineer
South Orange County Wastewater Authority
ryoung@socwa.com
JB Latham Treatment Plant
34156 Del Obispo Street
Dana Point, CA 92629

We look forward to working with you should you elect to engage in the consultation process.

Roni Young

Attachment: Figure 3, Project Location



Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

ESA

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1. Article Addressed to: Juaneno Band of Mission Indians Acjachemen Nation-Belardes Joyce Perry, Tribal Manager 4955 Paseo Segovia Irvine, CA 92603	D. Is delivery address different from item 1? ☐ Yes If YES, enter delivery address below: ☐ No 3. Service Type X Certified Mail ☐ Express Mail ☐ Registered ☐ Return Receipt for Merchandise ☐ Insured Mail ☐ C.O.D. 4. Restricted Delivery? (*Extra Fee*) ☐ Yes
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Roni Young

SOCWA
South Orange County Wastewater Authority
34156 Del Obispo Street • Dana Point, CA 92629

Juaneno Band of Mission Indians
Acjachemen Nation-Belardes
Joyce Perry, Tribal Manager
4955 Paseo Segovia
Irvine, CA 92603

SOCWA
South Orange County Wastewater Authority

March 12, 2018

Juaneno Band of Mission Indians Acjachemen Nation – Belardes
Joyce Perry, Tribal Manager
4955 Paseo Segovia
Irvine, CA 92603
kaamalam@gmail.com

SUBJECT: Notice of Proposed Project Pursuant to Public Resources Code Section 21080.3.1 ("AB 52") JB Latham Treatment Plant Facility Improvements Package B Final Design

This letter is to inform you that the South Orange County Wastewater Authority (SOCWA) proposes to implement the Latham Treatment Plant Facility Improvements Package B Final Design (proposed project) as described below. Per Assembly Bill 52 (AB 52), California Native American groups have the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.

SOCWA proposes to implement the proposed project at the existing JB Latham Treatment Plant (JBLTP) Facility, located in southern Orange County at 34156 Del Obispo Street in the City of Dana Point, California. The proposed project improvements encompass approximately seven of the nine acres of the existing JBLTP and include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition.

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Dana Point, CA 92629

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Roni Young

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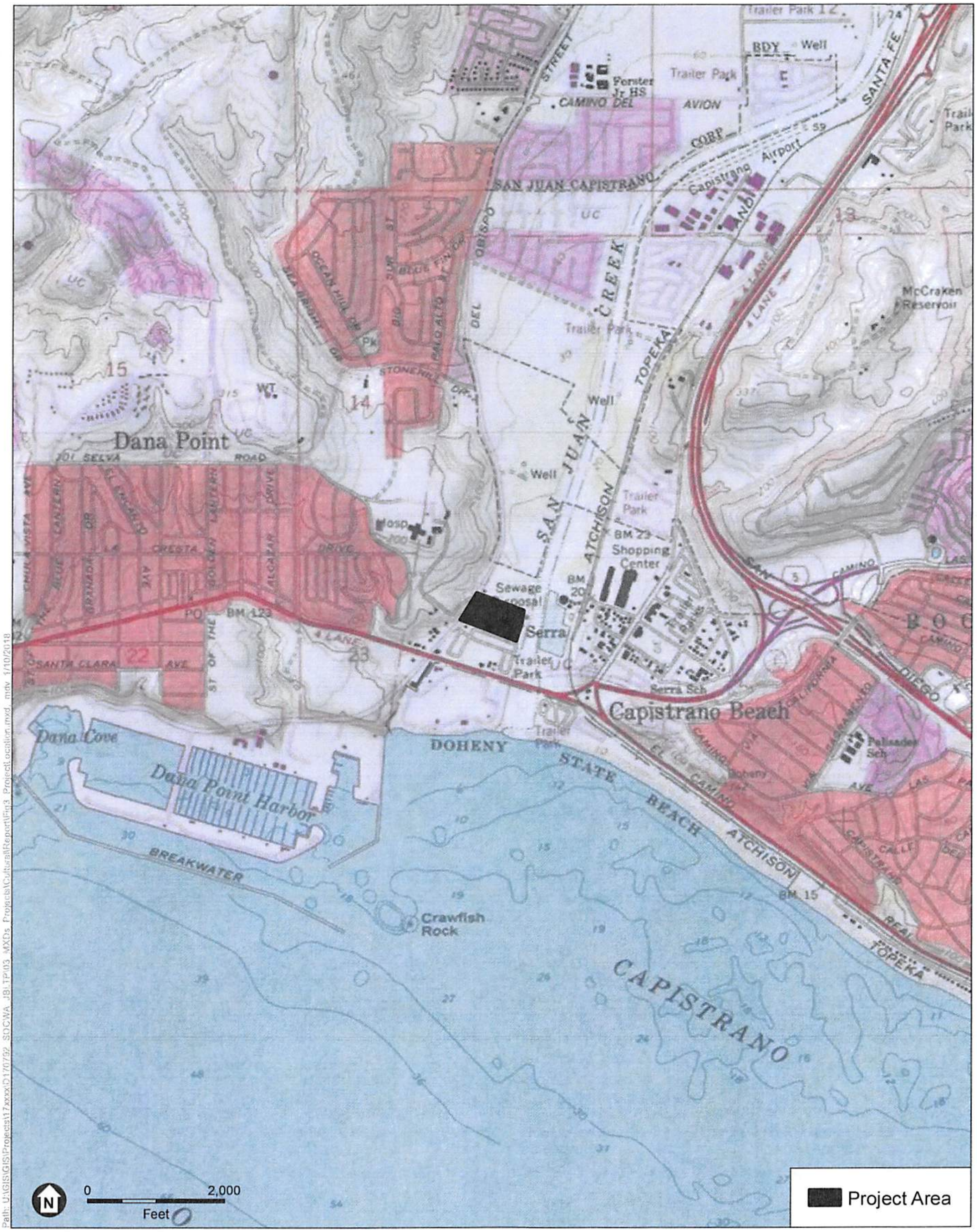

Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

ESA

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Acjachemen Nation-Belardes

Street & Apt. No., or PO Box No. Matias Belardes, Chairperson

32161 Avenida Los Amigos

City, State, ZIP+4 San Juan Capistrano, CA 92675

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1. Article Addressed to:

Juaneno Band of Mission Indians
Acjachemen Nation-Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos
San Juan Capistrano, CA 92675

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Roni Young

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Acjachemen Nation-Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos
San Juan Capistrano, CA 92675

SOCWA

South Orange County Wastewater Authority

March 12, 2018

Juaneno Band of Mission Indians Acjachemen Nation – Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos
San Juan Capistrano, CA 92675

SUBJECT: Notice of Proposed Project Pursuant to Public Resources Code Section 21080.3.1 ("AB 52") JB Latham Treatment Plant Facility Improvements Package B Final Design

This letter is to inform you that the South Orange County Wastewater Authority (SOCWA) proposes to implement the Latham Treatment Plant Facility Improvements Package B Final Design (proposed project) as described below. Per Assembly Bill 52 (AB 52), California Native American groups have the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.

SOCWA proposes to implement the proposed project at the existing JB Latham Treatment Plant (JBLTP) Facility, located in southern Orange County at 34156 Del Obispo Street in the City of Dana Point, California. The proposed project improvements encompass approximately seven of the nine acres of the existing JBLTP and include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition.

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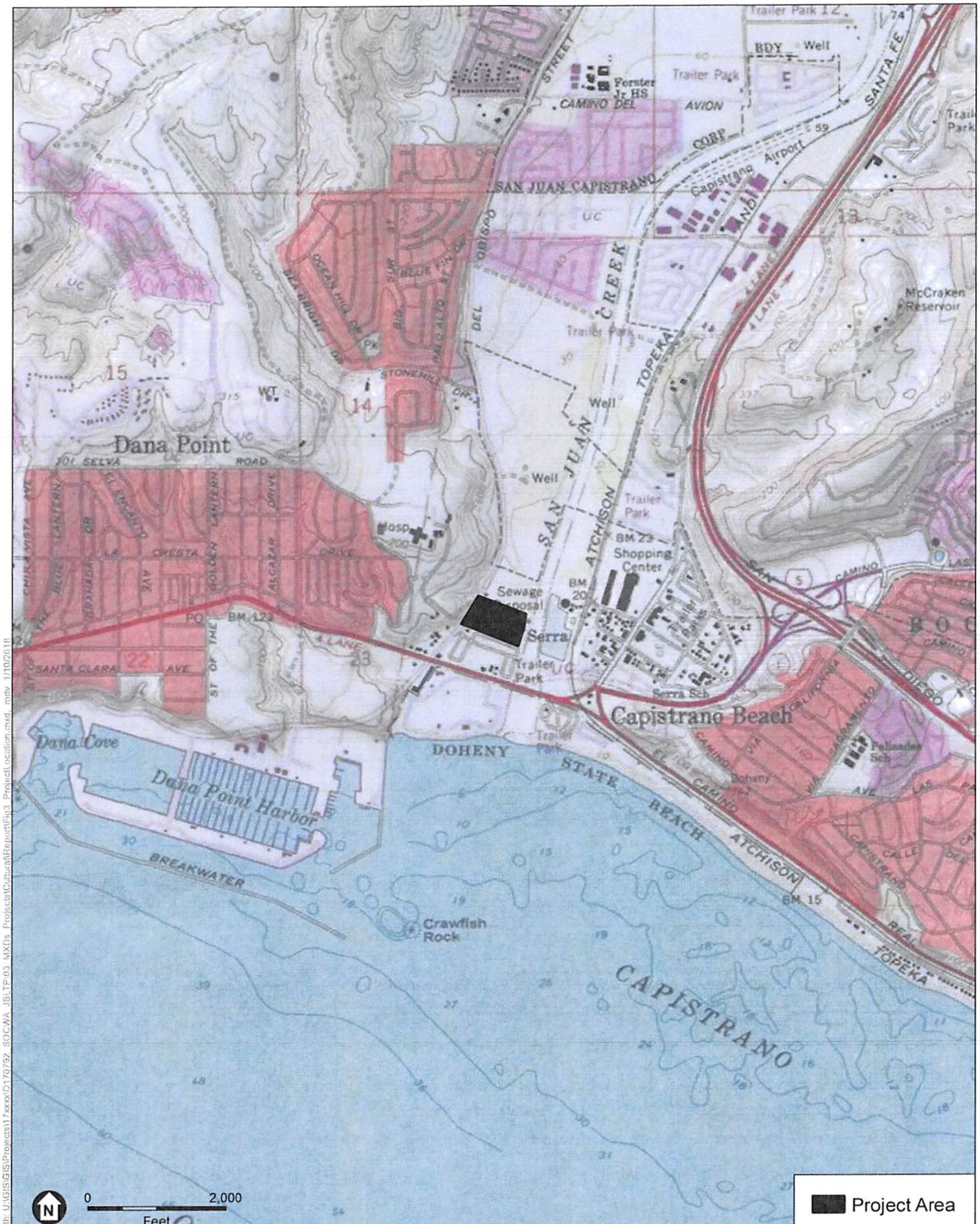
Roni Young, Associate Engineer
South Orange County Wastewater Authority
ryoung@socwa.com
JB Latham Treatment Plant
34156 Del Obispo Street
Dana Point, CA 92629

We look forward to working with you should you elect to engage in the consultation process.

Roni Young

Roni Young Grant

Attachment: Figure 3, Project Location



Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

ESA

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Street & Apt. No. or PO Box No. Sonia Johnston, Chairperson

P.O. Box 25628

City, State, ZIP+4 Santa Ana, CA 92799

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Roni Young

SOCWA

South Orange County Wastewater Authority

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Sonia Johnston, Chairperson
P.O. Box 25628
Santa Ana, CA 92799

SOCWA
South Orange County Wastewater Authority

March 12, 2018

Juaneno Band of Mission Indians
Sonia Johnston, Chairperson
P.O. Box 25628
Santa Ana, CA 92799
Sonia.johnston@sbcglobal.net

SUBJECT: Notice of Proposed Project Pursuant to Public Resources Code Section 21080.3.1 ("AB 52") JB Latham Treatment Plant Facility Improvements Package B Final Design

This letter is to inform you that the South Orange County Wastewater Authority (SOCWA) proposes to implement the Latham Treatment Plant Facility Improvements Package B Final Design (proposed project) as described below. Per Assembly Bill 52 (AB 52), California Native American groups have the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.

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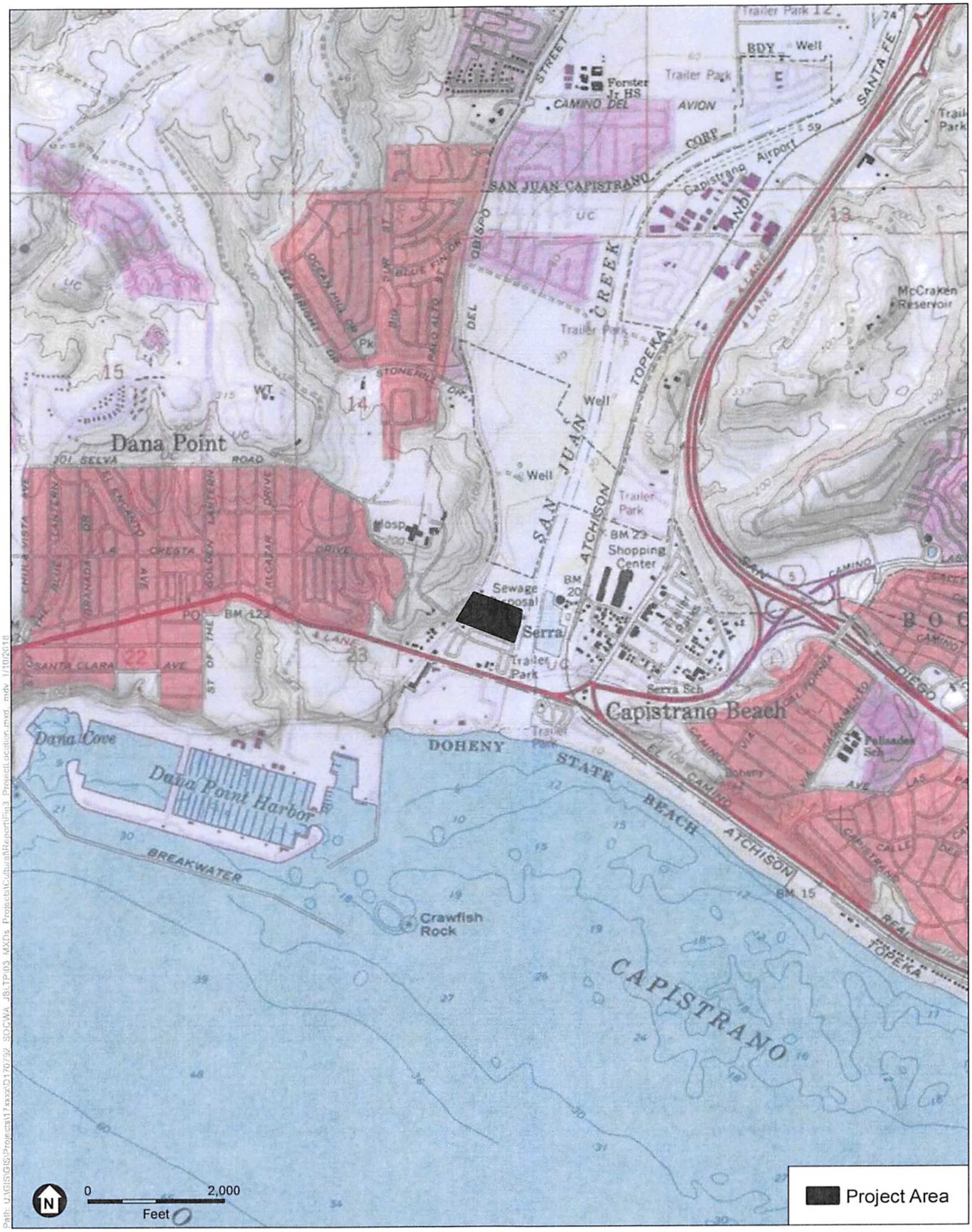
Roni Young, Associate Engineer
South Orange County Wastewater Authority
ryoung@socwa.com
JB Latham Treatment Plant
34156 Del Obispo Street
Dana Point, CA 92629

We look forward to working with you should you elect to engage in the consultation process.

Roni Young

Attachment: Figure 3, Project Location



Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

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Erica Pinto, Chairperson
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1. Article Addressed to: Jumul Indian Village Erica Pinto, Chairperson P.O. Box 612 Jamul, CA 91935	D. Is delivery address different from item 1? ☐ Yes If YES, enter delivery address below: ☐ No
	3. Service Type ☑ Certified Mail ☐ Express Mail ☐ Registered ☐ Return Receipt for Merchandise ☐ Insured Mail ☐ C.O.D. 4. Restricted Delivery? (*Extra Fee*) ☐ Yes

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

SOCWA
South Orange County Wastewater Authority

March 12, 2018

Jumul Indian Village
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Roni Young Grant

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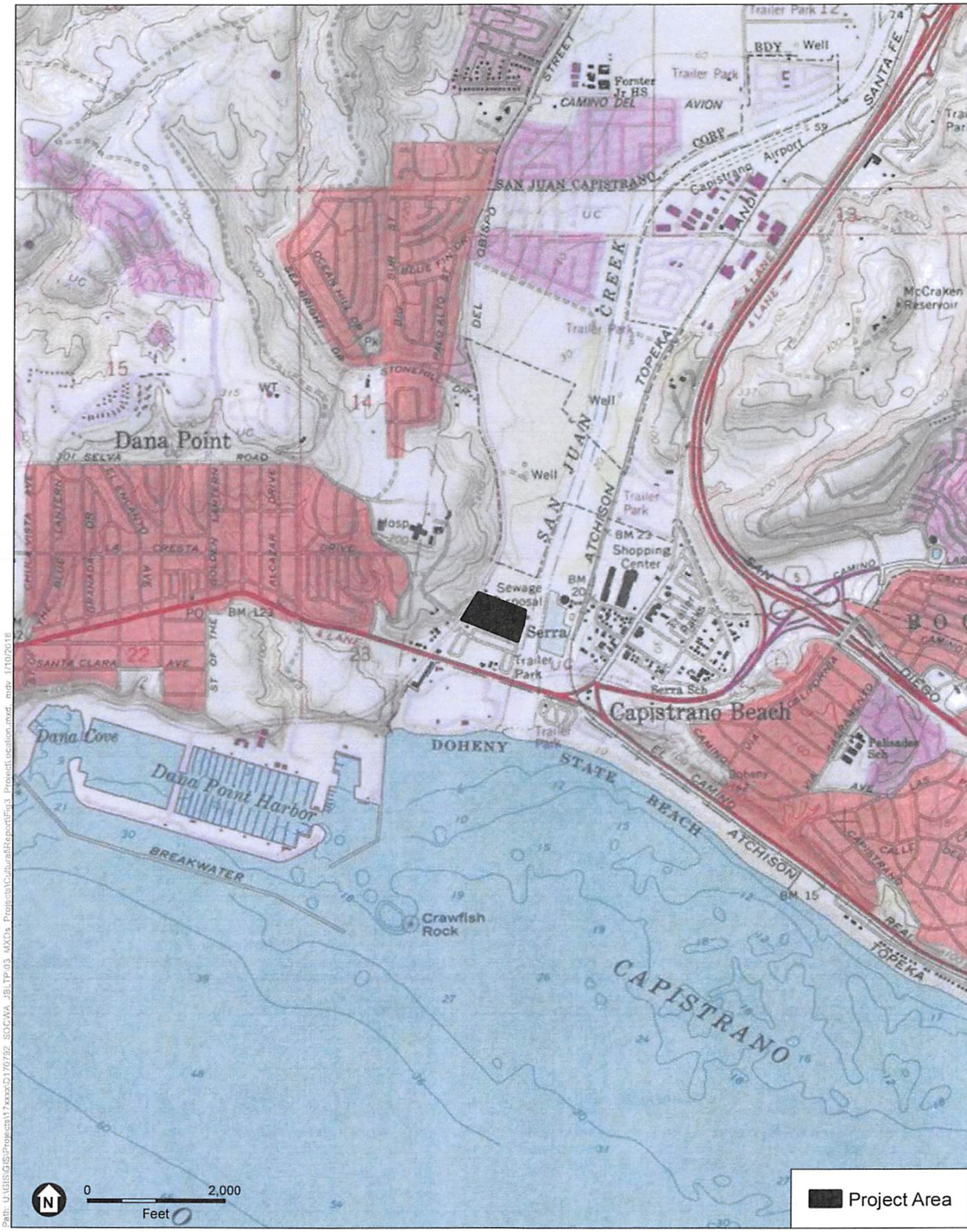

Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

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1. Article Addressed to: La Posta Band of Mission Indians Gwendolyn Parada, Chairperson 8 Crestwood Rd. Boulevard, CA 91905	D. Is delivery address different from item 1? ☐ Yes If YES, enter delivery address below: ☐ No 3. Service Type ☒ Certified Mail ☐ Express Mail ☒ Registered ☐ Return Receipt for Merchandise ☐ Insured Mail ☐ C.O.D. 4. Restricted Delivery? (*Extra Fee*) ☐ Yes
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SOCWA
34156 Del Obispo
Dana Point, CA 92629-2916

Roni Young

South Orange County Wastewater Authority
34156 Del Obispo Street • Dana Point, CA 92629

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

SOCWA

South Orange County Wastewater Authority

March 12, 2018

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road
Boulevard, CA 91905
LP13boots@aol.com

SUBJECT: Notice of Proposed Project Pursuant to Public Resources Code Section 21080.3.1 ("AB 52") JB Latham Treatment Plant Facility Improvements Package B Final Design

This letter is to inform you that the South Orange County Wastewater Authority (SOCWA) proposes to implement the Latham Treatment Plant Facility Improvements Package B Final Design (proposed project) as described below. Per Assembly Bill 52 (AB 52), California Native American groups have the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.

SOCWA proposes to implement the proposed project at the existing JB Latham Treatment Plant (JBLTP) Facility, located in southern Orange County at 34156 Del Obispo Street in the City of Dana Point, California. The proposed project improvements encompass approximately seven of the nine acres of the existing JBLTP and include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition.

If you would like to engage in government-to-government consultation per AB 52, please respond in writing within 30 calendar days from receipt of this letter stating that you would like to consult on the proposed project. Please provide your lead person's contact information in your response. Please contact me as soon as possible if you wish to engage in consultation. My contact information is as follows:

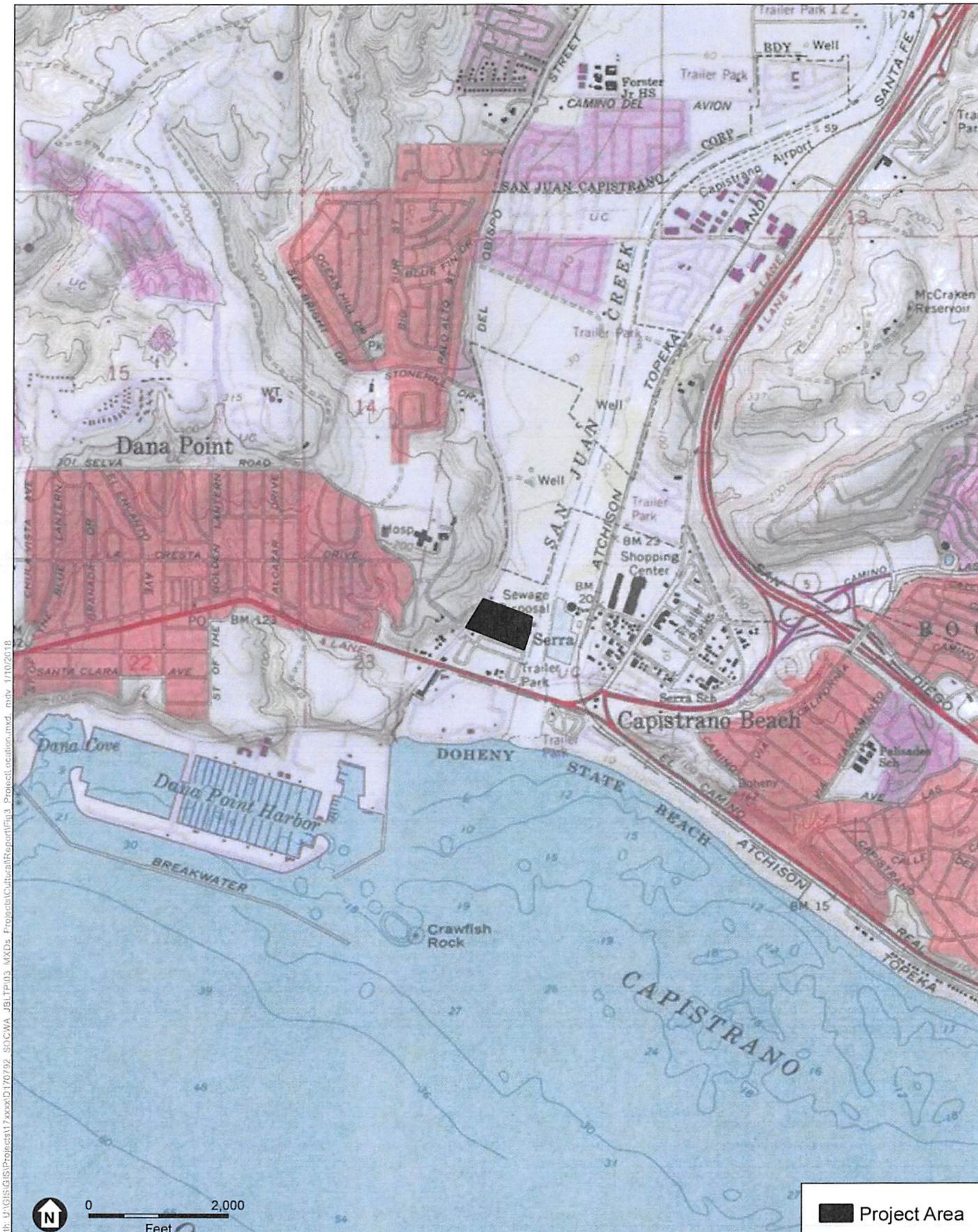
Roni Young, Associate Engineer
South Orange County Wastewater Authority
ryoung@socwa.com
JB Latham Treatment Plant
34156 Del Obispo Street
Dana Point, CA 92629

We look forward to working with you should you elect to engage in the consultation process.

Roni Young

Roni Young Grant

Attachment: Figure 3, Project Location



Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

ESA

7014 3490 0001 5496 6957

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT
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Sent To Manzanita Band of Kumeyaay Nation

Street & Apt. No., or PO Box No. Angela Elliott Santos, Chairperson
P.O. Box 1302

City, State, ZIP+4 Boulevard, CA 91905

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1. Article Addressed to:

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

2. Article Number
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☐ Agent
☐ Addressee

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4. Restricted Delivery? *(Extra Fee)* ☐ Yes

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SOCWA
34156 Del Obispo
Dana Point, CA 92629-2916

Roni Young

SOCWA
South Orange County Wastewater Authority
34156 Del Obispo Street • Dana Point, CA 92629

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

March 12, 2018

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

SUBJECT: Notice of Proposed Project Pursuant to Public Resources Code Section 21080.3.1 ("AB 52") JB Latham Treatment Plant Facility Improvements Package B Final Design

This letter is to inform you that the South Orange County Wastewater Authority (SOCWA) proposes to implement the Latham Treatment Plant Facility Improvements Package B Final Design (proposed project) as described below. Per Assembly Bill 52 (AB 52), California Native American groups have the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.

SOCWA proposes to implement the proposed project at the existing JB Latham Treatment Plant (JBLTP) Facility, located in southern Orange County at 34156 Del Obispo Street in the City of Dana Point, California. The proposed project improvements encompass approximately seven of the nine acres of the existing JBLTP and include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition.

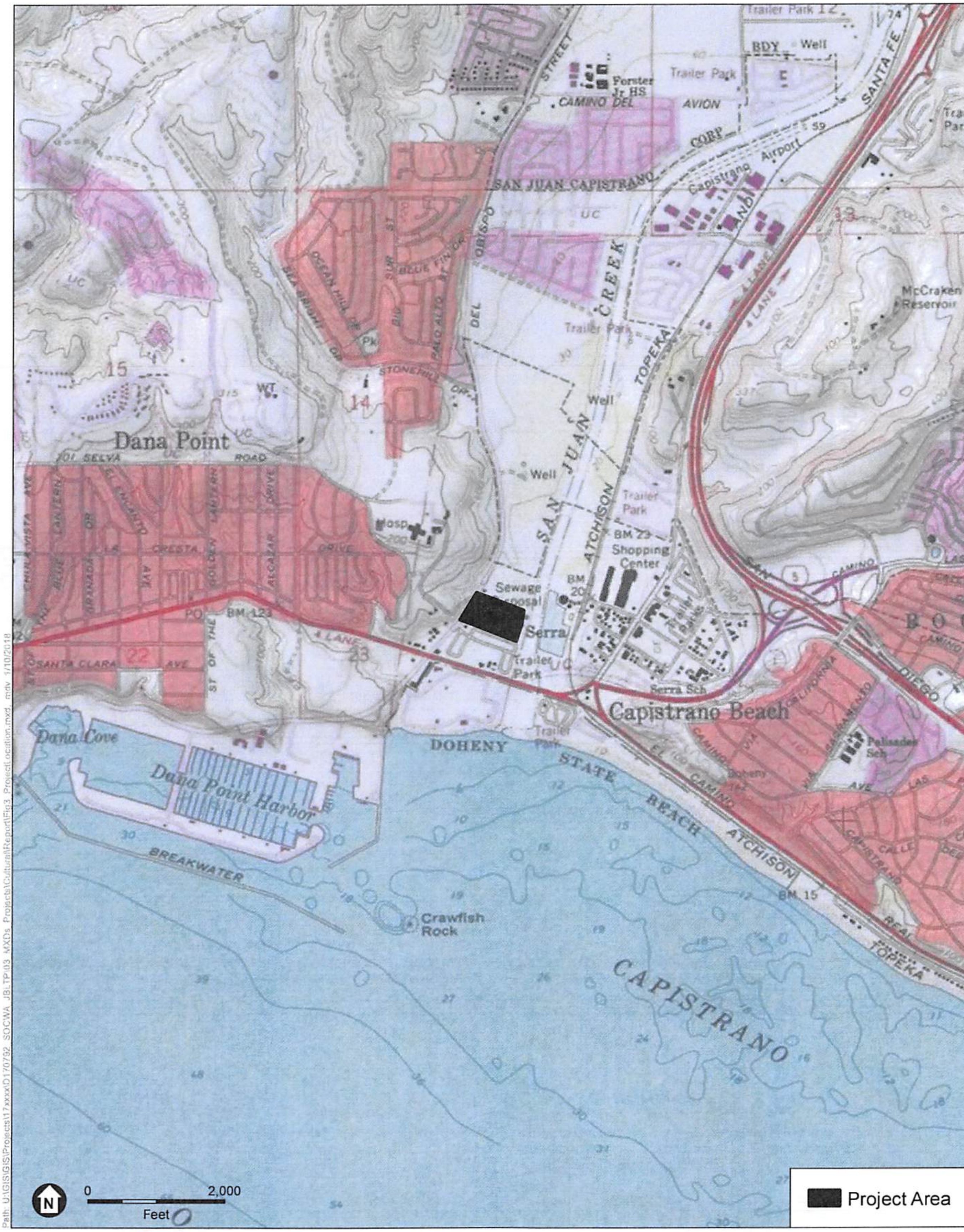
If you would like to engage in government-to-government consultation per AB 52, please respond in writing within 30 calendar days from receipt of this letter stating that you would like to consult on the proposed project. Please provide your lead person's contact information in your response. Please contact me as soon as possible if you wish to engage in consultation. My contact information is as follows:

Roni Young, Associate Engineer
South Orange County Wastewater Authority
ryoung@socwa.com
JB Latham Treatment Plant
34156 Del Obispo Street
Dana Point, CA 92629

We look forward to working with you should you elect to engage in the consultation process.

Roni Young
Roni Young Grant

Attachment: Figure 3, Project Location



Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

ESA

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Total Postage & Fees	$

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Sent To Pauma Band of Luiseno Indians-Pauma & Yuima Reservation

Street & Apt. No., or PO Box No. Temet Aguilar, Chairperson
P.O. Box 369

City, State, ZIP+4 Pauma Valley, CA 92061

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1. Article Addressed to:

Pauma Band of Luiseno Indians-Pauma
& Yuima Reservation
Temet Aguilar, Chairperson
P.O. Box 369
Pauma Valley, CA 92061

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A. Signature

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☐ Addressee

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4. Restricted Delivery? *(Extra Fee)* ☐ Yes

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34156 Del Obispo
Dana Point, CA 92629-2916

Roni Young

SOCWA
South Orange County Wastewater Authority
34156 Del Obispo Street • Dana Point, CA 92629

Pauma Band of Luiseno Indians-Pauma
& Yuima Reservation
Temet Aguilar, Chairperson
P.O. Box 369
Pauma Valley, CA 92061

South Orange County Wastewater Authority

March 12, 2018

Pauma Band of Luiseno Indians – Pauma & Yuima Reservation
Temet Aguilar, Chairperson
P.O. Box 369
Pauma Valley, CA 92061

SUBJECT: Notice of Proposed Project Pursuant to Public Resources Code Section 21080.3.1 ("AB 52") JB Latham Treatment Plant Facility Improvements Package B Final Design

This letter is to inform you that the South Orange County Wastewater Authority (SOCWA) proposes to implement the Latham Treatment Plant Facility Improvements Package B Final Design (proposed project) as described below. Per Assembly Bill 52 (AB 52), California Native American groups have the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.

SOCWA proposes to implement the proposed project at the existing JB Latham Treatment Plant (JBLTP) Facility, located in southern Orange County at 34156 Del Obispo Street in the City of Dana Point, California. The proposed project improvements encompass approximately seven of the nine acres of the existing JBLTP and include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition.

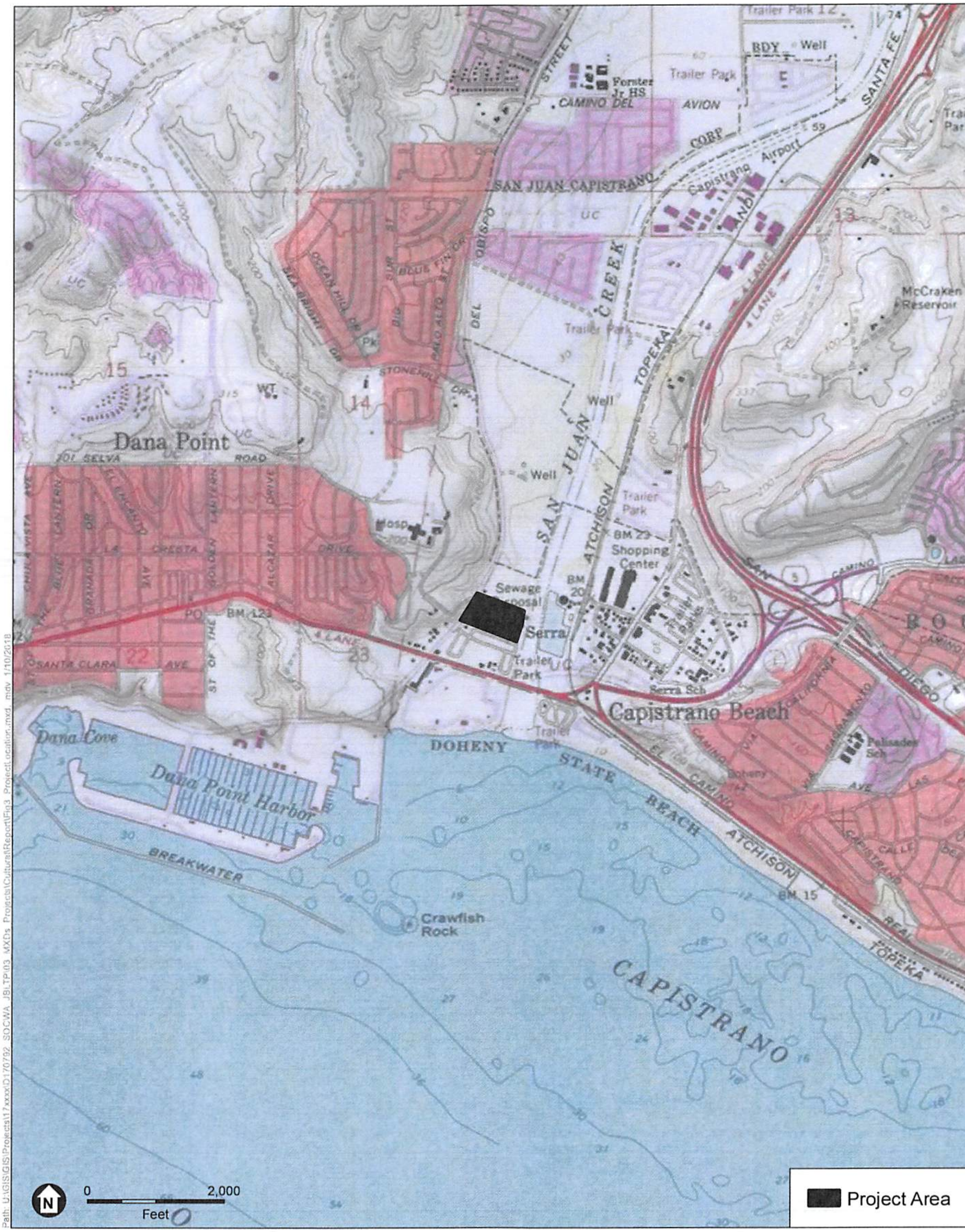
If you would like to engage in government-to-government consultation per AB 52, please respond in writing within 30 calendar days from receipt of this letter stating that you would like to consult on the proposed project. Please provide your lead person's contact information in your response. Please contact me as soon as possible if you wish to engage in consultation. My contact information is as follows:

Roni Young, Associate Engineer
South Orange County Wastewater Authority
ryoung@socwa.com
JB Latham Treatment Plant
34156 Del Obispo Street
Dana Point, CA 92629

We look forward to working with you should you elect to engage in the consultation process.

Roni Young
Roni Young Grant

Attachment: Figure 3, Project Location



Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

ESA

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Sent To San Pasqual Band of Mission Indians

Street & Apt. No., or PO Box No. John Flores, Environmental Coordinator
P.O. Box 365

City, State, ZIP+4 Valley Center, CA 92082

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1. Article Addressed to:

San Pasqual Band of Mission Indians
John Flores, Environmental Coordinator
P.O. Box 365
Valley Center, CA 92082

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by (*Printed Name*)

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34156 Del Obispo
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Roni Young

SOCWA

South Orange County Wastewater Authority

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San Pasqual Band of Mission Indians
John Flores, Environmental Coordinator
P.O. Box 365
Valley Center, CA 92082

SOCWA
South Orange County Wastewater Authority

March 12, 2018

San Pasqual Band of Mission Indians
John Flores, Environmental Coordinator
P.O. Box 365
Valley Center, CA 92082
johnf@anpasqualtribe.org

SUBJECT: Notice of Proposed Project Pursuant to Public Resources Code Section 21080.3.1 ("AB 52") JB Latham Treatment Plant Facility Improvements Package B Final Design

This letter is to inform you that the South Orange County Wastewater Authority (SOCWA) proposes to implement the Latham Treatment Plant Facility Improvements Package B Final Design (proposed project) as described below. Per Assembly Bill 52 (AB 52), California Native American groups have the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.

SOCWA proposes to implement the proposed project at the existing JB Latham Treatment Plant (JBLTP) Facility, located in southern Orange County at 34156 Del Obispo Street in the City of Dana Point, California. The proposed project improvements encompass approximately seven of the nine acres of the existing JBLTP and include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition.

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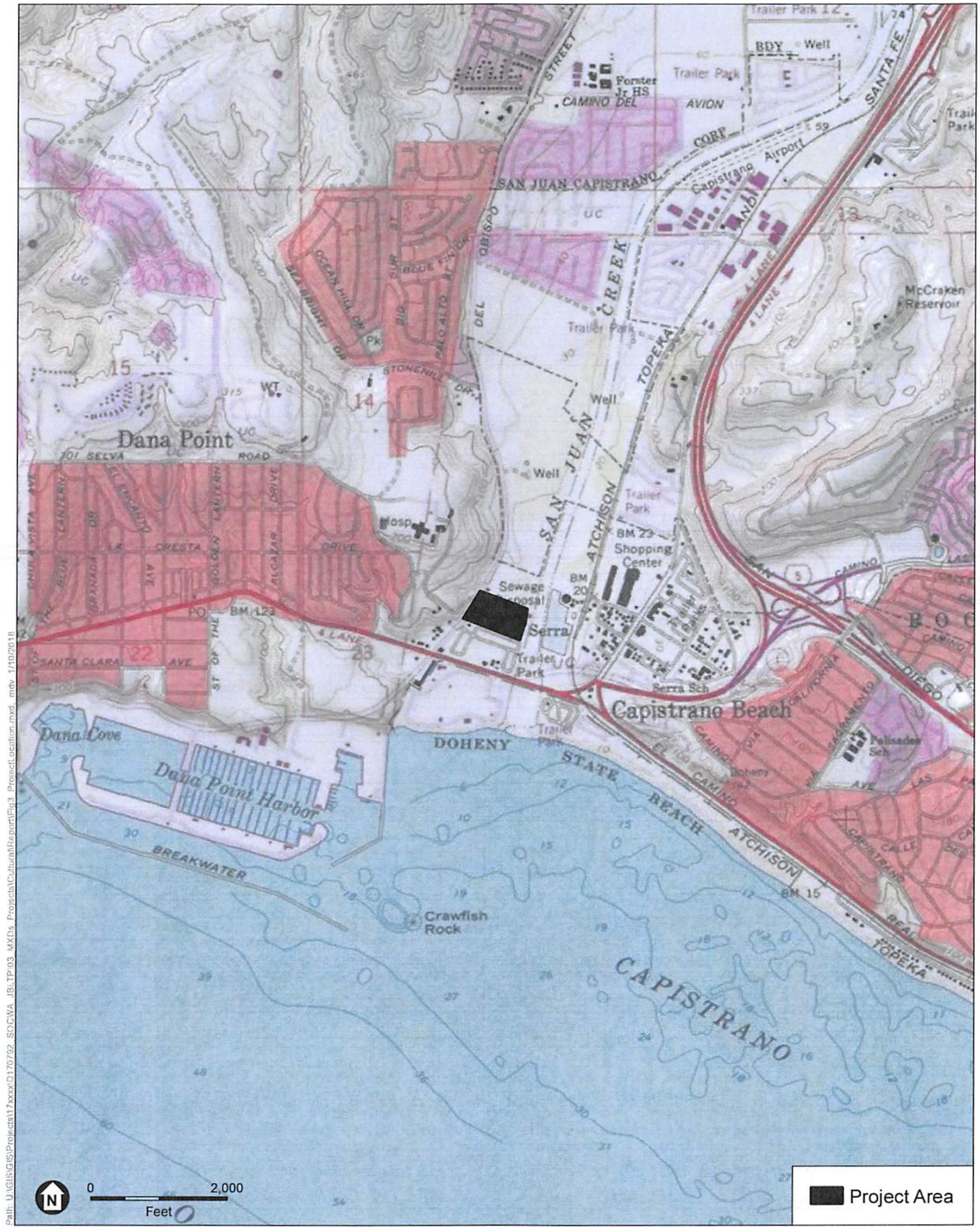
Roni Young, Associate Engineer
South Orange County Wastewater Authority
ryoung@socwa.com
JB Latham Treatment Plant
34156 Del Obispo Street
Dana Point, CA 92629

We look forward to working with you should you elect to engage in the consultation process.

Roni Young
Roni Young Grant

Attachment: Figure 3, Project Location



Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

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Total Postage & Fees	$

Postmark
Here

Sent To Sycuan Band of the Kumeyaay Nation

Street & Apt. No., or PO Box No. Lisa Haws, Cultural Resources Manager

City, State, ZIP+4 1 Kwaaypaay Court

El Cajon, CA 92019

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1. Article Addressed to:

Sycuan Band of the Kumeyaay Nation
Lisa Haws, Cultural Resources Manager
1 Kwaaypaay Court
El Cajon, CA 92019

2. Article Number
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A. Signature
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SOCWA
34156 Del Obispo
Dana Point, CA 92629-2916

Roni Young

SOCWA
South Orange County Wastewater Authority
34156 Del Obispo Street • Dana Point, CA 92629

Sycuan Band of the Kumeyaay Nation
Lisa Haws, Cultural Resources Manager
1 Kwaaypaay Court
El Cajon, CA 92019

South Orange County Wastewater Authority

March 12, 2018

Sycuan Band of the Kumeyaay Nation
Lisa Haws, Cultural Resources Manager
1 Kwaaypaay Court
El Cajon, CA 92019
lhaws@sycuan-nsn.gov

SUBJECT: Notice of Proposed Project Pursuant to Public Resources Code Section 21080.3.1 ("AB 52") JB Latham Treatment Plant Facility Improvements Package B Final Design

This letter is to inform you that the South Orange County Wastewater Authority (SOCWA) proposes to implement the Latham Treatment Plant Facility Improvements Package B Final Design (proposed project) as described below. Per Assembly Bill 52 (AB 52), California Native American groups have the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.

SOCWA proposes to implement the proposed project at the existing JB Latham Treatment Plant (JBLTP) Facility, located in southern Orange County at 34156 Del Obispo Street in the City of Dana Point, California. The proposed project improvements encompass approximately seven of the nine acres of the existing JBLTP and include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition.

If you would like to engage in government-to-government consultation per AB 52, please respond in writing within 30 calendar days from receipt of this letter stating that you would like to consult on the proposed project. Please provide your lead person's contact information in your response. Please contact me as soon as possible if you wish to engage in consultation. My contact information is as follows:

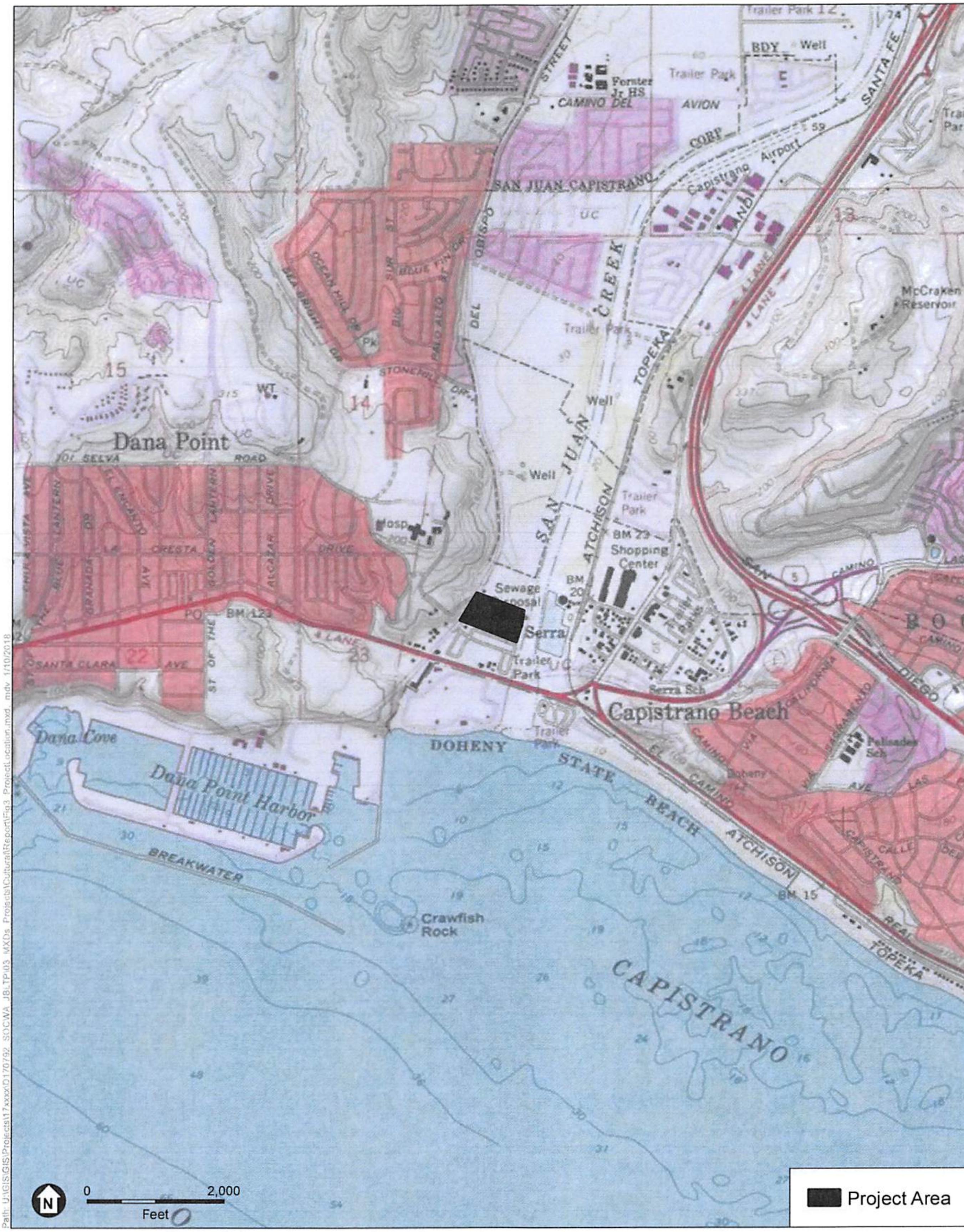
Roni Young, Associate Engineer
South Orange County Wastewater Authority
ryoung@socwa.com
JB Latham Treatment Plant
34156 Del Obispo Street
Dana Point, CA 92629

We look forward to working with you should you elect to engage in the consultation process.

Roni Young

Roni Young Grant

Attachment: Figure 3, Project Location



Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

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City, State, ZIP+4 Alpine, CA 91901

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SOCWA
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Dana Point, CA 92629-2916

Roni Young

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South Orange County Wastewater Authority
34156 Del Obispo Street • Dana Point, CA 92629

Viejas Band of Kumeyaay Indians
Julie Hagen
1 Viejas Grade Road
Alpine, CA 91901

SOCWA
South Orange County Wastewater Authority

March 12, 2018

Viejas Band of Kumeyaay Indians
Julie Hagen
1 Viejas Grade Road
Alpine, CA 91901
jhagen@viejas-nsn.gov

SUBJECT: Notice of Proposed Project Pursuant to Public Resources Code Section 21080.3.1 ("AB 52") JB Latham Treatment Plant Facility Improvements Package B Final Design

This letter is to inform you that the South Orange County Wastewater Authority (SOCWA) proposes to implement the Latham Treatment Plant Facility Improvements Package B Final Design (proposed project) as described below. Per Assembly Bill 52 (AB 52), California Native American groups have the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.

SOCWA proposes to implement the proposed project at the existing JB Latham Treatment Plant (JBLTP) Facility, located in southern Orange County at 34156 Del Obispo Street in the City of Dana Point, California. The proposed project improvements encompass approximately seven of the nine acres of the existing JBLTP and include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition.

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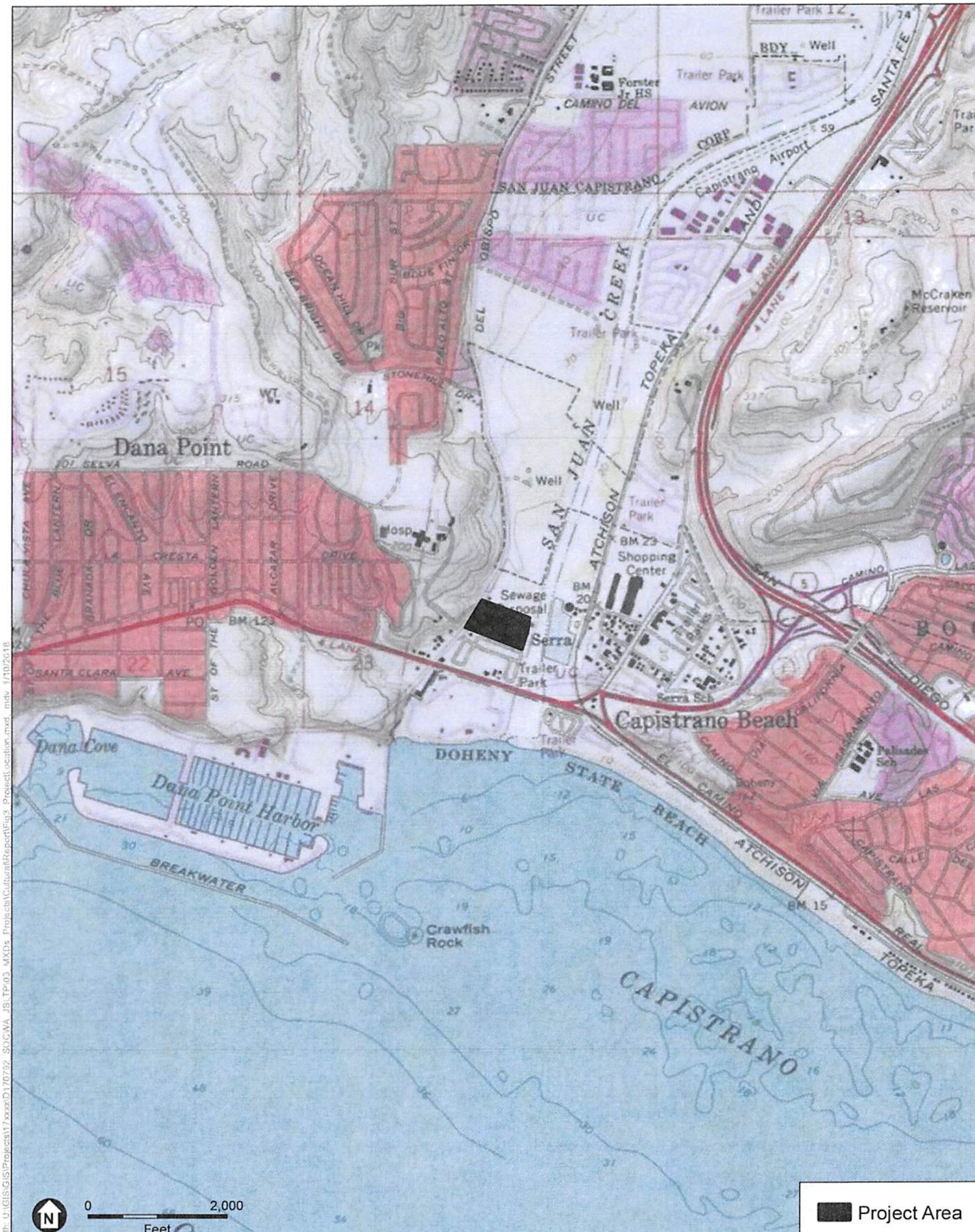
Roni Young, Associate Engineer
South Orange County Wastewater Authority
ryoung@socwa.com
JB Latham Treatment Plant
34156 Del Obispo Street
Dana Point, CA 92629

We look forward to working with you should you elect to engage in the consultation process.

Roni Young

Roni Young Grant

Attachment: Figure 3, Project Location



Topographic Quad: Dana Point, CA 7.5-minute

JBLTP Facility Improvements Project . D170792.00

Figure 3
Project Location

ESA

VIEJAS
TRIBAL GOVERNMENT

P.O Box 908
Alpine, CA 91903
#1 Viejas Grade Road
Alpine, CA 91901

Phone: 6194453810
Fax: 6194455337
viejas.com

March 19, 2018

Roni Young
Associate Engineer
South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

Re: JB Latham Treatment Plant Project

Dear Mr. Young,

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site has little cultural significance or ties to Viejas. We further recommend that you contact the tribe(s) closest to the cultural resources. We, however, request to be informed of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains in order for us to reevaluate our participation in the government-to-government consultation process.

Please do not hesitate to contact me if you have further questions. Please call Ernest Pingleton at 619-659-2314 or me at 619-659-2312, or email, epingleton@viejas-nsn.gov or rteran@viejas-nsn.gov. Thank you.

Sincerely,

Ray Teran, Resource Management
VIEJAS BAND OF KUMEYAAY INDIANS

Appendix D

Noise and Vibration Technical Report

ESA

J.B. LATHAM TREATMENT PLANT FACILITY IMPROVEMENTS PACKAGE B FINAL DESIGN

Noise and Vibration Technical Report

Prepared for

South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

February 2018

J.B. LATHAM TREATMENT PLANT FACILITY IMPROVEMENTS PACKAGE B FINAL DESIGN

Noise and Vibration Technical Report

Prepared for
South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

February 2018

Prepared by:
ESA
626 Wilshire Blvd. Suite 1100
Los Angeles, CA 90017

Project Location:
Dana Point (CA) USGS 7.5-minute Topographic Quad
Township 8 South, Range 8 West,
Unsectioned

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EXECUTIVE SUMMARY

The purpose of this Noise and Vibration Technical Report is to evaluate the potential short- and long-term noise and vibration impacts resulting from implementation of the South Orange County Wastewater Authority (SOCWA) JB Latham Treatment Plant (JBLTP) Facility Improvements Package B Final Design (project). The approximately 8.3-acre project site is generally located north of State Route 1 (Pacific Coast Highway), southwest of Interstate 5 (I-5), and east of Dana Point Harbor, in the City of Dana Point, Orange County, California.

The report summarizes the potential for the project to conflict with applicable noise and vibration regulations, standards, and thresholds. The findings of the analyses are as follows:

- The noise levels from construction of the project would not exceed significance thresholds at the nearest residential uses. Therefore, impacts would be less than significant.
- Construction vibration impacts would be potentially significant and mitigation measures would be required. With implementation of construction vibration mitigation measures, impacts would be reduced to less than significant. Thus, construction vibration impacts to structures and residential receptors would be less than significant.

JB LATHAM TREATMENT PLANT FACILITY IMPROVEMENTS PACKAGE B FINAL DESIGN

Noise and Vibration Technical Report

1.0 Introduction

SOCWA proposes improvements to the JBLTP, which include equipment and structure repairs, equipment and structure replacement, new piping, safety-related modifications, and structural demolition.

This report describes the existing ambient noise in the project area, identifies applicable noise regulations, and evaluates potential short- and long-term noise impacts associated with the build-out of the project. Additionally, this report provides background information on vibration and evaluates potential impacts associated with the project's contribution to ambient vibration levels. Where applicable, measures to mitigate or minimize noise and vibration impacts associated with the project are included. Information used to prepare this analysis was obtained from SOCWA, City of Dana Point General Plan and Noise Ordinance, and other sources identified herein.

1.1 Project Location

The project site is located within the existing JBLTP located at 34156 Del Obispo Street (**Figure 1**). The project site is located in an urbanized area of the City of Dana Point. North of the site is Del Obispo Park and the Dana Point Community Center. West of the site is Del Obispo Street and a residential community. To the south is a recently graded property that is under construction for residential condominiums, with Doheny Park Plaza further to the south adjacent to Pacific Coast Highway. To the east is San Juan Creek flood channel that has a width of approximately 260 feet. San Juan Creek Trail is located along the western bank of the San Juan Creek adjacent to the site, with an industrial area to the east of San Juan Creek.

SOURCE: Open Street Map, 2018.

SOCWA JB Latham Treatment Plant Project

Figure 1
Vicinity Location Map

ESA

2.0 Project Description

SOCWA proposes improvements to their JBLTP, which include equipment and structure repairs, equipment and structure replacements, new piping, safety-related modifications, and structural demolition as shown in **Figure 2**. The following describes in detail the improvements to be implemented:

1. Effluent Pump Station Piping Modifications. The 24-inch discharge pipeline from the 30-inch by 24-inch reducer section will be replaced with a 24-inch by 30-inch increaser section. The replacement includes the 24-inch check valve, actuator and pressure indicator. The flow meter will remain in place. The temporary handling of effluent during the replacement will occur.

2. Effluent Discharge Valves Replacement. Two effluent discharge valves connecting the Chlorine Contact Basin to the San Juan Creek Ocean Outfall will be replaced.

3. Secondary Sedimentation Basins Modifications (Secondary Clarifiers 10 through 13 on Figure 2). The rotating scum skimmers, telescoping valves and drain valve assembly will be replaced.

4. Secondary Sedimentation Basins Modifications (Secondary Clarifiers 1 through 9 on Figure 2). The chain and flight assembly (note that the drives have already been replaced) and telescoping valves will be replaced, and repairs to damaged concrete on the crosswalks adjacent to the drive unit will be provided.

5. Primary Effluent Channel. The basin protective coating will be replaced, the concrete surface and cracks will be repaired, the channel slid e gates with drop gate assemblies will be replaced, and the diamond plate covers, supporting angles and grating rebate will be replaced. Work along the channel diamond plate covers includes modification of aeration drain piping and foul air ducting above the deck.

6. Primary Sedimentation Basins (Primary Clarifiers 1 through 6 on Figure 2). The basin protective coating will be replaced, the concrete surfaces and cracks will be repaired, and the launders, scum beach, and scum skimmers, and basin and hatch covers will be replaced. The switches will be disconnected and all new electrical conduits (includes power supply to scum skimmer drives, basin lights and power receptacles) will be rerouted from the north side of the Primary Sedimentation Basins, along the east wall of the Basins through Primary Sludge Valve Tunnel to the motor control center in the Blower Room. There are four discharge valves per digester.

7. Plant 2 Primary Influent Channel. The lining, gates, rebate and diamond plates in the Influent Channel will be replaced. The covers of the Primary Sedimentation Basin will be temporarily removed during construction and the covers will be restored after the completion of the improvement at the Plant 2 Influent Channel.

8. Plant 1 Primary Influent Channel: The basin protective coating will be replaced, the concrete surface and cracks will be repaired, and the inlet gates, diamond plate covers and grating rebate

will be replaced. The primary sedimentation basins' chain and flight and collector drive control will be relocated, as necessary.

9. Safety Related Items for Liquids Facility. Various structures within the Liquids Facility portion of the treatment plant will include modifications to roofs, hatch-skylight, fixed ladders, and handrails.

10. Safety Related Items for Solids Facility. Various structures within the Solids Facility portion of the treatment plant will include modifications to roofs, hatch-skylight, fixed ladders, and handrails.

11. Modification of the Existing Thickening and Digestion System. The metal structures of the dissolved air floatation (DAF) units are known to have structural defects due to corrosion. This modification includes patching up structure, sand blasting and recoating the interior of the DAFs, replacement of DAF covers and handrails, and replacement and coating collector mechanism. This modification also includes an upgrade containing a dissolution tank, recirculation pump, compressor, thicken waste activated sludge (TWAS) pumps, aboveground piping and valves. The instrumentation and control system, all wiring, aboveground conduit and Motor Control Center (MCC) buckets are also included.

12. Centrate Drainage Pump Station and Discharge Line. The existing centrate piping runs between the Energy Recovery Building and Plant 1 Headworks Building. The original drainage line was modified in 2008, however the system is still subject to flow backing up. This improvement includes a pump, re-routed discharge line, pump station control and power supply.

13. Digesters 1 and 2 Mixing System Improvements. Improvements include replacement of the existing pumps and control valves. The existing mix pumps are to be replaced with chopper type pumps.

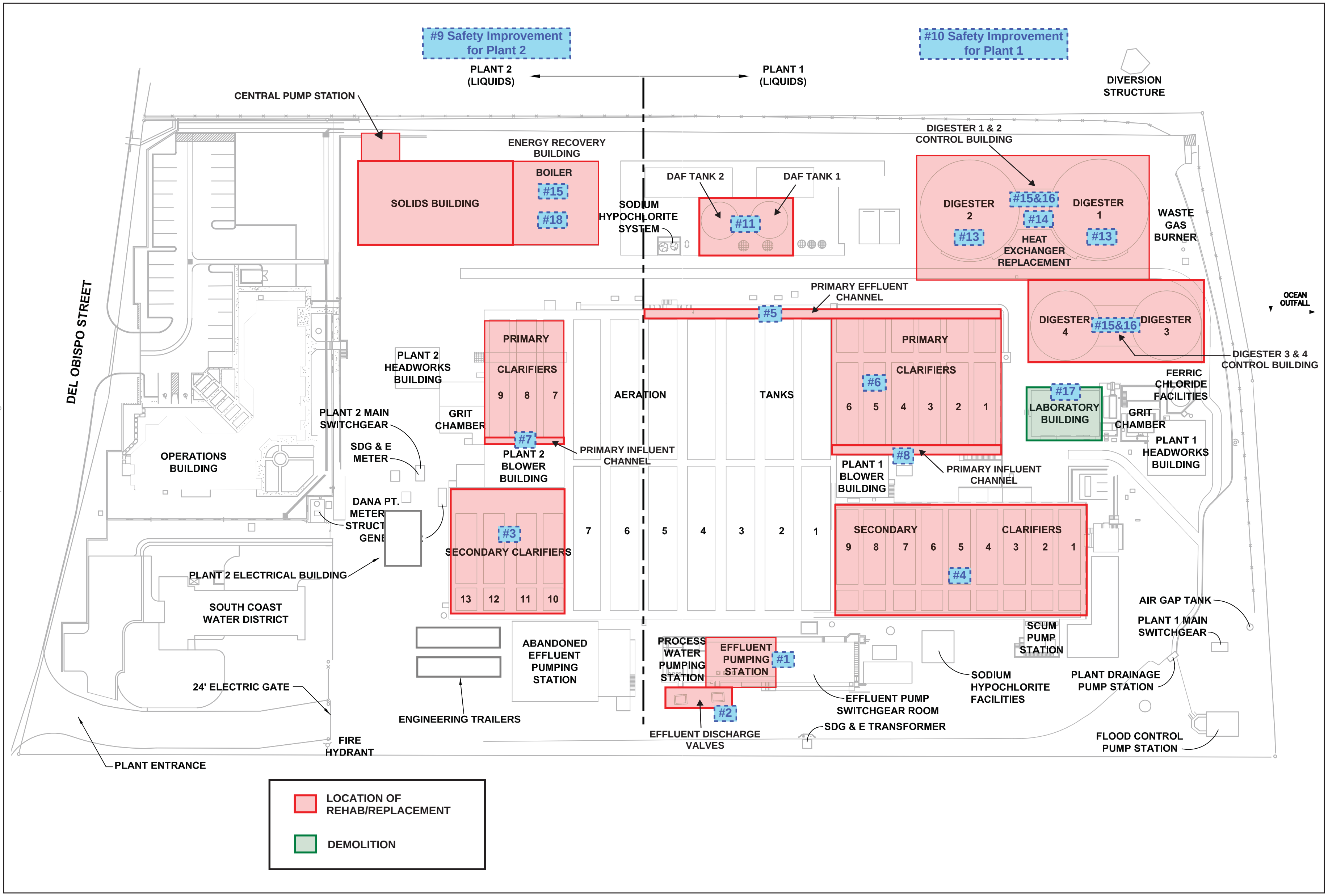
14. Heat Exchanger Replacement. The four existing heat exchangers located between Digesters 1 and 2 and between 3 and 4 will be replaced along with the aboveground piping.

15. Boilers Replacement. The boilers and control system located in the Digester 1 and 2 Control Building and Digester 3 and 4 Control Building will be replaced.

16. Digester Control Buildings. The gas monitoring system and lighting will be replaced and the roof will be removed and reconstructed at Digester Control Building 1 and 2. All HVAC equipment and penetrations through the roof will be replaced and a walkway on the roof will be reinforced at Digester Control Building 3 and 4. A new stairway for each digester to the top of Digesters 3 and 4 will be included.

17. Laboratory Demolition. Because SOCWA has shifted its laboratory function to the Regional Treatment Plant, the existing laboratory that dates back to the 1960's and has a dimension of approximately 47 feet by 33 feet by 12.7 feet tall will be demolished.

18. Energy Recovery Building Improvements. A 25-foot-long monorail system will be provided on the upper floor of the Energy Recovery Building to allow storage of equipment. The weight capacity of the monorail crane will be 2 tons. An independent support system for the monorail system will be provided on the ceiling. In addition, the existing built-up roof and skylight support curbs have aged and will be replaced.



SOURCE: Carollo Engineers, 2018

SOCWA JB Latham Treatment Plant Project

Figure 2
Site Plan

ESA

3.0 Environmental Setting

3.1 Noise Principles and Descriptors

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air). Noise is generally defined as unwanted sound (i.e., loud, unexpected, or annoying sound). Acoustics is defined as the physics of sound. In acoustics, the fundamental scientific model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. Acoustics addresses primarily the propagation and control of sound.

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

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

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear’s decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). A-weighting follows an international standard methodology of frequency deemphasis and is typically applied to community noise measurements. Some representative common outdoor and indoor noise sources and their corresponding A-weighted noise levels are shown in **Figure 3**.

3.2 Noise Exposure and Community Noise

An individual’s noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given instant in time. The noise levels presented in Figure 3 are representative of measured noise at a given instant in time; however, they rarely persist consistently over a long period of time. Rather, community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

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

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

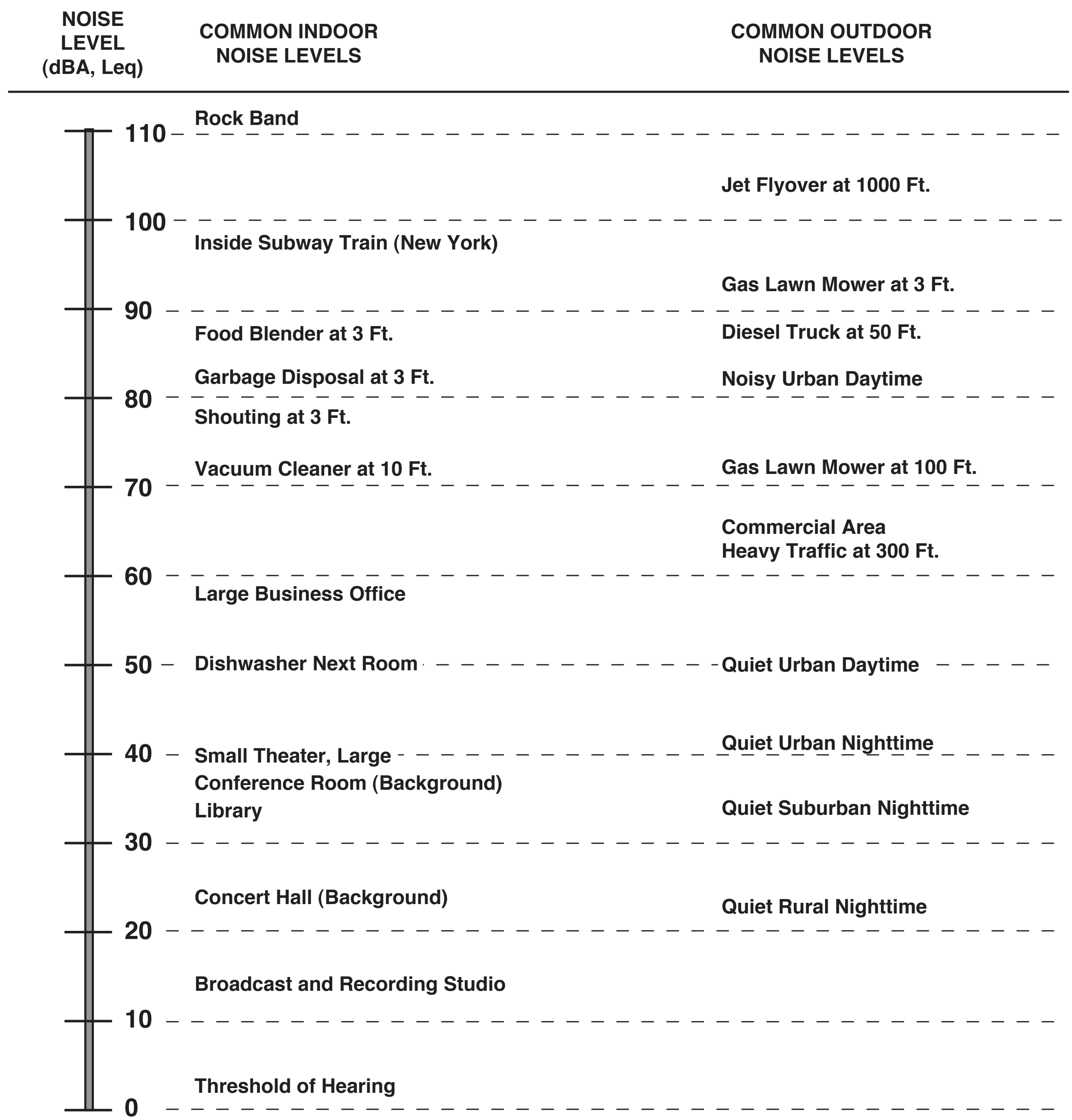
L_{max}: The maximum, instantaneous noise level experienced during a given period of time.

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

L_{x}: The noise level exceeded a percentage of a specified time period. For instance, L_{50} and L_{90} represent the noise levels that are exceeded 50 percent and 90 percent of the time, respectively.

L_{dn}: the average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dB to measured noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account nighttime noise sensitivity. The L_{dn} is also termed the day-night average noise level (DNL).

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



SOURCE: State of California, Department of Transportation (Caltrans), Technical Noise Supplement (TeNS). October 1998. Available: http://www.dot.ca.gov/hq/env/noise/pub/Technical Noise Supplement.pdf

SOCWA JB Latham Treatment Plant Project

Figure 3
Decibel Scale and Common Noise Sources

ESA

3.3 Effects of Noise on People

Noise is generally loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity that is a nuisance or disruptive. The effects of noise on people can be placed into four general categories:

- Subjective effects (e.g., dissatisfaction, annoyance);
- Interference effects (e.g., communication, sleep, and learning interference);
- Physiological effects (e.g., startle response); and
- Physical effects (e.g., hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. Interference effects of environmental noise refer to those effects that interrupt daily activities and include interference with human communication activities, such as normal conversations, watching television, telephone conversations, and interference with sleep. Sleep interference effects can include both awakening and arousal to a lesser state of sleep. With regard to the subjective effects, the responses of individuals to similar noise events are diverse and are influenced by many factors, including the type of noise, the perceived importance of the noise, the appropriateness of the noise to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

Overall, there is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction on people. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted (i.e., comparison to the ambient noise environment). In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships generally occur:

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

These relationships occur in part because of the logarithmic nature of sound and the decibel scale. The human ear perceives sound in a non-linear fashion hence the dB scale was developed. Because the dB scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. Under the dB scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two sources are each producing sound of the same loudness, the resulting sound level at a given distance would be approximately 3 dBA higher than one of the sources under the same conditions. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. Under the dB scale, three sources of equal loudness together produce a sound level of approximately 5 dBA louder than one source, and ten sources of equal loudness together produce a sound level of approximately 10 dBA louder than the single source.

3.4 Noise Attenuation

When noise propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on factors such as the type of noise source and the propagation path. Noise from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern; therefore, this type of propagation is referred to as "spherical spreading." Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dBA for acoustically "hard" sites and 7.5 dBA for "soft" sites for each doubling of distance from the reference measurement as their energy is continuously spread out over a spherical surface. Hard sites are those with a reflective surface between the source and the receiver, such as asphalt or concrete surfaces or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites.

Roadways and highways consist of several localized noise sources on a defined path, and hence are treated as "line" sources, which approximate the effect of several point sources. Noise from a line source propagates over a cylindrical surface, often referred to as "cylindrical spreading." Line sources (e.g., traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement.[1] Therefore, noise due to a line source attenuates less with distance than that of a point source with increased distance.

Additionally, receptors located downwind from a noise source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

3.5 Fundamentals of Vibration

Vibration can be interpreted as energy transmitted in waves through the ground or man-made structures. These energy waves generally dissipate with distance from the vibration source.

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

Because energy is lost during the transfer of energy from one particle to another, vibration becomes less perceptible with increasing distance from the source.

As described in the Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment*, ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard.[2] In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, heavy trucks traveling on rough roads, and construction activities such as blasting, pile-driving, and operation of heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. PPV is typically a factor of 1.7 to 6 times greater than RMS vibration velocity.[3] The decibel notation acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration sensitive equipment.

The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration levels exceed the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 in/sec PPV.[4]

In residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV). This level is well below the vibration velocity level threshold of perception for humans, which is approximately 65 VdB. A vibration velocity level of 75 VdB is considered to be the approximate dividing line between barely perceptible and distinctly perceptible levels for many people.[5]

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2 FTA, 2006. Transit Noise and Vibration Impact Assessment. May.
3 FTA, 2006. Transit Noise and Vibration Impact Assessment. May.
4 FTA, 2006. Transit Noise and Vibration Impact Assessment. May.
5 FTA, 2006. Transit Noise and Vibration Impact Assessment. May.

3.6 Existing Conditions

Some land uses are considered more sensitive to ambient noise levels than others are, due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. According to the City of Dana Point General Plan, residential areas are considered to be the most sensitive type of land use to noise and industrial/commercial areas are considered to be the least sensitive. Existing noise sensitive uses in the vicinity of the project site include the following:

- Residential Uses: single-family residences are located to the west of the project site along Del Obispo Street. Residential condominiums are under construction to the south of the project site along Del Obispo Street.

- Del Obispo Park and the Dana Point Community Center are located to the north of the project site and San Juan Creek Trail is located to the east of the project site.

Ambient Noise Levels

The predominant existing noise source surrounding the project site is roadway noise from Del Obispo Street. Ambient noise measurements were conducted at four 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 4**. Short-term (30-min) measurements were conducted at locations R1 through R4. Ambient sound measurements were conducted on Thursday, January 25, 2018, to characterize the existing noise environment in the project vicinity.

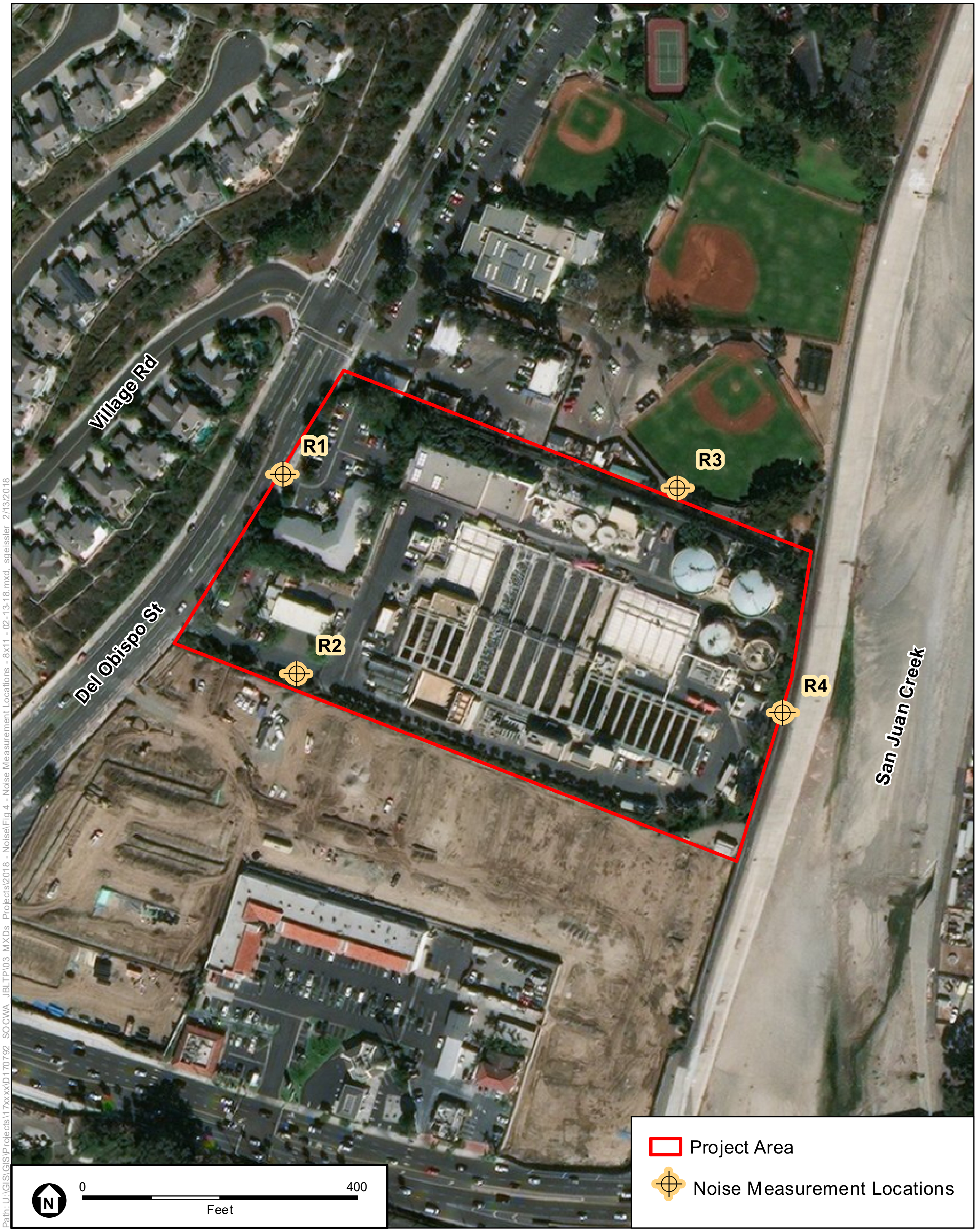
The ambient noise measurements were conducted using the Casella CEL-63X Sound Level Meter (“SLM”). The Casella CEL-63X is a Type 2 standard instrument as defined in the American National Standard Institute S1.4. All instruments were calibrated and operated according to the applicable manufacturer specification.

The microphone was placed at a height of 5 feet above the local grade, at the following locations as shown in Figure 4:

- <u>Measurement Location R1</u>: represents the existing noise environment of single-family residential uses west of the project site along Del Obispo Street. The SLM was placed on the west side of the project site along Del Obispo Street.
- <u>Measurement Location R2</u>: represents the existing noise environment of future residential condominiums south of the project site along Del Obispo Street. The SLM was placed on the southern boundary of the project site.

- <u>Measurement Location R3</u>: represents the existing noise environment of Del Obispo Park and the Dana Point Community Center north of the project site along Del Obispo Street. The SLM was placed on the southern boundary of Del Obispo Park.

- <u>Measurement Location R4</u>: represents the existing noise environment of San Juan Creek Trail. The SLM was placed on the eastern boundary of the project site along San Juan Creek Trail.



SOURCE: DigitalGlobe, 2016 (Aerial).

SOCWA JB Latham Treatment Plant Project

Figure 4
Noise Measurement Locations

ESA

Path: U:\GIS\GIS\Projects\17xxx\D170792_SOCWA_JBLTP\03_MXDs_Projects\2018 - Noise\Fig 4 - Noise Measurement Locations - 8x11 - 02-13-18.mxd, sgeissler 2/13/2018

A summary of noise measurement data provided in **Table 1, Summary of Ambient Noise Measurements**. As shown in Table 1, the existing ambient daytime noise levels ranged from 54.4 dBA Leq at R3 to 66.4 dBA Leq at R1.

TABLE 1
SUMMARY OF AMBIENT NOISE MEASUREMENT

Location, Duration, Existing Land Uses and, Date of Measurements	Daytime (7 A.M. to 10 P.M.) dBA L_{eq}
R1 – Single-family Residential Uses 1/25/18 (9:13 A.M. to 9:43 A.M.)/Thursday	66.4
R2 – Future Residential Condominiums 1/25/18 (9:53 A.M. to 10:23 A.M.)/Thursday	55.4
R3 – Del Obispo Park and the Dana Point Community Center 1/25/18 (10:27 A.M. to 10:57 A.M.)/Thursday	54.4
R4 – San Juan Creek Trail 1/25/18 (11:00 A.M. to 11:30 A.M.)/Thursday	58.0

SOURCE: ESA, 2018

Existing Groundborne Vibration Levels

Aside from periodic construction work that may occur throughout the City, other sources of groundborne vibration in the project site vicinity may include heavy-duty vehicular travel (e.g., refuse trucks, delivery trucks, etc.) on local roadways. Truck traffic at a distance of 50 feet typically generate groundborne vibration velocity levels of approximately 0.006 in/sec PPV[6], which would be below of the barely perceptible level of 0.0l in/sec PPV.[7]

3.7 Regulatory Setting

Federal

Federal Noise Standards

Under the authority of the Noise Control Act of 1972, the United States Environmental Protection Agency (USEPA) established noise emission criteria and testing methods published in Parts 201 through 205 of Title 40 of the Code of Federal Regulations (CFR) that apply to some transportation equipment (e.g., interstate rail carriers, medium trucks, and heavy trucks) and construction equipment. In 1974, the USEPA issued guidance levels for the protection of public health and welfare in residential land use areas[8] of an outdoor L_{dn} of 55 dBA and an indoor L_{dn} of 45 dBA. These guidance levels are not considered as standards or regulations and were developed without consideration of technical or economic feasibility. There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the project.

6 FTA, *Transit Noise and Vibration Impact Assessment*. May 2006.
7 Caltrans, *Transportation and Construction Vibration Guidance Manual*, September, 2013.
8 USEPA, *EPA Identifies Noise Levels Affecting Health and Welfare.* April 1974.

Under the Occupational Safety and Health Act of 1970 (29 U.S.C. §1919 et seq.), the Occupational Safety and Health Administration (OSHA) has adopted regulations designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise level exposure as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, ensuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

Federal Vibration Standards

The FTA has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities. The vibration damage criteria adopted by the FTA are shown in **Table 2, Construction Vibration Damage Criteria**.

TABLE 2
CONSTRUCTION VIBRATION DAMAGE CRITERIA

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

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

In addition, the FTA has also adopted standards associated with human annoyance for groundborne vibration impacts for the following three land-use categories: Vibration Category 1 – High Sensitivity, Vibration Category 2 – Residential, and Vibration Category 3 – Institutional. The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference. The vibration thresholds associated with human annoyance for these three land-use categories are shown in **Table 3, Groundborne Vibration Impact Criteria for General Assessment**. No vibration thresholds have been adopted or recommended for commercial and office uses.

TABLE 3
GROUNDBORNE VIBRATION IMPACT CRITERIA FOR GENERAL ASSESSMENT

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

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

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

State

California Noise Standards

The State of California does not have statewide standards for environmental noise, but the California Department of Health Services (DHS) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land use types. Noise compatibility by different land use types is categorized into four general levels: “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” and “clearly unacceptable.” For instance, a noise environment ranging from 50 dBA CNEL to 65 dBA CNEL is considered to be “normally acceptable” for multi-family residential uses, while a noise environment of 75 dBA CNEL or above for multi-family residential uses is considered to be “clearly unacceptable.” In addition, California Government Code Section 65302(f) requires each county and city in the State to prepare and adopt a comprehensive long-range general plan for its physical development, with Section 65302(g) requiring a noise element to be included in the general plan. The noise element must: (1) identify and appraise noise problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels.

The state has also established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (Title 24, California Code of Regulations). The noise insulation standards set forth an interior standard of 45 dBA CNEL in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dBA CNEL. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

California Vibration Standards

There are no state vibration standards. Moreover, according to the California Department of Transportation’s (Caltrans) *Transportation and Construction Vibration Guidance Manual*, there are no official Caltrans standards for vibration.[9] However, this manual provides guidelines that can be used as screening tools for assessing the potential for adverse vibration effects related to structural damage and human perception. The manual is meant to provide practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. The vibration criteria established by Caltrans for assessing structural damage and human perception are shown in **Table 4, Caltrans Vibration Damage Potential Threshold Criteria,** and **Table 5, Caltrans Vibration Annoyance Potential Criteria**, respectively.

TABLE 4
CALTRANS VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA

	Maximum PPV (in/sec)	
Structure and Condition	**Transient Sources**	**Continuous/Frequent Intermittent Sources**
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

NOTE: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

SOURCE: Caltrans, 2013. Transportation and Construction Vibration Guidance Manual. September.

TABLE 5
CALTRANS VIBRATION ANNOYANCE POTENTIAL CRITERIA

	Maximum PPV (in/sec)	
Structure and Condition	**Transient Sources**	**Continuous/Frequent Intermittent Sources**
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

NOTE: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

SOURCE: Caltrans, 2013. Transportation and Construction Vibration Guidance Manual. September.

9 Caltrans, *Transportation and Construction Vibration Guidance Manual*. September 2013.

Local

In California, local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence development plans, and noise ordinances set forth the specific standards and procedures for addressing particular noise sources and activities. General plans recognize that different types of land uses have different sensitivities toward their noise environment; residential areas are considered to be the most sensitive type of land use to noise and industrial/commercial areas are considered to be the least sensitive.

City of Dana Point

General Plan Noise Element

The City of Dana Point set exterior noise criteria for assessing the compatibility of residential uses with transportation facilities. The City requires that the interior areas for residences not exceed 45 dBA CNEL and that the exterior active use areas (such as backyards or patios) not exceed 65 dBA CNEL. Other short-term noise impacts, such as construction activities or on-site stationary sources, are regulated by the noise ordinance.

Municipal Code

The City's Noise Ordinance establishes the maximum permissible noise level that may intrude into a neighbor's property. The Noise Ordinance (added in 1992) establishes noise level standards for various land use categories affected by stationary noise sources. For Noise Zone 1, which includes the entire City, the exterior noise levels shall not exceed 55 dBA for more than 30 minutes in any hour during daytime hours between 7:00 a.m. and 10:00 p.m. For events occurring within shorter periods of time, the allowable noise levels are adjusted upward accordingly. For events lasting equal to or less than 30 minutes but more than 15 minutes, the exterior noise shall not exceed 60 dBA during daytime hours. For events lasting equal to or less than 15 minutes but more than 5 minutes, the exterior noise shall not exceed 65 dBA during daytime hours. For events lasting equal to or less than 5 minutes but more than 1 minute, the exterior noise shall not exceed 70 dBA during daytime hours. At any time during daytime hours, the exterior noise shall not exceed 75 dBA. During the nighttime hours between 10:00 p.m. and 7:00 a.m. the following day, the above noise standard levels are reduced by 5 dBA. 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 interior noise levels for Noise Zone 1 areas shall not exceed 55 dBA for events lasting up to 15 minutes but more than 5 minutes during daytime hours. For events lasting equal to or less than 5 minutes but more than 1 minute, the interior noise shall not exceed 60 dBA during daytime hours.

At any time during daytime hours, the interior noise shall not exceed 65 dBA. During the nighttime hours between 10:00 p.m. and 7:00 a.m. the following day, the above noise standard levels are reduced by 5 dBA. In the event the ambient noise level exceeds either of the first two 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 third noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

The City of Dana Point Municipal Code (DPMC) noise ordinance has not established any upper limits for construction noise because it is temporary and will cease to occur after completion of the project construction. The Noise Ordinance regulates the timing of construction activities and includes special provisions for sensitive land uses. Construction activities are allowed between the hours of 7:00 a.m. and 8:00 p.m., Monday through Saturday. No construction is permitted outside of these hours or on Sundays and federal holidays. Additionally, Section 8.01.250 (Time of Grading Operations) of the City's Municipal Code limits grading and equipment operations within 0.5 mile of a structure for human occupancy to the hours of 7:00 a.m. and 5:00 p.m. during the weekdays and are prohibited on Saturdays, Sundays, and City recognized holidays.

4.0 Impacts and Mitigation Measures

This section describes the impact analysis relating to noise and vibration impacts for the project. It describes the methods and applicable thresholds used to determine the impacts of the project.

4.1 Methodology

Onsite Construction Noise Levels

Project construction noise levels were estimated using the Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM) and construction equipment information provided by the SOCWA. Potential noise levels were identified for the nearest sensitive receptors located offsite based on their respective distances from the project site. To present a conservative impact analysis, the estimated noise levels were calculated for a scenario in which all construction equipment was assumed to be operating simultaneously and located at the construction area nearest to the affected receptors. These assumptions represent the worst-case noise scenario because construction activities would typically be spread out throughout the project site and would be located further away from the affected receptors. The estimated noise levels at the affected receptors were then analyzed against the construction noise standards established in the DPMC.

Offsite Construction Roadway Noise Levels

Off-site construction traffic noise levels were calculated based on construction traffic information provided by the SOCWA. Del Obispo Street was selected for analysis and is expected to be most directly impacted by construction-related traffic. Noise levels along Del Obispo Street were calculated using the FHWA-RD-77-108 model and traffic volumes provided by the SOCWA.

Operational Noise

Implementation of the project would not change any outdoor stationary noise sources. In addition, employee and truck trips to support daily operations of the facility would not increase with implementation of the proposed project. Therefore, operational noise impacts are not discussed further.

Groundborne Vibration Levels

Groundborne vibration levels resulting from construction activities at the project site were estimated using data in the FTA *Transit Noise and Vibration Impact Assessment* document.[10] Potential vibration levels resulting from construction of the project are identified for offsite locations that are sensitive to vibration (i.e., existing residential buildings) based on their distance from construction activities.

4.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, a project would have a significant effect on the environment with respect to noise and/or ground-borne vibration if it would result in:

- Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to, or generation of, excessive ground-borne vibration or ground-borne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- Exposure of people residing or working in the project area to excessive noise levels (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); or
- Exposure of people residing or working in the project area to excessive noise levels (for a project within the vicinity of a private airstrip).

Noise Criteria

As set forth in the DPMC, a project would normally have a significant impact on noise levels from construction if construction activities are undertaken between 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or federal holidays. In addition, a project would normally have a significant impact on noise levels from construction if grading and equipment operations occur between the hours of 5:00 p.m. and 7:00 a.m. during the weekdays and on Saturdays, Sundays, and City recognized holidays.

- Project construction activities occur between the hours of 5:00 p.m. and 7:00 a.m. any day of the week, Saturday, or anytime in holidays (City observed);

[10] FTA, *Transit Noise and Vibration Impact Assessment*. May 2006.

The City's Municipal Code and Noise Element do not include a significance threshold to assess construction noise impacts. Therefore, a noise threshold utilizing the OSHA agency limits of noise exposure is used. Identifying a significance threshold using an OSHA standard is considered conservative. The OSHA standard is limiting noise exposure of workers to 90 dB or less over eight continuous hours, or 105 dB or less over one continuous hour.[11] For the purpose of analyzing potential noise impacts using the OSHA established noise thresholds, on-site construction noise levels that could expose residents or workers to more than 90 dB for over eight continuous hours, or more than 105 dB for over one continuous hour are considered a significant noise impact.

Substantial increase in construction noise levels is defined as follows:

- Project construction activities expose residents or workers to more than 90 dBA for over eight continuous hours, or more than 105 dB for over one continuous hour.

Vibration Criteria

The *CEQA Guidelines* do not define the levels at which groundborne vibration or groundborne noises are considered "excessive." The City of Dana Point currently does not have a significance threshold to assess vibration impacts during construction. Additionally, there are no federal, state, or local vibration regulations or guidelines directly applicable to the project. However, publications of the FTA and Caltrans are two of the seminal works for the analysis of vibration relating to transportation and construction-induced vibration. The project is not subject to FTA or Caltrans regulations; nonetheless, these guidelines serve as a useful tool to evaluate vibration impacts. For the purpose of this analysis, the vibration criteria for structural damage and human annoyance established in the most recent Caltrans' *Transportation and Construction Vibration Guidance Manual*, which are shown previously in Tables 4 and 5, respectively, are used to evaluate the potential vibration impacts of the project on nearby sensitive receptors.

Given the nature of the project, "excessive" groundborne vibration or noises that could occur at the project site would only be those generated during project construction. Construction activities at the project site have the potential to generate low levels of groundborne vibration as the operation of heavy equipment (i.e., dozer, excavators, backhoes, haul trucks, etc.) generates vibrations that propagate through the ground and diminish in intensity with distance from the source. No high-impact activities, such as pile driving or blasting, would be used during project construction. Implementation of the project would not change any onsite operations. Therefore, the groundborne vibration analysis presented in this report is limited to the project's construction activities.

[11] California Occupational Safety and Health Administration (OSHA) requirements, 2017.

4.3 Project Impacts

Impact 1: The project would not result in the 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.

Construction Noise

Onsite Construction Noise

Construction of the proposed project would require the use of heavy equipment at the project site. During each stage of construction, there would be a different mix of equipment. As such, construction activity noise levels at and near the project site would fluctuate depending on the particular type, number, and duration of use of the various pieces of construction equipment.

Individual pieces of construction equipment anticipated during Project construction could produce maximum noise levels of 74 dBA to 90 dBA L_{max} at a reference distance of 50 feet from the noise source, as shown in **Table 6, Construction Equipment Noise Levels**. 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 6. The usage factors are based on FHWA's RCNM User's Guide.[12]

TABLE 6
CONSTRUCTION EQUIPMENT NOISE LEVELS

Construction Equipment	Noise Level at 50 Feet (dBA, Lmax)	Estimated Usage Factor, %
Aerial Lift	75	20%
Air Compressor	78	50%
Backhoe	80	40%
Compactor (Ground)	83	20%
Concrete Mixer Trucks	79	40%
Concrete Saw	90	20%
Cranes	81	40%
Dozer	82	40%
Excavators	81	40%
Forklift	75	10%
Paver	77	50%
Sand Blaster	85	50%
Welders	74	40%

Source: FHWA Roadway Construction Noise Model, 2006.

During project construction, the nearest offsite sensitive receptors that would be exposed to increased noise levels would be the existing single-family residential uses and future residential condominiums located in proximity to the project site. Specifically, the nearest offsite noise sensitive receptors include the following:

[12] Federal Highway Administration, Roadway Construction Noise Model User's Guide, 2006.

- Single-family residences along Del Obispo Street approximately 250 feet west of the project construction site; and
- Future residential condominiums along Del Obispo Street approximately 30 feet south of the project construction site.
- Del Obispo Park and the Dana Point Community Center approximately 30 feet north of the project construction site.
- San Juan Creek Trail approximately 30 feet east of the project construction site.

Over the course of a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are being operated concurrently. As discussed previously, the project's estimated construction noise levels were calculated for a scenario in which all construction equipment was assumed to be operating simultaneously and some of them located at the construction area nearest to the affected receptors to present a conservative impact analysis. The estimated noise levels at the offsite sensitive receptors were calculated using the FHWA's RCNM, and were based on the concurrent operation of 15 pieces of equipment (i.e., dozer, backhoe, excavator, cranes, concrete truck, etc.) which is considered a worst-case evaluation because the project would use less overall equipment on a daily basis, and as such would generate lower noise levels. **Table 7, Estimated Construction Noise Levels at Offsite Sensitive Uses,** shows the estimated construction noise levels that would occur at the nearest offsite sensitive uses during a peak day of construction activity at the project site.

TABLE 7
ESTIMATED CONSTRUCTION NOISE LEVELS AT OFFSITE SENSITIVE USES

Offsite Sensitive Land Uses	Location	Approximate Distance to Project Construction Site (ft.)[1]	Estimated Maximum Construction Noise Levels (dBA L_{eq})
R1: Single-family residential uses	West of the project site	250	66[2]
R2: Future residential condominiums	South of the project site	30	81[2]
R3: Del Obispo Park and Dana Point Community Center	North of the project site	30	86
R4: San Juan Creek Trail	East of the project site	30	86

1 The distance represents the nearest construction area on the project site to the property line of the offsite receptor.
2 Receptors are partially shielded from the construction site by existing walls; and such shielding is included in the analyses representing a 5 dBA reduction in noise levels.
3 The significance thresholds are the lowest daytime ambient noise levels as shown in Table 1 plus 5 dBA.

SOURCE: ESA, 2016.

As discussed above, the noise threshold utilizing the OSHA standard limits of noise exposure is being used. This standard is 90 dB or less over eight continuous hours, or 105 dB or less over one continuous hour. As shown in Table 7, the estimated combined construction equipment noise level would be a maximum of 86 dBA over a course of one day (i.e., 8 hours). This noise level would not exceed the noise level standard of 90 dB over 8 continuous hours. Therefore, construction noise impacts would be less than significant.

Off-Site Construction Traffic Noise

Delivery truck and haul truck trips would occur throughout the construction period. Trucks traveling to and from the project site would be required to travel along Del Obispo Street. It is anticipated that a maximum of approximately 20 worker's vehicle trips and 10 truck trips would occur per day.

The project's construction related traffic would generate noise levels of approximately 48.9 dBA L_{eq} at along Del Obispo Street. As shown in Table 1, the existing noise levels along Del Obispo Street is 66.4 dBA L_{eq}. Noise levels of 48.9 dBA L_{eq} generated by construction-related traffic as shown in Appendix B would increase the ambient noise levels by 0.1 dBA along Del Obispo Street when combining the ambient noise levels and noise from project construction traffic. Additionally, the construction is temporary in nature and would only take place for temporarily after which the project would cease to have any significant lasting noise impact on the surrounding areas from construction trips. Therefore, off-site construction traffic noise impacts would be less than significant.

Impact 2: The project would not expose persons to, or generate, excessive ground-borne vibration or ground-borne noise levels. (Less than Significant)

Construction activities at the project site have the potential to generate low levels of groundborne vibration as the operation of heavy equipment (i.e., compactor, backhoe, dozer, excavators, haul trucks, etc.) generates vibrations that propagate though the ground and diminish in intensity with distance from the source. No high-impact activities, such as pile driving or blasting, would be used during project construction. The nearest offsite receptors to the project site that could be exposed to vibration levels generated from project construction include future residential condominiums south of the project site. These residential condominiums are approximately 45 feet from the nearest construction area on the JBLTP. Groundborne vibrations from construction activities very rarely reach the levels that can damage structures, but they may be perceived in buildings very close to a construction site.

The PPV vibration velocities for several types of construction equipment, along with their corresponding RMS velocities (in VdB), that can generate perceptible vibration levels are identified in **Table 8, Vibration Source Levels For Construction Equipment**. Based on the information presented in Table 8, vibration velocities could range from 0.003 to 0.089 in/sec PPV at 25 feet from the source of activity.

TABLE 8
VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Approximate PPV (in/sec) 25 Feet	50 Feet	60 Feet	75 Feet	100 Feet	Approximate RMS (VdB) 25 Feet	50 Feet	60 Feet	75 Feet	100 Feet
Large Bulldozer	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Concrete Mixer Trucks	0.076	0.027	0.020	0.015	0.010	86	77	75	72	68
Small Bulldozer	0.003	0.001	0.0008	0.0006	0.0004	58	49	47	44	40

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

Table 9, Groundborne Vibration Levels at Offsite Sensitive Uses Compared to Caltrans' and FTA Vibration Damage Potential Threshold, shows the estimated construction-related groundborne vibration levels that could occur at the nearest offsite structures during construction at the project site and a comparison to the identified significance threshold.

As shown in Table 9, the vibration velocities forecasted to occur at the offsite sensitive receptors could potentially reach 0.037 in/sec PPV (or 79 VdB) at the nearest multiple-family residential (condominium) uses.

TABLE 9
GROUNDBORNE VIBRATION LEVELS AT OFFSITE SENSITIVE USES COMPARED TO CALTRANS' AND FTA VIBRATION DAMAGE POTENTIAL THRESHOLD

Offsite Sensitive Land Use	Approximate Distance to Project Site (ft.)[a]	Estimated PPV (in/sec)/VdB	Caltrans' Vibration Damage Potential Threshold, PPV (in/sec)[b]	FTA Vibration Damage Potential Threshold, PPV (in/sec)[c]	Exceed Caltrans' or FTA Vibration Threshold? (Yes or No)
Future residential condominiums south of the project site	30	0.037/79	0.5	0.5	No

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

a Approximate distances are measured from the nearest construction area within the project site where vibration levels would be generated to the nearest offsite structure.
b Caltrans' Vibration Damage Potential Thresholds were taken from Table 4.
c FTA Vibration Damage Potential Thresholds were taken from Table 2.

SOURCE: ESA, 2018.

Under the FTA construction vibration damaged criteria, the existing residential structures are considered "reinforce-concrete, steel or timber (no plaster)". With respect to the vibration sources associated with project construction, it is anticipated that continuous/frequent intermittent sources of vibration, as defined under Caltrans' criteria, would occur from compaction activities at the project site, although no pile-driving would be required. As such, the vibration level criteria for continuous/frequent intermittent sources are used in this analysis.

Based on the information shown in Table 9, which shows an estimated PPV of 0.067 in/sec, none of the existing offsite residential structures (considered as “new residential structures” and “reinforced-concrete, steel or timber” under the Caltrans’ and FTA construction vibration damage criteria, respectively) located south of the project site would be exposed to PPV groundborne vibration levels exceeding the FTA and Caltrans’ 0.5 in/sec damage criteria as shown in Table 3 and Table 4, respectively. As such, the vibration impacts at these residential structures would be less than significant.

With respect to human annoyance, the City Noise Element identifies residential areas as noise-sensitive land uses. Currently, sensitive uses that are located nearest to the project site include the multiple-family uses immediately south of the project site. Under the Caltrans’ vibration annoyance potential criteria (refer to Table 5), vibration levels exceeding 0.04 in/sec PPV for continuous/frequent intermittent sources would be considered distinctly perceptible. In addition, under the FTA vibration impact criteria for general assessment, residential receptors are considered to be a Category 2 land use (refer to Table 3). Vibration levels exceeding 80 VdB for infrequent events would be considered an impact at land uses under this FTA category. As shown in Table 9, the future residential receptors located immediately south of the project site would be exposed to vibration levels of 0.037 in/sec PPV (or 79 VdB) which would not exceed the Caltrans’ 0.04 in/sec PPV distinctly perceptible threshold and would not exceed the FTA’s 80 VdB impact threshold. Thus, vibration impacts related to human annoyance would be less than significant.

Impact 3: The project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

As discussed previously under Section 4.0, implementation of the project would not change any operation of the project. Therefore, operational noise impacts are not discussed further. No impact would occur.

Impact 4: The project would not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

As discussed previously under Impact 1, the Project’s construction activities could expose the noise sensitive receptors. As set forth in Thresholds of Significance, a project would normally have a significant impact on noise levels from construction if the project construction activities expose residents or workers to more than 90 dBA for over eight continuous hours, or more than 105 dB for over one continuous hour. It was determined that construction noise levels would not expose the noise sensitive receptors or workers to more than 90 dBA for over eight continuous hours at the nearest offsite sensitive receptors. Thus, short-term noise impacts from construction would be less than significant at these sensitive offsite locations.

Impact 5: 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?

The nearest airport to the project area is the John Wayne Airport, located approximately 17 miles to the north. 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.

Impact 6: 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?

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

5.0 Conclusion

Construction noise levels associated with the project would not exceed the significance threshold at the studied offsite sensitive locations and construction activities associated with the project would, therefore, not expose persons to, or generate noise and vibration levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Construction vibration impacts would be less than significant related to structural damage and human annoyance. Therefore, construction noise and vibration impacts would be less than significant.

6.0 References

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

Caltrans, *Transportation and Construction Vibration Guidance Manual*. September 2013.

Federal Highway Administration, Roadway Construction Noise Model User’s Guide, 2006.

FTA, 2006. Transit Noise and Vibration Impact Assessment. May.

USEPA, *EPA Identifies Noise Levels Affecting Health and Welfare*. April 1974.

Appendix A
On-Site Construction Noise Calculations

Project: SOCWA JB Latham Treatment Plant Project

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				R1					R2				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Effluent Pump Station Modifications					**66**	***66***				**81**	***81***		
Dozer	1	82	40%	250	63	59	62	5	30	81	77	80	5
Excavators	1	81	40%	250	62	58	61	5	30	80	76	79	5
Cranes	2	81	40%	350	62	58	61	5	130	71	67	70	5
Compactor (Ground)	1	83	20%	350	61	54	57	5	130	70	63	66	5
Forklift	2	75	10%	350	56	46	49	5	130	65	55	58	5
Backhoe	1	80	40%	450	56	52	55	5	230	62	58	61	5
Concrete Mixer Trucks	1	79	40%	450	55	51	54	5	230	61	57	60	5
Air Compressor	1	78	50%	450	54	51	54	5	230	60	57	60	5
Welders	1	74	40%	450	50	46	49	5	230	56	52	55	5
Concrete Saw	1	90	20%	450	66	59	62	5	230	72	65	68	5
Aerial Lift	1	75	20%	450	51	44	47	5	230	57	50	53	5
Sand Blaster	1	85	50%	450	61	58	61	5	230	67	64	67	5
Paver	1	77	50%	450	53	50	53	5	230	59	56	59	5

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Project: SOCWA JB Latham Treatment Plant Project

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				R3					R4				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Effluent Pump Station Modifications					**86**	***86***				**86**	***86***		
Dozer	1	82	40%	30	86	82	85	0	30	86	82	85	0
Excavators	1	81	40%	30	85	81	84	0	30	85	81	84	0
Cranes	2	81	40%	130	76	72	75	0	130	76	72	75	0
Compactor (Ground)	1	83	20%	130	75	68	71	0	130	75	68	71	0
Forklift	2	75	10%	130	70	60	63	0	130	70	60	63	0
Backhoe	1	80	40%	230	67	63	66	0	230	67	63	66	0
Concrete Mixer Trucks	1	79	40%	230	66	62	65	0	230	66	62	65	0
Air Compressor	1	78	50%	230	65	62	65	0	230	65	62	65	0
Welders	1	74	40%	230	61	57	60	0	230	61	57	60	0
Concrete Saw	1	90	20%	230	77	70	73	0	230	77	70	73	0
Aerial Lift	1	75	20%	230	62	55	58	0	230	62	55	58	0
Sand Blaster	1	85	50%	230	72	69	72	0	230	72	69	72	0
Paver	1	77	50%	230	64	61	64	0	230	64	61	64	0

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Appendix B

Off-Site Construction Traffic Noise Calculations

Project: SOCWA JB Latham Treatment Plant Project

Off-site Construction Traffic Noise

Roadway/Segment	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Del Obispo Street			30	51.2	48.9	47.5	48.2	45.9	44.5
0			0	-	-	-	-	-	-
0			0	-	-	-	-	-	-
0			0	-	-	-	-	-	-
0			0	-	-	-	-	-	-

Roadway/Segment	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
			0	-	-	-	-	-	-
			0	-	-	-	-	-	-
			0	-	-	-	-	-	-
			0	-	-	-	-	-	-
			0	-	-	-	-	-	-

Roadway/Segment	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
			0	-	-	-	-	-	-
			0	-	-	-	-	-	-
			0	-	-	-	-	-	-
			0	-	-	-	-	-	-
			0	-	-	-	-	-	-

CNEL

Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project Increment	Cumulative Increment	Project Increment	Cumulative Increment
Del Obispo Street	-	-	-	-
0	-	-	-	-
0	-	-	-	-
0	-	-	-	-
0	-	-	-	-