

# OCEAN OUTFALL SYSTEM REHABILITATION/OUTFALL LOW FLOW PUMP STATION (PROJECT NO. J-117B)

Initial Study/Mitigated Negative Declaration

Prepared for  
Orange County Sanitation District

July 2017





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# Section 1: Introduction

The Orange County Sanitation District (OCSD) proposes to implement Ocean Outfall System Rehabilitation/Outfall Low Flow Pump Station (Project No. J-117B; referred to herein as the “proposed project”) at their Plant 2 wastewater treatment facility located in Huntington Beach, California. The existing Ocean Outfall System (OOS) at Plant 2 consists of various facilities including the Ocean Outfall Booster Station (OOBS). After over 25 years of operation, much of the OOBS and the Effluent Pump Station Annex (EPSA) equipment at Plant 2 are at the end of their useful life. In addition, the OOBS is currently oversized for dry weather flows due to advances in water reclamation, necessitating construction of the Low Flow Pump Station as well as a new Plant Water Pump Station.

## 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), OCSD, 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 OCSD. OCSD will consider any comments received as part of the proposed project’s environmental review and include them with the CEQA documentation for consideration by the OCSD Board of Directors.

## 1.2 Purpose

Acting as the CEQA Lead Agency, OCSD has prepared this IS/MND to provide the public and responsible agencies with information about the potential environmental impacts associated with implementation of the proposed project. This IS/MND was prepared in compliance with Sections 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 *Draft Preliminary Design Report for Contract No. J-117B, Outfall Low Flow Pump Station* (Brown and Caldwell 2016) and *Draft Preliminary Design Report Addendum, Plant Water Pump Station* (Brown and Caldwell 2017).

## Section 2: Project Description

### 2.1 Project Location and Setting

The proposed project would occur entirely within the existing OCSD Plant 2 wastewater treatment facility, located in northern Orange County at 22212 Brookhurst Street, Huntington Beach, CA 92646 (**Figure 1**). Plant 2 is bounded by Hamilton Avenue to the north and Brookhurst Street to the west. The Santa Ana River and Santa Ana River Trail are located immediately east of the facility. Huntington Beach Wetlands, Pacific Coast Highway, and the Pacific Ocean area located south of Plant 2. Residential neighborhoods are located to the north and west, and south of the Talbert Regional Park and open space on the east side of the Santa Ana River.

The project area is specifically located within the eastern portion of Plant 2, immediately north of the existing OOBS and immediately south of the proposed Orange County Water District (OCWD) Groundwater Replenishment System (GWRS) Effluent Reuse Pump Station. The project area is depicted on **Figure 2** and totals approximately 2 acres. This project area captures the footprint and associated construction work area needed to construct the new pump station facility. As described herein, the proposed project also includes improvements at the existing OOBS, Central Power Generation Building (Cen Gen), EPSA, and Standby Power Facility (SPF).

The City of Huntington Beach General Plan identifies the Plant 2 site as having a Public (P) land use designation and is zoned for Industrial Limited (IL) and Residential Agriculture with an Oil Overlay (RA-O). Plant 2 is also located within the City of Huntington Beach's Coastal Zone and is subject to the City's Local Coastal Program.

The closest residences to the project area are single family homes located approximately 1,300 feet to the west and across Brookhurst Street, and single family homes located approximately 2,800 feet to the south and across the Santa Ana River. Recreational uses along the Santa Ana River bike path are located within 50 feet east of the project area.





SOURCE: Bing Maps; ESA, 2017.

Ocean Outfall System Rehabilitation/Outfall Low Flow Pump Station (Project No. J-117B) . 161009

**Figure 1**  
Regional Location



SOURCE: Google Earth Pro, 2017; ESA, 2017.

Ocean Outfall System Rehabilitation/Outfall Low Flow Pump Station (Project No. J-117B) . 161009

**Figure 2**  
Site Location

## 2.2 Description of Project Elements

The proposed project involves construction of a new joint Outfall Low Flow Pump Station (LOFLO PS)/Plant Water Pump Station (PWPS) facility and rehabilitation of the existing OOBS, Cen Gen, EPSA, and SPF to repair and improve the reliability and efficiency of the OOS at Plant 2 (Brown and Caldwell 2016, 2017). The elements of the proposed project are described further below.

### 2.2.1 New Joint Low Flow Pump Station/Plant Water Pump Station Facility

A new joint LOFLO PS/PWPS facility would be constructed in an east-west orientation within Plant 2, north of the existing OOBS and Cen Gen. **Figure 3** depicts the proposed layout of the new joint LOFLO PS/PWPS facility. In addition to the LOFLO PS and PWPS, the facility would include a common electrical room, electrical transformers, and an outdoor strainer area. The building housing the pump stations and common electrical room would be approximately 7,200 square feet (excluding the outdoor strainer area and electrical transformers) and approximately 40 feet above grade in height. The building architecture would be a fluted exterior concrete finish similar to that of the existing buildings at Plant 2. The total footprint of the facility (including the outdoor strainer area and electrical transformers) would be approximately 12,800 square feet. The facility will also include:

- Motor stands to allow motors to be temporarily stored during maintenance activities
- Bridge cranes for moving motors, valves, and piping spools within the pump rooms
- Truck access to allow loading of heavy items onto a truck using the bridge crane
- Skylights over the pumps for removal using a mobile crane
- Enhanced natural lighting using transoms and skylights
- Stair access to the lower room roof for maintenance of heating, ventilating, and air conditioning (HVAC) equipment



The LOFLO PS would be constructed to handle daily flows to the ocean. The new LOFLO PS would be designed to fill the gap where the existing pumps cannot operate efficiently within their manufacturer-recommended operating parameters. The new LOFLO PS would consist of up to four vertical-column, propeller-type, variable speed pumps. Each pump would have a capacity of approximately 40 million gallons per day (mgd); thus, the combined capacity of the four pumps would be up to approximately 120 mgd. The feed to the LOFLO PS would be a 120-inch-pipeline, 145 feet in length from a junction structure to be constructed at the existing 120-inch-diameter trickling filter/solids contact secondary effluent pipeline located east of the proposed facility and running parallel to the Santa Ana River. An 84-inch-diameter discharge pipeline from the LOFLO PS would be constructed and connected to the north end of the common discharge header from OOBS. The discharge pipeline would be approximately 155 feet in length.

The PWPS would be constructed to prevent non-reclaimable plant water from mixing with reclaimable flows. This PWPS would replace the existing PWPS facilities at Plant 2 located southwest of the project area. The new PWPS would consist of up to four vertical turbine, variable speed pumps. A fifth pump bay is included in case a future pump is needed. Each pump would have a capacity of approximately 2.67 mgd; thus, the combined capacity of the four pumps would be up to approximately 10 mgd. The feed to the PWPS would be a 36-inch-steel pipeline, 73 feet in length from the same junction structure to be constructed at the existing 120-inch-diameter trickling filter/solids contact secondary effluent pipeline noted above for the LOFLO PS. Effluent from the PWPS would be conveyed using a new 24-inch-diameter pipeline and route the flow through the four new strainers and ultimately discharge to a 24-inch-diameter pipeline that will be constructed and connected to the existing 12-inch Plant Water loop and Cen Gen cooling water feed located in the basement of the OOBS and Cen Gen.

The new PWPS would combine the plant water loop and Cen Gen cooling water systems into one with shared pumps and strainers. An outdoor strainer area would be located adjacent to and west of the PWPS and north of the LOFLO PS. The new strainers installed in this area would include screens to filter water flowing throughout the system. There would be a total of four strainers, two in operation and two on standby. The strainers would be sized to accommodate the PWPS maximum design flow of 11 mgd with two units on standby. A clearance of 3 to 5 feet between each strainer will be maintained to allow for adequate space for operators and maintenance. Similar to the existing strainer setup, a check valve would be located on the discharge header to prevent backflow into the strainers. A bridge crane would be installed to remove the strainers, strainer covers, and other equipment such as valves for maintenance as needed. The strainers will have both inlet and outlet piping located through the side of the strainer body. If the PWPS needs to be taken out of service, it will be possible to use temporary piping and pumps to convey Trickling Filter Solids Contact (TF/SC) effluent from the shared junction structure on the 120-inch pipeline to the 24-inch PWPS discharge header pipe and plant water loop piping.

The common electrical room and switchgear would be located south of the PWPS and east of the LOFLO PS. The electrical room would be sized to accommodate electrical gear including variable frequency drives (VFDs) corresponding to four 400 horsepower motors of the PWPS and four 200 horsepower motors of the LOFLO PS. The common electrical room would be air-conditioned with a redundant air-handling system installed over the room.

The joint LOFLO PS/PWPS facility would share plant water, reclaimed water, high-pressure air, and provisions for discharging the drainage to the plant-wide drain system. All of these systems are available either within the vicinity of the proposed facility or at OOBS. The facility would be provided with mechanical ventilation consisting of a ducted air supply system and wall-mounted exhaust fans.

### **2.2.2 Rehabilitation of Existing Ocean Outfall Booster Station and Central Generation Building**

The proposed project includes rehabilitation of both the existing OOBS and Cen Gen. Rehabilitation of the existing OOBS would consist of: mechanical rehabilitation work, including the rehabilitation of Pumps 1 through 4, and demolition of Pump 5; OOBS pumps ancillary system upgrades to the backup cooling water pumps, pump discharge isolation valves, check valve, drain valve, and some piping; replacement of sump pumps; miscellaneous improvements such as the installation of machine guards at the pump mechanical seal access openings; architectural and structural improvements to the OOBS building; and improvements to HVAC and plumbing.

Rehabilitation would also include electrical upgrades of the existing 12 kilovolt systems at the OOBS and Cen Gen. These updates would increase safety, upgrade to current standards, and provide better operational flexibility. The new electrical lineup would have two immediate bus ties and three sources of power feeding it: (1) one from Electrical Service Center; (2) one from Cen Gen; and (3) one from the SPF. The new switchgear lineup would provide power to most of the facilities in Plant 2 that currently receive power from Cen Gen, including:

- Distribution Center A which feeds the primary treatment processes
- Distribution Center B which feeds the aeration processes
- The reconfigured OOBS pumps and LOFLO PS
- Distribution Center D which feeds the Operations Center, City Water Pump Station, Maintenance and Warehouse areas
- Distribution Center E, the EPSA
- Distribution Center H, which are the Headworks processes

### **2.2.3 Rehabilitation at Effluent Pump Station Annex**

Rehabilitation at EPSA and SPF would include the following:

- Provide emergency egress lighting and exit signage throughout the generator, electrical, and pump buildings.
- Provide a security camera system on the exterior east side of EPSA to monitor the plant east exterior fence line.

## 2.3 Project Construction

The proposed project would be constructed using a traditional bottom-up approach utilizing traditional construction methods and equipment. Construction would require extensive dewatering because of the high groundwater table at the site and temporary shoring systems due to the close proximity of existing facilities. The general sequence would include the following steps:

1. Existing utility locating and site demolition
2. Establishing required dewatering setup
3. Soil Stabilization Mixing in-situ for seismic forces and liquefaction mitigation
4. Excavation coordinated with shoring systems installation
5. Wet well construction
6. Influent pipeline installation
7. Pump station floor slab and foundations construction
8. Installation of the Junction Structure and connection to the 120-inch-diameter SE pipeline
9. Superstructure construction
10. Mechanical, electrical, and instrumentation installation and piping tie-ins
11. Retirement of the existing PWPS and Cen Gen cooling pump stations
12. Site restoration and improvements
13. Startup and commissioning

The construction period for the proposed project is approximately 4 years. Construction of the proposed project is expected to begin in October 2018. The construction schedule was developed based on the following assumptions:

- Construction of the LOFLO PS/PWPS joint facility and OOBS rehabilitation would be concurrent.
- Construction activities would proceed continuously through completion without unanticipated shutdowns or delays required for completion of other on-site projects.
- Connections to the 120-inch-diameter TF/SC pipeline and 84-inch-diameter OOBS pump discharge header would occur during appropriate weather seasons and conditions without delay to completion of the project.

- Only one of the OOBs pumps would be taken out of service during anticipated wet weather conditions.
- Major works requiring more than one pump out of service would be planned well ahead and contingency measures implemented.
- The Cen Gen electrical modifications would be performed in parallel to OOBs rehabilitation work.

### **2.3.1 Construction Equipment and Workforce**

The total construction crew for the proposed project is expected to range from 10 to 30 workers, but would vary depending on activity. Construction of the proposed project would include operation of heavy equipment, including bore/drill rigs, excavators, cranes, forklifts, graders, and various types of trucks. Excavation of the proposed project would generate approximately 7,500 cubic yards of soil, which would be exported off site. Approximately 30 daily truck trips are anticipated to haul the exported soil off-site.

### **2.3.2 Construction Staging Area and Site Access**

During construction of the proposed project, staging of equipment and materials would occur within a 110,489 square-foot area located north of the OOBs and Cen Gen. Access to the project area would be provided via the Banning Gate entrance located off Brookhurst Street on the west side of Plant 2.

## **2.4 Project Operation and Maintenance**

Operation of the proposed project is estimated to commence in January 2023, and operate as needed 24 hours per day, 7 days a week. Operation and maintenance of the joint LOFLO PS/PWPS facility is anticipated to require less than one full-time employee for general ongoing equipment maintenance.

## **2.5 Project Approvals**

- Santa Ana Regional Water Quality Control Board – Region 8
  - NPDES Permit (for dewatering)
- City of Huntington Beach
  - Coastal Development Permit
- South Coast Air Quality Management District
  - Permit to Construct



## Section 3: Initial Study Checklist

### 3.1 Background

<b>1. Project Title:</b>	Ocean Outfall System Rehabilitation/Outfall Low Flow Pump Station (Project No. J-117B)
<b>2. Lead Agency Name and Address:</b>	Orange County Sanitation District 10844 Ellis Avenue Fountain Valley, CA 92708
<b>3. Contact Person and Phone Number:</b>	Mr. Kevin Hadden (714) 593-7462
<b>4. Project Location:</b>	Orange County Sanitation District Treatment Plant No. 2 22212 Brookhurst Street Huntington Beach, CA 92646
<b>5. Project Sponsor's Name and Address:</b>	Orange County Sanitation District
<b>6. General Plan Designation(s):</b>	Public (P)
<b>7. Zoning:</b>	Industrial Limited (IL) Residential Agriculture with an Oil Overlay (RA-O)
<b>8. Description of the Project:</b>	The proposed project includes construction of a new pump station facility consisting of an LOFLO PS and a PWPS, rehabilitation of the existing OOBS and Cen Gen, and miscellaneous minor works at the EPSA and SPF.
<b>9. Surrounding Land Uses and Setting:</b>	The proposed project would occur entirely within the existing OCSD Plant 2 wastewater treatment facility. The Santa Ana River and Santa Ana River Trail are located immediately east of the facility. Huntington Beach Wetlands, Pacific Coast Highway, and the Pacific Ocean area located south of Plant 2. Residential neighborhoods are located to the north and west, and south of the Talbert Regional Park and open space on the east side of the Santa Ana River.
<b>10. Other public agencies whose approval is required (e.g., permits):</b>	Santa Ana Regional Water Quality Control Board – Region 8, City of Huntington Beach, South Coast Air Quality Management District

### 3.2 Environmental Factors Potentially Affected

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

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Aesthetics                      | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality                                   |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources      | <input checked="" type="checkbox"/> Geology/Soils/Seismicity           |
| <input type="checkbox"/> Greenhouse Gas Emissions        | <input type="checkbox"/> Hazards & Hazardous Materials      | <input type="checkbox"/> Hydrology/Water Quality                       |
| <input type="checkbox"/> Land Use/Planning               | <input type="checkbox"/> Mineral Resources                  | <input checked="" type="checkbox"/> Noise                              |
| <input type="checkbox"/> Population/Housing              | <input type="checkbox"/> Public Services                    | <input type="checkbox"/> Recreation                                    |
| <input type="checkbox"/> Transportation/Traffic          | <input type="checkbox"/> Tribal Cultural Resources          | <input type="checkbox"/> Utilities/Service Systems                     |
|  |   | <input checked="" type="checkbox"/> 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.

Carla Dillon  
Signature

7-6-2017  
Date

Carla Dillon  
Printed Name

Orange County Sanitation District  
For

## Section 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 OCSD 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

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

### Environmental Evaluation

Would the project:

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

**Less than Significant Impact.** The project area is not officially designated as a scenic vista. However, Plant 2 is located within the City of Huntington Beach’s Coastal Zone and is adjacent to visual resources, facilities, and assets that contribute to the aesthetic characterization of the Coastal Zone (City of Huntington Beach, 2011). Adjacent visual resources that contribute to the coastal scenic vista in the project vicinity include Huntington State Beach, the Pacific Ocean, Talbert Marsh, and the Santa Ana River. The Santa Ana River Trail extends along the eastern boundary of Plant 2, adjacent to the project area. Along the Santa Ana River Trail, there are intermittent views of Plant 2 structures. The views are partially obstructed by existing landscaping and topography.

Short-term construction impacts would consist of excavation activities and facility construction. The construction equipment may be visible from public views from the Santa Ana River Trail or Talbert Marsh Trail. However, construction would be limited to approximately 2 acres within the active treatment plant. 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.

The highest point of the proposed joint LOFLO PS/PWPS facility would be approximately 50 feet above grade. The Santa Ana River levee is approximately 10 feet above the Plant 2 elevation. Therefore, the new facility will be visible from the bike path along the Santa Ana River and from longer views from the PCH bridge and from residences on the bluffs across the San Joaquin Marsh. The tallest structures on Plant 2 are the two 86-foot-tall surge towers located approximately 1,000 feet south of the proposed LOFLO PS/PWPS facility. Other structures on the Plant 2 property nearby include the approximate 50-foot-tall solids loading facility and 40-foot-tall digesters.

Although the facility would be visible from recreational users of the Santa Ana River Trail, Talbert Marsh Trail, and Talbert Regional Park, it would blend in with the other facilities and would not obscure views or change the visual character of the treatment plant site. The proposed facilities would serve the existing treatment plant functions and would be designed to be architecturally consistent with existing buildings at Plant 2. Therefore, the proposed facilities would not contrast with existing facilities at Plant 2, and the new pump station facility and ancillary facilities would not obstruct public views of the neighboring Santa Ana River or marshlands. 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?**

**Less than Significant Impact.** Based on a review of the California Department of Transportation (Caltrans) List of Scenic Highways, the project area is not located along a State Scenic Highway (Caltrans, 2017). A segment of State Route 1, Pacific Coast Highway (PCH) is approximately 0.50 mile south of the project area along the Pacific Ocean coastline. PCH is an Eligible Scenic Highway but is not officially designated. Further, the proposed facilities would not be visible from motorists traveling along this route. Therefore, the proposed project would not impact scenic resources, which include rock outcroppings, trees, or historic buildings within a designated State Scenic Highway corridor. No impacts would occur.

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

**Less than Significant Impact.** The proposed joint LOFLO PS/PWPS facility would be constructed within the existing Plant 2 property. Plant 2 is located within the City of Huntington Beach's Coastal Zone and is adjacent to visual resources and assets that contribute to the visual characterization of the Coastal Zone. However, the proposed facilities would have an appearance similar to existing Plant 2 facilities. All pipelines would be constructed underground and would not be visible aboveground, resulting in no visual impacts. Although implementation of the proposed project would construct a new structure on the currently undeveloped portion of Plant 2, the design and architectural elements of the joint LOFLO PS/PWPS facility would be compatible with the visual character of Plant 2. Because the proposed facilities are within the Plant 2 boundary and are consistent with the existing Plant 2 uses and design, the proposed project would not alter or degrade the visual character of the area. Construction impacts would be less than significant.

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

**Less than Significant 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 on-site uses associated with Plant 2 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.

The new joint LOFLO PS/PWPS facility constructed within Plant 2 would include enhanced natural lighting using transoms and skylights, emergency egress lighting for the building, and non-intrusive wallpack lighting for the building exterior and roof, in addition to standard security lighting. Similar to the existing buildings within Plant 2, the 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. On-site security lighting would be directed away from the adjacent Santa Ana River right-of-way. 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 joint LOFLO PS/PWPS facility would not have large reflective surfaces. The proposed structure would have a concrete finish; therefore, no glare impacts would occur.

## References

- California Department of Transportation (Caltrans), 2017. Officially Designated Scenic Highway, Orange County. Available at: [http://www.dot.ca.gov/hq/LandArch/16\\_livability/scenic\\_highways/](http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/), accessed March 13, 2017.
- City of Huntington Beach, 2011. City of Huntington Beach General Plan, Coastal Element. October 2011.
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## 4.2 Agricultural and Forest Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>2. AGRICULTURAL AND FOREST RESOURCES —</b>				
<p>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.</p> <p><b>Would the project:</b></p>				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 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, 2017). 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 Industrial Limited (IL). 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 concrete. No other changes to the existing environment would occur from implementation of the proposed project that could result in conversion of farmland to nonagricultural use or forest land to non-forest use. Thus, no impact would occur.

## References

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

CDC, 2017. California Important Farmland Finder. Available at: <http://maps.conservation.ca.gov/ciff/ciff.html>, accessed Mach 13, 2017.



## 4.3 Air Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>3. AIR QUALITY —</b>				
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.				
<b>Would the project:</b>				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion

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

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

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

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

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

## **Federal and State Ambient Air Quality Standards**

### ***Ambient Air Quality Standards***

Regulation of air pollution is achieved through both federal and state ambient air quality standards and emission limits for individual sources of air pollutants. As required by the federal Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has identified criteria pollutants and has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), and lead (Pb). These pollutants are called “criteria” air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

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

### ***Regional and Local***

The NAAQS establish the level for an air pollutant above which detrimental effects to public health or welfare may result. The NAAQS are defined as the maximum acceptable concentrations that, depending on the pollutant, may not be equaled or exceeded more than once per year or in some cases as a percentile of observations. California has generally adopted more stringent ambient air quality standards for the criteria air pollutants (i.e., California Ambient Air Quality Standards [CAAQS]) and has adopted air quality standards for some pollutants for which there is no corresponding national standard, such as sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Both the national and State ambient air quality standards for pollutants along with their associated health effects and sources are presented in **Table 1**.

**TABLE 1  
AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS**

<b>Pollutant</b>	<b>Averaging Time</b>	<b>State Standard</b>	<b>National Standard</b>	<b>Pollutant Health and Atmospheric Effects</b>	<b>Major Pollutant Sources</b>
Ozone	1 hour	0.09 ppm	---	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when ROG and NO <sub>x</sub> react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
	8 hours	0.07 ppm	0.075 ppm		
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm		
Nitrogen Dioxide (NO <sub>2</sub> )	1 hour	0.18 ppm	0.100 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	Annual Arithmetic Mean	0.030 ppm	0.053 ppm		
Sulfur Dioxide (SO <sub>2</sub> )	1 hour	0.25 ppm	75 ppb	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	3 hours	---	0.50 ppm		
	24 hours	0.04 ppm	0.14 ppm		
	Annual Arithmetic Mean	---	0.03 ppm		
Respirable Particulate Matter (PM10)	24 hours	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>	---		
Fine Particulate Matter (PM2.5)	24 hours	---	35 µg/m <sup>3</sup>	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NO <sub>x</sub> , sulfur oxides, and organics.
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>		
Lead (Pb)	30 Day Average	1.5 µg/m <sup>3</sup>	---	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction (in severe cases).	<i>Present source:</i> lead smelters, battery manufacturing and recycling facilities. <i>Past source:</i> combustion of leaded gasoline.
	Calendar Quarter	---	1.5 µg/m <sup>3</sup>		
	Rolling 3-Month Average	---	0.15 µg/m <sup>3</sup>		
Hydrogen Sulfide	1 hour	0.03 ppm	No National Standard	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)	Geothermal power plants, petroleum production and refining
Sulfates (SO <sub>4</sub> )	24 hour	25 µg/m <sup>3</sup>	No National Standard	Decrease in ventilatory functions; aggravation of asthmatic symptoms; aggravation of cardiopulmonary disease; vegetation damage; degradation of visibility; property damage.	Industrial processes.
Visibility Reducing Particles	8 hour	Extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, and discourages tourism.	See PM <sub>2.5</sub> .

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

SOURCE: CARB, 2009, CARB, 2016.

## Existing Air Quality

SCAQMD maintains monitoring stations within district boundaries that monitor air quality and compliance with associated ambient standards. The project area is located in the North Orange County Coastal Air Monitoring Subregion. Currently, the nearest monitoring station to the project area is the Costa Mesa – Mesa Verde Drive Station (2850 Mesa Verde Dr. East, Costa Mesa, CA). This station monitors ambient concentrations of ozone, NO<sub>2</sub>, CO, and SO<sub>2</sub>, but does not monitor PM<sub>2.5</sub> or PM<sub>10</sub>. The nearest monitoring station that monitors ambient concentrations of PM<sub>2.5</sub> and PM<sub>10</sub> is the Anaheim station located at 1630 W. Pampas Lane. Historical data of ambient ozone, NO<sub>2</sub>, CO, SO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations from these monitoring stations for the most recent 3 years (2012–2014) are shown in **Table 2**.

Both CARB and USEPA use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. Unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment. The current attainment status for the SCAB is provided in **Table 3**.

## Sensitive Receptors

Sensitive receptors are individuals who are considered more sensitive to air pollutants than others. The reasons for greater than average sensitivity may include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system. The closest sensitive receptors to the project area are single family residential land uses located approximately 1,300 feet to the west and a recreational bike trail approximately 50 feet to the east.

**TABLE 2  
AIR QUALITY DATA SUMMARY (2012 – 2014) FOR PROJECT AREA**

Pollutant	Monitoring Data by Year			
	Standard <sup>a</sup>	2012	2013	2014
<b>Ozone – Costa Mesa</b>				
Highest 1 Hour Average (ppm)		0.090	0.095	0.096
Days over State Standard	0.09 ppm	2	1	1
Highest 8 Hour Average (ppm)		0.076	0.083	0.079
Days over National Standard	0.075 ppm	1	0	4
Days over State Standard	0.070 ppm	1	2	6
<b>Carbon Monoxide – Costa Mesa</b>				
Highest 8 Hour Average (ppm)		1.7	2	1.9
Days over National Standard	9.0 ppm	0	0	0
Days over State Standard	9.0 ppm	0	0	0
<b>Nitrogen Dioxide – Costa Mesa</b>				
Highest 1 Hour Average (ppm)		0.0744	0.0757	0.061
Days over National Standard	0.100 ppm	0	0	0
Days over State Standard	0.18 ppm	0	0	0
Annual Average (ppm)		0.0104	0.0116	0.011
Days over National Standard	0.053 ppm	0	0	0
Days over State Standard	0.030 ppm	0	0	0
<b>Sulfur Dioxide – Costa Mesa</b>				
Highest 24 Hour Average (ppm)		0.0062	0.0042	0.009
Days over State Standard	0.04 ppm	0	0	0
<b>Particulate Matter (PM<sub>10</sub>) – Anaheim</b>				
Highest 24 Hour Average (µg/m <sup>3</sup> ) <sup>b</sup>		48	77	85
Days over National Standard (measured) <sup>c</sup>	150 µg/m <sup>3</sup>	0	0	0
Days over State Standard (measured) <sup>c</sup>	50 µg/m <sup>3</sup>	0	1	2
Annual Average (µg/m <sup>3</sup> ) <sup>b</sup>	20 µg/m <sup>3</sup>	22.4	25.4	26.8
<b>Particulate Matter (PM<sub>2.5</sub>) – Anaheim</b>				
Highest 24 Hour Average (µg/m <sup>3</sup> ) <sup>b</sup>		50.1	37.8	56.2
Days over National Standard (measured) <sup>c</sup>	35 µg/m <sup>3</sup>	4	1	6
Annual Average (µg/m <sup>3</sup> ) <sup>b</sup>	12 µg/m <sup>3</sup>	10.81	10.1	10.3

NOTES:

ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter.

\* = Insufficient data available to determine the value.

<sup>a</sup> Generally, state standards and national standards are not to be exceeded more than once per year.

<sup>b</sup> Concentrations and averages represent federal statistics. State and federal statistics may differ because of different sampling methods.

<sup>c</sup> Measurements are usually collected every 6 days. Days over the standard represent the measured number of days that the standard has been exceeded.

SOURCE: SCAQMD 2014, 2013a, 2012.

**TABLE 3  
SOUTH COAST AIR BASIN ATTAINMENT STATUS**

Pollutant	Attainment Status	
	California Standards	Federal Standards
Ozone	Extreme Nonattainment	Severe Nonattainment
CO	Attainment	Unclassified/ Attainment
NO <sub>2</sub>	Attainment	Unclassified/ Attainment
SO <sub>2</sub>	Attainment	Attainment
PM <sub>10</sub>	Nonattainment	Attainment
PM <sub>2.5</sub>	Nonattainment	Nonattainment
Lead	Attainment	Nonattainment

SOURCE: CARB, 2013; USEPA, 2017.

## Regulatory Setting

### *Federal*

The principal air quality regulatory mechanism at the federal level is the CAA and in particular, the 1990 amendments to the CAA and the NAAQS that it establishes. These standards identify the maximum ambient (background) concentration levels of criteria pollutants that are considered to be safe, with an adequate margin of safety, to protect public health and welfare. As discussed previously, the criteria pollutants include ozone, CO, NO<sub>2</sub> (which is a form of NO<sub>x</sub>), SO<sub>2</sub> (which is a form of SO<sub>x</sub>), PM<sub>10</sub>, PM<sub>2.5</sub>, and lead.

The CAA also requires each state to prepare an air quality control plan, referred to as a state implementation plan (SIP). The CAA Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. USEPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and to determine whether implementing the SIPs will achieve air quality goals.

USEPA also has regulatory and enforcement jurisdiction over emission sources beyond state waters (outer continental shelf), and those that are under the exclusive authority of the Federal government, such as aircraft, locomotives, and interstate trucking. USEPA's primary role at the state level is to oversee the state air quality programs. USEPA sets federal vehicle and stationary source emissions standards and provides research and guidance in air pollution programs.

## **General Conformity Rule**

The General Conformity Rule (40 CFR Part 93) requires that federal agencies demonstrate that federal actions conform with the applicable State Implementation Plan (SIP) in order to ensure that federal activities do not hamper local efforts to control air pollution. The EPA general conformity rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The *de minimis* emission thresholds are based on the attainment status of each air basin. Since the proposed project is located in an air basin that is designated attainment for all federal criteria pollutants, it is not subject to the General Conformity emissions thresholds.

## **State**

### **California Air Resources Board**

The California Air Resources Board (CARB), a department of the California Environmental Protection Agency (Cal/EPA), oversees air quality planning and control throughout California by administering the SIP. Its primary responsibility lies in ensuring implementation of the 1989 amendments to the CCAA, responding to the federal CAA requirements, and regulating emissions from motor vehicles sold in California. It also sets fuel specifications to further reduce vehicular emissions.

The amendments to the CCAA establish CAAQS, and a legal mandate to achieve these standards by the earliest practical date. These standards apply to the same criteria pollutants as the federal CAA, and also include sulfates, visibility reducing particulates, hydrogen sulfide and vinyl chloride. They are also generally more stringent than the federal standards.

CARB is also responsible for regulations pertaining to TACs. The Air Toxics “Hot Spots” Information and Assessment Act was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. Assembly Bill (AB) 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release.

### **California Green Building Standard Code**

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

## **Local**

### **South Coast Air Quality Management District**

#### Criteria Air Pollutants

The South Coast Air Quality Management District (SCAQMD) attains and maintains air quality conditions in the SCAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of SCAQMD includes preparation of plans for attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. SCAQMD also inspects stationary sources of air pollution and responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements programs and regulations required by the CAA, CAAA, and CCAA.

#### Air Quality Management Plan

SCAQMD and the Southern California Association of Governments (SCAG) are responsible for preparing the air quality management plan (AQMP), which addresses federal and state CAA requirements. The AQMP details goals, policies, and programs for improving air quality in the SCAB.

The 2012 AQMP was adopted by the SCAQMD Governing Board on December 12, 2012. The purpose of the 2012 AQMP for the SCAB is to set forth a comprehensive and integrated program that will lead the region into compliance with the federal 24-hour PM<sub>2.5</sub> air quality standard, and to provide an update to the SCAB's commitment towards meeting the federal 8-hour ozone standards (SCAQMD, 2013b). The AQMP would also serve to satisfy recent USEPA requirements for a new attainment demonstration of the revoked 1-hour ozone standard, as well as a vehicle miles traveled (VMT) emissions offset demonstration.<sup>1</sup> Specifically, the AQMP would serve as the official SIP submittal for the federal 2006 24-hour PM<sub>2.5</sub> standard, for which USEPA has established a due date of December 14, 2012.<sup>2</sup> In addition, the AQMP updates specific new control measures and commitments for emissions reductions to implement the attainment strategy for the 8-hour ozone SIP. The 2012 AQMP sets forth programs which require integrated planning efforts and the cooperation of all levels of government: local, regional, state, and federal. Currently, SCAQMD staff has already begun initiating an early development process for the next AQMP.

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<sup>1</sup> Although the federal 1-hour ozone standard was revoked in 2005, USEPA has proposed to require a new 1-hour ozone attainment demonstration in the South Coast extreme ozone nonattainment area as a result of a recent court decision. Although USEPA has replaced the 1-hour ozone standard with a more health protective 8-hour standard, the CAA anti-backsliding provisions require that California have approved plans for attaining the 1-hour standard.

<sup>2</sup> Although the 2012 AQMP was approved by the SCAQMD Board on December 7, 2012, the plan did not get submitted to USEPA by December 14, 2012 as it first required approval from CARB. The 2012 AQMP was subsequently approved by CARB on January 25, 2013, and as of February 13, 2013, the plan has been submitted by CARB to USEPA.



## SCAQMD Rules and Regulations

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

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

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

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

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

## Toxic Air Contaminants

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

The Air Toxics Control Plan (March 2000, revised March 26, 2004) is a planning document designed to examine the overall direction of SCAQMD's air toxics control program. It includes development and implementation of strategic initiatives to monitor and control air toxics emissions. Control strategies that are deemed viable and are within SCAQMD's jurisdiction will each be brought to the SCAQMD Board for further consideration through the normal public review process. Strategies that are to be implemented by other agencies will be developed in a cooperative effort, and the progress will be reported back to the Board periodically.

In May 2015 the SCAQMD completed the Multiple Air Toxics Exposure Study IV (MATES IV) (SCAQMD, 2015a). MATES IV is a monitoring and evaluation study conducted in the SCAB and is a follow up to previous air toxics studies. The study is a follow up to the 2008 MATES III study and consists of several elements including a monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize risk across the SCAB (SCAQMD, 2008a). The study focuses on the carcinogenic risk from exposure to air toxics (SCAQMD, 2008b). However, it does not estimate mortality or other health effects from particulate exposures. MATES IV shows that the region around the project area has an estimated carcinogenic risk from between 560 per million near the coast to the south and 801 in a million near Ellis Avenue at the north (SCAQMD, 2015a). These model estimates were based on monitoring data collected at 10 fixed sites within the SCAB.

### Significance Thresholds

Neither OCSD nor the City of Huntington Beach has developed specific air quality thresholds for air quality impacts. However, as stated in Appendix G of the *CEQA Guidelines*, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. As such, the significance thresholds and analysis methodologies in SCAQMD's *CEQA Air Quality Handbook* are used in evaluating project impacts. The SCAQMD has established daily mass thresholds for regional emissions, which are shown in **Table 4**.

**TABLE 4  
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS**

Pollutant	Mass Daily Thresholds (lbs/day)	
	Construction	Operations
Oxides of Nitrogen (NO <sub>x</sub> )	100	55
Reactive Organic Gases (ROG)	75	55
Respirable Particulate Matter (PM <sub>10</sub> )	150	150
Fine Particulate Matter (PM <sub>2.5</sub> )	55	55
Oxides of Sulfur (SO <sub>x</sub> )	150	150
Carbon Monoxide (CO)	550	550
Lead <sup>a</sup>	3	3
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million  Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million)  Chronic & Acute Hazard Index ≥ 1.0 (project increment)	

<sup>a</sup> As the proposed project would not have any major lead emissions sources, emissions of lead would not be analyzed further in the EIR.

SOURCE: SCAQMD, 2015b.

## Environmental Evaluation

Would the project:

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

**Less than Significant Impact.** The proposed project is located within the SCAB, which is under the jurisdiction of the SCAQMD. As such, SCAQMD's 2012 AQMP is the applicable air quality plan for the proposed project. Projects that are consistent with the regional population, housing, and employment forecasts identified by SCAG are considered to be consistent with the AQMP growth projections, since the forecast assumptions by SCAG forms the basis of the land use and transportation control portions of the AQMP. Additionally, because SCAG's regional growth forecasts are based upon, among other things, land uses designated in general plans, a project that is consistent with the land use designated in a general plan would also be consistent with the SCAG's regional forecast projections, and thus also with the AQMP growth projections.

The proposed project rehabilitates the existing OOBS but does not increase the number of jobs, nor does it result in the creation of new housing or potential residential growth. Because the land use will not change, and has been in operation since before the creation of the 2012 AQMP, the proposed project would not change the regional growth forecasts as identified in the local General Plan or those of the 2012 AQMP. Therefore, the proposed project would not conflict with, or obstruct, implementation of the AQMP and this impact would be less than significant.

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

**Less than Significant Impact.** The proposed project would not violate any air quality standard or contribute substantially to an existing air quality violation for both construction and operational emissions.

### **Construction**

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

Emissions of ozone precursors ROG and NO<sub>x</sub> are primarily generated from mobile sources and vary as a function of vehicle trips per day associated with delivery of construction materials, the importing and exporting of soil, vendor trips, and worker commute trips, and the types and number of heavy-duty, off-road equipment used and the intensity and frequency of their

operation. A large portion of construction-related ROG emissions also result from the application of asphalt and architectural coatings and vary depending on the amount of coatings and paving applied each day.

The maximum daily construction emissions for the proposed project during each year of construction were estimated using CalEEMod, which is designed to model construction emissions for land use development projects based on building size, land use and type, and disturbed acreage, and allows for the input of project-specific information. Proposed project-generated emissions of criteria air pollutants (e.g., PM<sub>10</sub>) and precursors (i.e., ROG and NO<sub>x</sub>) were modeled based on general information provided in the proposed project description and by OCS&D, and default SCAQMD-recommended settings and parameters attributable to the proposed land use types and site location.

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

**Table 5** summarizes the modeled worst-case daily emissions of criteria air pollutants and ozone precursors associated with the proposed project's construction activities (refer to **Appendix A** for a detailed summary of the CalEEMod modeling assumptions, inputs, and outputs). As shown in Table 5, none of the maximum daily level of construction-generated emissions of criteria pollutants would exceed their respective SCAQMD's daily significance thresholds over the entire construction period. Thus, air quality impacts during construction of the proposed project would be less than significant.

**TABLE 5  
PROPOSED PROJECT: REGIONAL CONSTRUCTION EMISSIONS**

Construction Activity	Estimated Maximum Daily Emissions (lbs/day)					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Demolition/Site Preparation	4	35	22	0.1	1.8	1.5
Demolition/Grading/Drainage, Utilities, and Sub-grade	7	74	49	0.1	4.1	3.0
Demolition/Drainage, Utilities, and Sub-grade/Building Construction	6	59	49	0.1	3.3	2.9
Demolition/Drainage, Utilities, and Sub-grade/Building Construction/Architectural Coating	9	59	50	0.1	3.4	2.9
Demolition/Paving	4	38	31	0.1	2.2	1.8
<b>Maximum Regional Daily Emissions</b>	<b>9</b>	<b>74</b>	<b>50</b>	<b>0.1</b>	<b>4.1</b>	<b>3.0</b>
<i>Regional Significance Threshold</i>	<i>75</i>	<i>100</i>	<i>550</i>	<i>150</i>	<i>150</i>	<i>55</i>
<b>Significant Impact?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

*NOTE:* Mechanical/Electrical Equipment and Systems is assumed to share equipment with other phases; emissions would be accounted for within the above listed phases.  
Source: Refer to Appendix A

## Operations

Implementation of the proposed project would result in long-term regional emissions of criteria air pollutants and ozone precursors associated with area sources, such as natural gas consumption, landscaping, applications of architectural coatings, and consumer products, in addition to operational mobile emissions. Since the new pump system may operate alongside the older system for an undetermined amount of time, the annual operational criteria pollutant emissions associated with the existing uses at the Plant 2 site are not subtracted from the proposed project's operational emissions calculations. The proposed project's operational emissions fall well below the thresholds for the associated criteria pollutants so operating the new system and older one in tandem will not cause a significant increase in operational emissions. Furthermore, the new LOFLO PS/PWPS system is expected to be more efficient than the system it is replacing and will effectively lower the plant's operational emissions once the older system is phased out completely. Regional operational emissions were modeled using CalEEMod Version 2016.3.1 and are summarized in **Table 6**.

**TABLE 6  
PROPOSED REGIONAL OPERATIONAL EMISSIONS**

Operational Activities	Estimated Maximum Daily Emissions (lbs/day)					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Area (Consumer Products, Landscaping)	<1	<1	<1	<1	<0.1	<0.1
Energy (Natural Gas)	<1	<1	<1	<1	<0.1	<0.1
Motor Vehicles	<1	<1	1	<1	0.2	<0.1
<b>Total Project On-Site and Off-Site Emissions</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>1</b>	<b>&lt;1</b>	<b>&lt;0.1</b>	<b>&lt;0.1</b>
<b>Maximum Net Regional (On-Site and Off-Site) Emissions</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>1</b>	<b>&lt;1</b>	<b>0.2</b>	<b>&lt;0.1</b>
<b>SCAQMD Numeric Indicators</b>	<b>55</b>	<b>55</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significant Impact?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: Refer Appendix A

As shown in Table 6, the proposed project would result in long-term regional emissions of criteria air pollutants and ozone precursors that are below SCAQMD’s applicable thresholds. The proposed project’s operational emissions would not result in or substantially contribute to Regional emission concentrations that exceed the NAAQS and CAAQS. Therefore, operational emissions would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and impacts would be less than significant.

**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.** A cumulative impact arises when two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant impacts, meaning that the proposed project’s incremental effects must be viewed in connection with the effects of past, current, and probable future projects.

The project area is located within the SCAB, which is considered the cumulative study area for air quality. Because the SCAB is currently classified as a state nonattainment area for ozone, PM<sub>10</sub>, and PM<sub>2.5</sub>, cumulative development consisting of the proposed project along with other past, present, and reasonably foreseeable future projects in the SCAB as a whole could violate an air quality standard or contribute to an existing or projected air quality violation. However, based on SCAQMD’s cumulative air quality impact methodology, SCAQMD recommends that if an individual project results in air emissions of criteria pollutants (ROG, CO, NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>) that exceed the SCAQMD’s recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the proposed project region is in non-attainment under an applicable federal or state

ambient air quality standard. As shown in Table 5, the project's construction emissions would not exceed the SCAQMD's daily threshold for any criteria pollutants and would not contribute to a considerable net increase in area emissions.

In addition, the operational emissions associated with the proposed project would not exceed the SCAQMD's thresholds of significance for any of the long-term operational criteria pollutants (see Table 6). Furthermore, the proposed project would also be consistent with SCAQMD's AQMP. Thus, operation of the proposed project would not conflict with SCAQMD's air quality planning efforts for nonattainment pollutants and would not lead to a cumulatively considerable net increase in nonattainment pollutants during operational activities.

Overall, the net increase of proposed project's construction emissions would not exceed the SCAQMD's daily thresholds for any criteria pollutants, and therefore, would not contribute considerably to cumulative emissions. Operational emissions associated with project operations would be less than the SCAQMD's daily thresholds for the criteria pollutants, and thus the project's contribution to long-term cumulative air quality impacts would be less than cumulatively considerable. Therefore, the project would result in a less than significant cumulative impact during operational activities.

**d) Expose sensitive receptors to substantial pollutant concentrations?**

**Less than Significant Impact.** Sensitive receptors at nearby residences or on the recreational bike path will not be exposed to a significant level of pollutant concentrations.

***CO Hotspots***

CO hotspots are primarily a concern during the operational period of a project where the project increases local daily traffic by hundreds of thousands of trips for the foreseeable future. The proposed project will not operate near a major roadway and is contained within the larger OCSO Plant 2 facility. Operational trips will be limited to maintenance and will not generate much traffic or associated emissions. Therefore, the project would not result in the formation of a CO hotspot and impacts would be less than significant.

***Construction LST***

The daily on-site construction emissions generated by the proposed project were evaluated against SCAQMD's localized significance thresholds (LSTs) for a 2-acre site to determine whether the emissions would cause or contribute to adverse localized air quality impacts. The nearest sensitive receptors to the project area are the single family residential buildings located approximately 1,300 feet to the west and a recreational bike trail approximately 50 feet to the east. Additionally, the project area is approximately 2-acre self-contained within the active treatment plant. Therefore, the analysis compares the on-site construction emissions to the look-up table thresholds for a 2-acre site at 25 meters within sensitive receptor area (SRA) 18 for North Coastal Orange County. There is additional designated open space and undeveloped land east of the project area that is not considered a sensitive receptor.

As shown in **Table 7**, the daily unmitigated emissions generated on-site by the proposed project's worst-case construction scenario would not exceed the applicable SCAQMD LSTs during construction. Therefore, localized air quality emissions associated with the project would have a less than significant impact.

**TABLE 7  
PROPOSED PROJECT UNMITIGATED LOCALIZED DAILY CONSTRUCTION EMISSIONS**

Construction Phase	Estimated Maximum Daily On-Site Emissions (lbs/day)			
	NO <sub>x</sub>	CO	PM10 <sup>a</sup>	PM2.5 <sup>a</sup>
Demolition/Site Preparation	35	21	1.5	1.4
Demolition/Grading/Drainage, Utilities, and Sub-grade	63	45	2.8	2.6
Demolition/Drainage, Utilities, and Sub-grade/Building Construction	58	48	2.8	2.7
Demolition/Drainage, Utilities, and Sub-grade/Building Construction/Architectural Coating	58	48	2.8	2.7
Demolition/Paving	37	30	1.8	1.7
<b>Maximum Localized Emissions</b>	<b>63</b>	<b>48</b>	<b>2.8</b>	<b>2.7</b>
<b>SCAQMD Threshold</b>	<b>131</b>	<b>962</b>	<b>7.0</b>	<b>5.0</b>
<b>Significant Impact?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: Refer to Appendix A  
NOTE: Mechanical/Electrical Equipment and Systems is assumed to share equipment with other phases; emissions would be accounted for within the above listed phases.  
<sup>a</sup> Emissions account for implementation of dust control measures as required by SCAQMD Rule 403—Fugitive Dust.  
<sup>b</sup> LSTs for a 2-acre site in SRA 18 at a receptor distance of 25 meters.  
<sup>c</sup> According to SCAQMD's LST methodology, LSTs are only applicable to the on-site construction emissions that are generated by a project and do not apply to emissions generated off-site such as mobile emissions on roadways from worker, vendor, and haul truck trips.

### **Operational LST**

During project operations, the daily amount of localized pollutant emissions generated on-site by the proposed project would not be substantial. As stated above, the new LOFLO PS/PWPS may operate simultaneously with the older system while the old facility is intermittently decommissioned. This temporary overlap would not result in any significant increase in emissions. This is corroborated by the fact that the project's localized operational emissions are all less than 1 pound per day for all criteria pollutants. The proposed project on-site operational emissions are shown in **Table 8**. Operational emissions were modeled using CalEEMod Version 2016.3.1, and the on-site emissions were used to compare SCAQMD LST thresholds. Assumptions and modeling output are included in Appendix A. As shown, the proposed project's total operational-related emissions generated on-site would not exceed SCAQMD's applicable operational LSTs. Thus, localized air quality impacts during operations would be less than significant.



**TABLE 8  
PROPOSED PROJECT UNMITIGATED LOCALIZED DAILY OPERATIONAL EMISSIONS**

Operational Activities	Estimated Maximum Daily On-Site Emissions (lbs/day)			
	NO <sub>x</sub>	CO	PM10 <sup>a</sup>	PM2.5 <sup>a</sup>
Area (Consumer Products, Landscaping)	<1	<1	<0.1	<0.1
Energy (Natural Gas)	<1	<1	<0.1	<0.1
<b>Total Project On-Site Emissions</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>&lt;0.1</b>	<b>&lt;0.1</b>
<b>SCAQMD Numeric Indicators</b>	<b>131</b>	<b>962</b>	<b>2</b>	<b>2</b>
<b>Significant Impact?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: Refer to Appendix A

<sup>a</sup> Emissions account for implementation of dust control measures as required by SCAQMD Rule 403—Fugitive Dust.

<sup>b</sup> LSTs for a 2-acre site in SRA 18 at a receptor distance of 25 meters.

### **Construction TACs**

Construction of the proposed project would result in short-term emissions of diesel PM, a known toxic air contaminant (TAC). Diesel PM poses a carcinogenic health risk that is measured using an exposure period of 70 years. The exhaust of off-road heavy-duty diesel equipment would emit diesel PM during excavation and backfilling; installation of utilities, materials transport and handling and other miscellaneous activities. SCAQMD has not adopted a methodology for analyzing such impacts and has not recommended that health risk assessments be completed for construction-related emissions of TACs for short duration construction activities.

According to the Office of Environmental Health Hazard Assessment (OEHHA), carcinogenic health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period or duration of activities associated with the proposed project. The construction period for the proposed project would be at most 2 weeks (significantly less than the 70-year period used for risk determination). Because off-road heavy-duty diesel equipment would be used only for short time periods, there is a minimum amount of on-site equipment anticipated for use during construction activities, and the PM<sub>10</sub> emissions associated with project exhaust are minimal, project construction would not expose sensitive receptors to substantial emissions of TACs. This impact would be less than significant.

### **Operational TACs**

Typical sources of acutely and chronically hazardous TACs include industrial manufacturing processes, automotive repair facilities, and dry cleaning facilities. The project is a small addition to a preexisting industrial plant and would likely have little impact on the plant's overall TAC emissions. For this reason, the project's effect on operational TAC emissions would be less than significant.

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

**Less than Significant Impact.** During construction of the proposed project, exhaust from equipment and activities associated with the application of architectural coatings and other interior and exterior finishes may produce discernible odors typical of most construction sites. Such odors would be a temporary source of nuisance to adjacent uses, but would not affect a substantial number of people. As odors associated with project construction would be temporary and intermittent in nature, the odors would not be considered to be a significant environmental impact. Therefore, impacts associated with objectionable odors would be less than significant.

Land uses that are associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Though the proposed LOFLO PS/PWPS facility would be implemented on a wastewater treatment site, the proposed facility itself would not emit any odors. Therefore, the proposed project would result in less than significant odor impacts associated with operational activities.

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## 4.4 Biological Resources

<u>Issues (and Supporting Information Sources):</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>4. BIOLOGICAL RESOURCES — Would the project:</b>				
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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following analysis is based on a review of publicly available data from the CDFW's California Natural Diversity Database (CNDDDB) (CDFW, 2017) and the USFWS's Information for Planning and Consultation (IPaC) Tool (USFWS, 2017) (see **Appendix B**). In addition, the *Orange County Water District Groundwater Replenishment System Final Expansion Project, Addendum No. 6* (OCWD, 2016), California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (CNPS, 2017), and data available on eBird (2017) were reviewed to support the following the analysis. Environmental Science Associates biologist Tommy Molioo performed a site visit on May 12, 2017 to identify and assess avian nesting activity within 500 feet of the project area.

Plant 2 is located within the U.S. Geological Survey (USGS) Newport Beach Quadrangle at Township 6 South, Range 10 West, and Section 20. Plant 2 is currently developed with wastewater treatment structures, offices, paved parking areas and roadways. No native soils are present on the project area as the entire area has been covered with asphalt and concrete. A stand of ornamental fan palms (*Washingtonia* sp.) occurs to the immediate north of the project area, which is the only existing vegetation immediately adjacent to the project area. Planted native shrubs such as big saltbush (*Atriplex lentiformis*) occur to the east of the project area along the

paved Santa Ana River Trail. Land uses immediately surrounding Plant 2 include residential development to the north and west, the Santa Ana River and Trail to the east, and Talbert Marsh and the Pacific Ocean to the south. Sensitive biological resource areas located in the vicinity of Plant 2 include: the Santa Ana River and open space (Banning Ranch and Talbert Regional Park) to the east; the Talbert Marsh to the south; and a California least tern (*Sterna antillarum browni*) and western snowy plover (*Charadrius nivosus* ssp. *nivosus*) nesting site to the south. There is no USFWS-designated Critical Habitat within the project area. Critical Habitat for the coastal California gnatcatcher (*Polioptila californica californica*) is designated approximately 1,000 feet east of the project area (Unit 7 located within Banning Ranch); Critical Habitat for the western snowy plover is designated approximately 0.5 mile south of the project area (Unit CA 47 located on north side of Santa Ana River mouth) (USFWS, 2017).

## Environmental Evaluation

Would the project:

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

**Less than Significant Impact with Mitigation Incorporated.** Based on a review of the CNDDDB and IPaC Tool, a review of the *Groundwater Replenishment System Final Expansion Project, Addendum No. 6*, and a site visit, there is low potential for special-status plant species or wildlife species to occur on Plant 2 (CDFW, 2017; OCWD, 2016; USFWS, 2017). The project area lacks suitable habitat to support special-status plant and most special-status wildlife species that were identified in the database search. However, the native vegetation located between the project area and Santa Ana River, as well as the ornamental fan palms and communication tower north of the project area provide nesting opportunities for songbirds and raptors. A common raven (*Corvus corax*) was observed within a nest located on the communication tower immediately adjacent to the project area during the May 2017 site visit, suggesting the nest may be active. One other nest was observed on the communication tower, however no avian activity was documented around this nest. No other bird nests were observed within 500 feet of the project during the May 2017 site visit.

While the proposed project would not involve removal of any vegetation or the communication tower, there is potential for nesting birds to be indirectly impacted as a result of construction noise, if construction occurs during the breeding season. Nesting activity typically occurs from February 15 to August 31 for songbirds and January 15 to August 31 for raptors. Disturbing or destroying active nests is a violation of the Migratory Bird Treaty Act. In addition, nests and eggs are protected under California Fish and Game Code Section 3503 and 3503.5. As such, indirect impacts (e.g. by noise causing abandonment of the nest) to nesting birds is considered a potentially significant impact. Implementation of Mitigation Measure BIO-1 would reduce impacts to nesting birds to less than significant by requiring identification and avoidance of active nests (and an appropriately-sized buffer) if it is infeasible to schedule construction outside the avian nesting season.

## **Mitigation Measures**

**BIO-1:** To the extent feasible, grading and excavation activities shall be scheduled outside the nesting season (September 1 to February 14 for songbirds; September 1 to January 14 for raptors) to avoid potential impacts to nesting birds. If avoidance of the nesting season is not feasible during grading and excavation activities, suitable nesting habitat within 500 feet of construction activities shall be surveyed for the presence of nesting birds by a qualified biologist. If any active nests are detected, a buffer of 300 feet for songbirds (or 500 feet for raptors) around the nest adjacent to construction will be delineated, flagged, and avoided until the nesting cycle is complete. The buffer may be modified and/or other recommendations proposed as determined appropriate by the qualified biologist to minimize impacts. Nest buffer distance will be based on species, specific location of the nest, the intensity of construction activities, existing disturbances unrelated to the proposed project present in the project area, and other factors. The qualified biologist will be responsible for coordinating with USFWS and CDFW to ensure proper measures are implemented to minimize impacts to any active nest sites that would be subject to disturbance.

## **Significance after Mitigation**

With the implementation of Mitigation Measures BIO-1, the proposed project would result in a less than significant impact to nesting birds.

- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?**

**No Impact.** The majority of Plant 2 Site is improved with paved surfaces; the project area consists solely of developed land. Adjacent land cover types in the vicinity of the project area include ornamental, disturbed habitat, and open water associated with the Santa Ana River. No sensitive vegetation communities were identified in the project area. Therefore, implementation of the proposed project would result in no impacts to sensitive natural communities.

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

**No Impact.** Plant 2 is developed with water and wastewater treatment facilities. The locations where the proposed project facilities and improvements would occur are paved and in a disturbed condition. Because of the developed conditions within the project area, a wetland delineation was not conducted for the proposed project. The Santa Ana River occurs to the east of the project area, but will not be 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?**

**No Impact.** Plant 2 is a developed property that has been improved with buildings, water and wastewater treatment facilities, roadways and parking areas. As a result, the project area lacks suitable habitat or provide linkages to suitable habitat to support wildlife movement. The Talbert Marsh is located approximately 650 feet from the construction activities and the California least tern/western snowy plover nesting site is located approximately 0.5 mile from where the construction would occur. At these distances, the construction noise levels would be minimal and would not pose a potential disruption to nesting birds. The implementation of the proposed project would not result in significant adverse impacts to migratory birds or result in significant adverse impacts to wildlife movement.

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

**No Impact.** The City of Huntington Beach does not have local policies or ordinances protecting biological resources that apply to the project area. Therefore, implementation of the proposed project would not be in conflict with local polices or ordinances that provide for the protection of biological resources.

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

**No Impact.** The project area is located within the Orange County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP). However, the project area is not within an area that is specifically protected or has additional conditions for conservation. Construction activities would be contained entirely within the Plant 2 property, and the proposed project would not conflict with the provisions of the management of designated areas. No impacts would occur.

## References

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California Native Plant Society (CNPS), 2017. Inventory of Rare and Endangered Plants of California. California Native Plant Society. Available at: <http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>. Accessed March 13, 2017.

eBird, 2017. Online Database of Bird Distribution and Abundance. Species Maps. eBird, Ithaca, New York. Available at: <http://www.ebird.org>. Accessed March 13, 2017.

Orange County Water District (OCWD), 2016. *Groundwater Replenishment System Final Expansion Project, Addendum No. 6, Final EIR*. August 2016.

U.S. Fish and Wildlife Service (USFWS), 2017. Information for Planning and Consultation (IPaC). Resource List. Accessed April 17, 2017.

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## 4.5 Cultural Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>5. CULTURAL RESOURCES — Would the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Discussion

The following analysis is based on a records search at the South Central Coastal Information Center (SCCIC), a historic map and aerial photograph review, geoarchaeological review, and Native American outreach.

A records search for the project area was conducted on June 21, 2016 at the SCCIC, located at California State University, Fullerton. The records search included a review of all recorded cultural resources within an approximate 0.5-mile radius of the project area, as well as a review of cultural resource reports on file. The Historic Properties Directory was also examined for any documented historic-period built resources within or adjacent to the project area.

### Archival Research Results

A total of eight cultural resources studies have been conducted within an approximate 0.5-mile radius of the project area (**Table 9**). Of the eight previous studies, one study, OR-2033, included the project area.

### Previously Recorded Cultural Resources

The records search indicated that three cultural resources have been previously recorded within an approximate 0.5-mile radius of the project area (**Table 10**). No cultural resources have been previously recorded within the project area.

**TABLE 9  
PREVIOUS CULTURAL RESOURCES INVESTIGATIONS INCLUDING THE PROJECT AREA**

<b>Author</b>	<b>SCIC # (OR-)</b>	<b>Title</b>	<b>Year</b>
Scientific Resource Surveys, Inc.	257	<i>Archaeological Survey Report on Lot 10, Tract No. 653 Located at 2182 Pacific Avenue in the Costa Mesa Area of the County of Orange, California</i>	1978
Unknown	1731	<i>Index into the Artifacts Collected During the Second Part of the WPA Project</i>	1961
Mason, Roger D.	2033*	<i>Research Design for Evaluation of Coastal Archaeological Sites in Northern Orange County, California</i>	1987
Drover, Christopher E.	2129	<i>A Cultural Resources Inventory for the Newport Banning Ranch, City of Newport Beach, Orange County</i>	1999
LSA Associates, Inc.	3535	<i>Cultural Resource Assessment Survey, for the 403-Acre Banning Ranch Property, City of Newport Beach, Orange County, California</i>	2008
Michael Brandman Associates	3618	<i>Cultural Resources Records Search Results and Site Visit for Cingular Wireless Candidate Lsanca3086d (Indianapolis and Magnolia), South of Atlanta Avenue, West of Brookhurst Street, Huntington Beach, Orange County, California</i>	2007
ATC Associates	3995	<i>Record Search and Field Reconnaissance for the proposed AT&amp;T Wireless Telecommunications Site LA3086, located at 21261 Brookhurst Street, Huntington Beach, California</i>	2011
BonTerra Consulting	4328	<i>Archaeological Resources Assessment Newport Banning Ranch, Newport Beach, California</i>	2010

\* Indicates study overlaps the project area

**TABLE 10  
PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN 0.5 MILE OF THE PROJECT AREA**

<b>Primary # (P-30)</b>	<b>Trinomial (CA-ORA-)</b>	<b>Other Designation</b>	<b>Description</b>	<b>Date Recorded</b>
000165	CA-ORA-165	Banning Extract, Portion A	Prehistoric archaeological site consisting of stone bowl fragments, lithic fragments, and pestles	1960
000845	CA-ORA-845	ACE-SAR-8	Prehistoric archaeological site consisting of a single shell midden	1998; 1979
000906	CA-ORA-906	-	Prehistoric archaeological site consisting of a single shell midden	1998; 1979

## Historic Map and Aerial Review

Historic maps and aerial photographs were examined in order to provide historical information about the project area and to contribute to an assessment of the project area's archaeological sensitivity. Available maps include: the 1868 U.S. Surveyor General's survey plat map of Townships 5 and 6 South, Range 10 West the 1895 and 1901 Santa Ana 1:62,500 topographic quadrangles; the 1902 Corona 1:125,000 topographic quadrangle; and the 1935 Newport Beach 1:31,600 topographic quadrangles; and 1965 and 1975 Newport Beach 7.5-minute topographic

quadrangle. Historic aerial photographs were available for the years from 1938, 1953, 1963, 1972, 1994, 2002, 2003, 2004, 2005, 2009, and 2010 (historicaerials.com, 2016).

The 1868 U.S. Surveyor General's survey plat map shows the project area as being located within Rancho Las Bolsas. The plat map indicates salt marshes within the current location of OCSD Plant 2. The available historic maps and aerial photographs indicate that the project area and surrounding area was largely used for agricultural purposes throughout the 20<sup>th</sup> century, and did not become urbanized until the latter half of the century. The Santa Ana River is shown confined with artificial levees in the 1938 historic aerial photograph. OCSD's Plant 2 is not shown on the 1953 aerial. Plant 2 is shown on the 1965 Newport Beach 7.5-minute topographic quadrangle. Based on a detailed review of the 1972 and 2016 aerials of Plant 2, there are structures shown on the 1972 aerial that remain visible on the 2016 aerial photograph.

## **Geology, Soils, and Geomorphology**

Plant 2 is on the distal portion of a landform dominated by a low-gradient, sandy alluvial fan that merges with marine deposits at the coast. During the late Pleistocene, Plant 2 was approximately 5.5 miles (9.0 km) inland. Historically, the project area consisted largely of salt marsh, which would have been at or just above sea level, and was divided by small channels. The area was for cultivation of celery in historic times.

Plant 2 was initially developed for sanitation in 1954, but the parcel, including the project area, was progressively developed towards the north over the next 5 decades. The project area is covered with a paved surface that is at elevation of 3 to 4 meters above mean sea level (amsl), suggesting the project area contains several meters of fill overlying the native salt marsh deposits. Some of the fill material may have originated as dredge spoils from channelization of the Santa Ana River. Near surface geology of the project area is mapped as late Holocene to latest Pleistocene alluvial fan deposits (Morton, 2004; Morton and Miller, 2006). These deposits consist of gravel, sand, and silt transported and deposited by the Santa Ana River.

Soils at Plant 2 are mapped primarily as Bolsa silt loam (NRCS, 2016). Bolsa series soils are deep, somewhat poorly drained soils developed in mixed alluvium parent material on flood plains and basins. The typical soil pedon consists of a plowed A-horizon (Ap1, Ap2) developed at the top of relatively unaltered alluvial parent material (C1 through C6) extending more than 69 inches deep. The absence of a B-horizon is likely due to the short geological time that has passed since deposition of the parent material, although agricultural activity has the potential to have disrupted the development of a recognizable B-horizon as well. The A-horizon in Bolsa soils ranges from sandy loam to silty clay loam, while the C-horizon is mainly silt loam and silty clay loam but may contain thin strata of sandier material (USDA, 1997).

Significantly, many Bolsa soil pedons contain buried A-horizons (paleosols). These buried A-horizons represent periods of time in the past during which landform conditions were relatively stable, and during which deposition and erosion were sufficiently balanced to allow for development and retention of a soil weathering profile. From an archaeological perspective, periods of landform stability, such as those signified by buried A-horizons, should be correlated

with the accumulation and preservation of cultural remains. Therefore, Bolsa soils are considered to have a high sensitivity for buried archaeological resources.

Although paved and filled, Plant 2 appears to retain high sensitivity for buried archeological resources. During the latest Pleistocene and Holocene, the geomorphic setting of Plant 2 changed from inland to coastal, and rising sea level resulted in fluvial deposition capable of burying archaeological resources. Plant 2 was largely salt marsh into the early 20th century, but this is an area that would have offered important resources. Owing to its marshy environment, this area may not have been favored for any substantial occupation, but nonetheless is likely to have been visited for resource procurement and could contain artifacts associated with those activities. Additionally, the saturated conditions offered within this setting may have aided in the preservation of relatively rare organic artifacts.

## Paleontological Records Search

Dr. Samuel A. McLeod, Ph.D., of the Natural History Museum of Los Angeles County, Vertebrate Paleontology Section, conducted a thorough search on June 16, 2016 of the paleontology collection records for the locality and specimen data for the project area. No vertebrate fossil localities lie within the project area; however, there are localities nearby from the same sedimentary units that may occur subsurface in the project area. The closest vertebrate fossil locality from Quaternary Terrace deposits is LACM 7366. LACM 7366 produced specimens of marine, freshwater, and terrestrial specimens including leopard shark, *Triakis*, three-spined stickleback, *Gasterosteus*, garter snake, *Thamnophis*, desert shrew, *Notiosorex*, and most prominently, pocket gopher, *Thomomys*. A series of fossil localities, LACM 7422-7425, are located north-northwest of LACM 7366. These localities produced fossil specimens of mammoth, *Mammuthus*, bison, *Bison*, and horse, *Equus*, from Alluvium or dune deposits. The closest vertebrate fossil locality from Quaternary deposits, LACM 6370, produced a specimen of a fossil horse, *Equus*. Fossil locality LACM 3267 located northeast, produced a specimen of a fossil elephant, *Proboscidea* in Quaternary deposits. Fossil locality LACM 4219 produced fossil specimens of turtle, *Chelonia*, and camel, *Camelidae*. Vertebrate fossil locality LACM 1339, located north of the project area, produced fossil specimens of mammoth, *Mammuthus*, and camel, *Camelidae*, bones from sands approximately 15 feet below the top of the mesa that is overlain by shell bearing silts and sands.

The project area has surface deposits of younger Quaternary Alluvium, derived as fluvial deposits from the Santa Ana River to the east of the project. No fossil vertebrate localities are located nearby these deposits, and they are unlikely to contain significant vertebrate fossils, at least in the uppermost layers. Small hills and bluffs both east and west of the project area, however, define the Santa Ana River floodplain drainage and are mapped as having exposures of marine Quaternary Terrace deposits. These or other older Quaternary deposits may occur in the project area at unknown depth. There is a low potential to uncover significant vertebrate fossil remains during surface grading or shallow excavations in the project area. However, excavations that extend down into the older Quaternary deposits may encounter significant fossil vertebrate specimens.

## Environmental Evaluation

Would the project:

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

**Less than Significant Impact.** Based on a historical evaluation (OCWD, 2016), Plant 2 is not directly associated with important events in the history of pumping or treating water, or with the lives of persons significant in the history of water systems in Orange County. No structures within Plant 2 are currently listed in either the National Register or the California Register. No known historical resources are located on Plant 2. The proposed project would not demolish any existing structures and would serve to support the existing function of the wastewater treatment plant. Architectural designs of the proposed new structures 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 geoarchaeological review indicates that the portion of the project area within Plant 2 was largely salt marsh into the early 20th century and would have offered important resources. Owing to its marshy environment, this area may not have been favored for any substantial occupation, but nonetheless is likely to have been visited for resource procurement and could contain artifacts associated with those activities. Additionally, the saturated conditions offered within this setting may have aided in the preservation of relatively rare organic artifacts. Since the proposed project includes ground-disturbing activities, there is a potential for discovery of subsurface archaeological deposits that could qualify as historical or unique archaeological resources under CEQA. This potential impact to unknown unique archaeological resources is considered significant. Implementation of Mitigation Measures CUL-1 through CUL-4 would reduce impacts to archaeological resources to less than significant by requiring protection and proper handling of such resources, should any resource be uncovered during ground disturbance activities.

### ***Mitigation Measures***

**CUL-1:** Prior to earth moving activities, a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (36 CFR Part 61) shall conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of cultural 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. OCSD shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

**CUL-2:** Prior to the start of any ground-disturbing activities, OCSD shall retain an archaeological monitor to observe all ground-disturbing activities. Archaeological monitoring shall be conducted by a monitor familiar with the types of archaeological resources that could be encountered and shall work under the direct supervision of the qualified archaeologist. Monitoring may be reduced or discontinued by the qualified archaeologist, in coordination with OCSD, based on observations of subsurface soil stratigraphy and/or the presence of older C-horizon deposits. The 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. The 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 OCSD, SCCIC, and any Native American groups who request a copy.

**CUL-3:** Prior to issuance of a grading permit and prior to start of any ground-disturbing activities, OCSD shall retain a Native American monitor to observe all ground-disturbing activities. The monitor shall be obtained from a Tribe that is traditionally and culturally affiliated with the area, according to the Native American Heritage Commission (NAHC) list. The 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. Monitoring may be reduced or discontinued, in coordination with OCSD and the qualified archaeologist, based on observations of subsurface soil stratigraphy and/or the presence of older C-horizon deposits.

**CUL-4:** In the event of the discovery of archaeological materials, OCSD or its contractor shall immediately cease all work activities in the area (within approximately 100 feet) of the discovery until it can be evaluated by the qualified archaeologist. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or tool-making debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone or concrete footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. Construction shall not resume until the qualified archaeologist has conferred with OCSD on the significance of the resource.

If it is determined that the discovered archaeological resource constitutes a historical resource or unique archaeological resource under CEQA, avoidance and preservation in place shall be the preferred manner of mitigation. Preservation in place maintains the important relationship between artifacts and their archaeological context and also serves to avoid conflict with traditional and religious values of groups who may ascribe meaning to the resource. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding the site into a

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

### ***Significance after Mitigation***

With the implementation of Mitigation Measures CUL-1 through CUL-4, the proposed project would result in a less than significant impact to archaeological resources.

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

**Less than Significant Impact with Mitigation Incorporated.** Based on the results of the paleontological database search, there are no known fossil localities in the project area and there is a low potential to uncover significant vertebrate fossil remains during surface grading or shallow excavations. However, excavations that extend down into the older Quaternary deposits may encounter significant fossil vertebrate specimens. Given the proposed project includes ground-disturbing activities, there is a potential for discovery of fossils that may be considered significant paleontological resources. This potential impact to unknown paleontological resources is considered significant. Implementation of Mitigation Measures CUL-5 through CUL-7 would reduce impacts to paleontological resources to less than significant by requiring protection and proper handling of such resources, should any resource be uncovered during ground disturbance activities.

### ***Mitigation Measures***

**CUL-5:** Prior to the start of any ground-disturbing activities, OCSD shall retain a qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards (SVP, 2010). The qualified paleontologist shall contribute to any construction worker cultural resources sensitivity training either in person or via a training module provided to the qualified archaeologist. The training session shall focus on the recognition of the types of paleontological resources that could be encountered within the project area and the procedures to be followed if they are found. The qualified paleontologist shall also conduct periodic spot checks in order to ascertain when older deposits are encountered and where monitoring shall be required.

**CUL-6:** Prior to the start of any ground-disturbing activities, OCSD shall retain a paleontological monitor to observe all ground-disturbing activities within older Quaternary deposits. Paleontological resources monitoring shall be performed by a qualified paleontological monitor, or cross-trained archaeological/paleontological monitor, under the direction of the qualified paleontologist. The monitor shall have the authority to temporarily halt or divert work away from exposed fossils in order to recover the fossil specimens. Monitoring may be reduced or discontinued by the qualified paleontologist, in coordination with OCSD, based on observations of subsurface soil stratigraphy and/or other factors and if the qualified paleontologist determines that the possibility of encountering fossiliferous deposits is low. The monitor shall prepare daily logs detailing the types of activities and soils observed, and any discoveries. The qualified paleontologist shall prepare a final monitoring report to be submitted to OCSD and filed with the local repository. Any recovered significant fossils shall be curated at an accredited facility with retrievable storage.

**CUL-7:** If construction or other project personnel discover any potential fossils during construction, regardless of the depth or presence of a monitor, work in the vicinity (within 100 feet) of the find shall cease until the qualified paleontologist has assessed the discovery and made recommendations as to the appropriate treatment.

### ***Significance after Mitigation***

With the implementation of Mitigation Measures CUL-5 through CUL-7, the proposed project would result in a less than significant impact to paleontological resources.

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

### ***Mitigation Measures***

**CUL-8:** If human remains are encountered, OCSD or its contractor shall halt work in the vicinity (within 100 feet) of the find and contact the Orange County Coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American, the NAHC will be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98. The NAHC will designate an MLD for the remains per PRC



Section 5097.98. Until the landowner has conferred with the MLD, OCSD shall ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.

### ***Significance after Mitigation***

With the implementation of Mitigation Measure CUL-8, the proposed project would result in a less than significant impact to human remains, if encountered during ground-disturbing activities.

### **References**

- Morton, D.M., 2004. Preliminary Digital Geological Map of the 30' X 60' Santa Ana Quadrangle, southern California, version 2.0. U.S. Geological Survey, Open-File Report OF-99-172. Available at: <https://pubs.usgs.gov/of/1999/of99-172/sanana2dmu.pdf>.
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- U.S. Department of Agriculture (USDA), 1997. Bolsa Series. Available at: [https://soilseries.sc.egov.usda.gov/OSD\\_Docs/B/BOLSA.html](https://soilseries.sc.egov.usda.gov/OSD_Docs/B/BOLSA.html).
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## 4.6 Geology, Soils, and Seismicity

<u>Issues (and Supporting Information Sources):</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>6. GEOLOGY, SOILS, and SEISMICITY —</b>				
<b>Would the project:</b>				
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.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following analysis is based on the evaluation of the following:

- Review of readily available background materials including published geologic and seismic hazards maps and stereoscopic aerial photographs.
- Review of the geology and soils information provided in the *Orange County Water District Groundwater Replenishment System Final Expansion Project, Addendum No. 6* (OCWD, 2016).
- Review of information presented in *Faulting Study Results Proposed Low-Flow and Plant Water Pump Stations Ocean Outfall System Rehabilitation Orange County Sanitation District Plant No. 2, Technical Memorandum* (Kleinfelder, 2017).

## Environmental Evaluation

Would the project:

- a) **Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**
  - i) **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)**

**Less than Significant with Mitigation Incorporated.**

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 located within an area with active splays of the Newport-Inglewood fault.

The project area is not within a designated AP Zone. However, recent geotechnical studies conducted on the project area by Kleinfelder (2017) have identified the presence of fault traces associated with the Newport-Inglewood fault zone directly under the project area. The Newport-Inglewood fault zone located in the Los Angeles Basin consists of a series of short, discontinuous, northwest-trending right-lateral faults, relatively shallow anticlines and subsidiary normal and reverse faults extending approximately 36 miles from the Santa Monica Mountains to offshore Newport Beach. Four faults were identified within the project area. All faults offset the early Holocene aquitard layer, as well as several overlying layers, indicating that these faults are active (Kleinfelder, 2017). Thus, the project area could be subject to ground fault rupture resulting from a seismic event.

The Alquist-Priolo Act requires that structures designed for human occupancy be located at least 50 feet from a known fault, or 25 feet if detailed assessments determine the hazard is avoided at 25 feet. Since human occupancy of the new joint LOFLO PS/PWPS facility would specifically be less than 2,000 man hours per year noted in the Alquist-Priolo Act, the 50-foot buffer is not applicable to the proposed project.

The California Building Code (CBC), which has been codified in the California Code of Regulations (CCR) as Title 24, Part 2 specifically establishes minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The CBC (Section 1613.1) includes earthquake design requirements that take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to

SDC E (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

The design of the new joint LOFLO PS/PWPS facility would comply with the standards of the CBC for unoccupied structures located over fault zones. Adherence to the CBC standards would ensure the strongest structure feasible at the proposed location, with no increased risk to human life. It should be noted that while the new joint LOFLO PS/PWPS facility would provide vital function in wastewater discharge, Plant 2 has redundancies in place that could accommodate the function of discharge to the ocean outfall in the event of a facility outage. Should the structure be damaged by surface rupture, Plant 2 would continue to function.

Mitigation Measure GEO-1 requires OCSD to design the new joint LOFLO PS/PWPS facility to meet CBC standards for construction of non-occupied structures within a fault zone. Mitigation Measure GEO-1 would also ensure the facility would be constructed in accordance with recommendations of the design-level geotechnical investigations. Implementation of Mitigation Measure GEO-1 would ensure that impacts from seismic activity would be less than significant.

**ii) Strong seismic ground shaking?**

**Less than Significant with Mitigation Incorporated.** The project area is located in a seismically active region and is subject to strong ground shaking. Ground shaking is partly related to the size of an earthquake, the distance from the epicenter, and the response of the geologic materials at the site. As a rule, the greater the earthquake magnitude and the closer the fault rupture to the site, the greater the intensity of ground shaking and potential damage to facilities. As discussed, the Newport-Inglewood fault zone is a known active fault within the project area and is capable of producing earthquakes. The Newport-Inglewood-Rose Canyon fault is capable of generating a magnitude (Mw) 7.1 earthquake and has an estimated slip rate of 0.5 to 2.0 millimeters per year.

Earthquakes are unavoidable hazards; however, the resultant damage can be minimized through appropriate seismic design and engineering. As discussed under i) above, OCSD would design the new joint LOFLO PS/PWPS facility in conformance with applicable standards established by the CBC. These design standards consider proximity to potential seismic sources and the maximum anticipated groundshaking possible, and compliance with these building safety design standards would reduce potential impacts associated with groundshaking. Implementation of Mitigation Measure GEO-1 would ensure that impacts would be less than significant.

**iii) Seismic-related ground failure, including liquefaction?**

**Less than Significant with Mitigation Incorporated.** 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 due to its younger alluvial soils (City of Huntington Beach, 2009; DOC, 1997; OCWD, 2016). Thus, in the event of a large earthquake with a high acceleration of seismic shaking, the potential for liquefaction exists. Given this

potential, if liquefiable soils are not taken into consideration in the design of proposed joint LOFLO PS/PWPS facility and during construction site preparation activities, liquefiable soils could have the potential to impact the structural components of the proposed project. Therefore, implementation of the proposed project could expose people or structures to potential significant impacts, including the risk of loss, injury, or death involving liquefaction. Implementation of Mitigation Measure GEO-1 would ensure that impacts would be less than significant.

### ***Mitigation Measures***

**GEO-1:** OCSD shall conduct site-specific, design-level geotechnical investigations to evaluate the geological and seismic hazards of: slope instability; liquefaction; total and differential settlement, and surface displacement due to faulting or seismically induced lateral spreading or flow. Following geotechnical investigations, a geotechnical report shall be prepared by a structural and geotechnical engineer. The geotechnical report shall include recommendations for foundation design or other measures to mitigate these hazards. Final design of the new joint LOFLO PS/PWPS facility shall be consistent with the most recent version of the California Building Code (CBC), Seismic Hazards Mapping Act, and Zone 4 requirements to mitigate potential risks from fault rupture, expansive soils, liquefaction hazards, and ground accelerations, and shall incorporate recommendations contained in the geotechnical report. The final design shall be stamped by a professional engineer.

### ***Significance after Mitigation***

Implementation of Mitigation Measure GEO-1 would include design measures to reduce the risk for geologic hazards, such as those from ground-failure, liquefaction, and expansive soils. Therefore, the proposed project would not expose people or structures to potential adverse effects involving seismic-related ground failure, including liquefaction, and impacts would be less than significant.

#### **iv) Landslides?**

**No Impact.** The implementation of the proposed project would not result in landslides. Landslides are deep-seated ground failures (several tens to hundreds of feet deep) in which a large section of a slope detaches and slides downhill. The project area is located in a relatively flat area that has previously been graded and developed. There is no known history of landslides in the general area of the project. Further, the project area is not within a State-Designated Seismic Hazard Zone for Earthquake-Induced Landslides (DOC, 1997). Therefore, landslides are not considered a potential hazard within the project area and no impacts would occur.

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

**Less than Significant Impact.** Soil exposed by construction activities for the proposed project could be subject to erosion if exposed to heavy rain, winds, or other storm events. Further, as construction could disturb one or more acres of soil, OCSD would be required to comply with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. In

compliance with this permit, a Storm Water Pollution Prevention Program (SWPPP) would be prepared and implemented, which would require erosion control, sediment control, non-stormwater and waste and material management Best Management Practices (BMPs) to minimize the loss of topsoil or substantial erosion.

Furthermore, implementation of the proposed project would need to comply with SCAQMD Rule 403 for dust control that would ensure the prevention and/or management of the loss of topsoils and erosion during construction. Therefore, potential loss of topsoil and substantial soil erosion during construction and operation of the proposed project would be less than significant.

- c) **Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?**

**Less than Significant with Mitigation Incorporated.** 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 Huntington Beach General Plan (City of Huntington Beach, 2009). 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. The proposed project would involve grading activities and would construct subterranean facilities that could induce unstable soil activity. Therefore, the project could be located on unstable soils resulting in potentially significant impacts.

### ***Mitigation Measure***

See Mitigation Measure GEO-1.

### ***Significance after Mitigation***

Implementation of Mitigation Measures GEO-1 would include design measures to reduce the risk of unstable soils resulting from liquefaction or collapse. Therefore, the proposed project would not expose people or structures to potential adverse effects from unstable soils and impacts would be less than significant.

- 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 with Mitigation Incorporated.** Expansive soils are characterized by their ability to undergo significant shrink or swell due to variations in moisture content. This can result from precipitation, landscape irrigation, utility leakage, roof drainage, perched groundwater, drought, or other factors. The predominate soil association within the project area is the Heuneme-Bolsa Association, a nearly level, excessively drained fine sand loams located on alluvial fans and floodplains. The soils are characterized has having a moderate-to-high shrink-swell potential (OCWD, 2016). Therefore, impacts related to expansive soils are potentially significant.

### ***Mitigation Measures***

See Mitigation Measure GEO-1.

### ***Significance after Mitigation***

Implementation of Mitigation Measure Geo-1 would include design measures to reduce the risk for geologic hazards, such as those from expansive soils. Therefore, the proposed project would not expose people or structures to potential adverse effects involving expansive soils, and impacts would be less than significant.

- 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**

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## 4.7 Greenhouse Gas Emissions

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

### Discussion

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

Carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>) are the principal GHGs. When concentrations of these gases exceed natural concentrations in the atmosphere, the greenhouse effect may be intensified. CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O occur naturally, and through human activity. Emissions of CO<sub>2</sub> are largely by-products of fossil fuel combustion, whereas CH<sub>4</sub> results from off-gassing<sup>3</sup> associated with agricultural practices and landfills. Other human-generated GHGs include fluorinated gases such as SFCs, PFCs and SF<sub>6</sub>, which have much higher heat-absorption potential than CO<sub>2</sub>, and are byproducts of certain industrial processes.

CO<sub>2</sub> is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the

<sup>3</sup> Off-gassing is defined as the release of chemicals under normal conditions of temperature and pressure.



mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas contributes to global warming relative to how much warming would be caused by the same mass of CO<sub>2</sub>. For example, CH<sub>4</sub> and N<sub>2</sub>O are substantially more potent GHGs than CO<sub>2</sub>, with GWPs of 21 and 310 times that of CO<sub>2</sub>, respectively.

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons of CO<sub>2</sub> equivalents (CO<sub>2</sub>e). CO<sub>2</sub>e is calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH<sub>4</sub> and N<sub>2</sub>O have much higher GWPs than CO<sub>2</sub>, CO<sub>2</sub> is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO<sub>2</sub>e, both from residential/commercial developments and human activity in general.

### ***Executive Order S-3-05***

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

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

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

In 2006, the California State Legislature adopted AB 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub> and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions and is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

As required by HSC Division 25.5, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was originally set at 427 million metric tons (MMT) CO<sub>2</sub>e. CARB also projected the state's 2020 GHG emissions under business-as-usual (BAU) conditions – that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB originally used an average of the state's GHG emissions from 2002 through 2004 and projected the 2020 levels at approximately 596 MMTCO<sub>2</sub>e. In 2014, CARB revised the target using updated GWP values from the IPCC Fourth Assessment Report (AR4) and determined that the 1990 GHG emissions inventory and 2020 GHG emissions limit is 431 MMTCO<sub>2</sub>e. CARB also updated the State's 2020 BAU emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy. CARB's revised 2020 BAU emissions estimate using the GWP values from the IPCC AR4 is 509.4 MMTCO<sub>2</sub>e.

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197, both were signed by Governor Brown. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities. CARB is in the process of preparing and adopting the 2017 Climate Change Scoping Plan Update to reflect the 2030 target established in Executive Order B-30-15 and SB 32.

### ***Senate Bill 375***

SB 375, which establishes mechanisms for the development of regional targets for reducing passenger vehicle greenhouse gas emissions, was adopted by the State on September 30, 2008. On September 23, 2010, CARB adopted the vehicular greenhouse gas emissions reduction targets that had been developed in consultation with the metropolitan planning organizations (MPOs); the targets require a 7 to 8 percent reduction by 2020 and between 13 to 16 percent reduction by 2035 for each MPO. SB 375 recognizes the importance of achieving significant greenhouse gas reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs, such as the Southern California Council of Governments (SCAG) will work with local jurisdictions in the development of sustainable communities strategies (SCS) designed to integrate development patterns and the transportation network in a way that reduces greenhouse gas emissions while meeting housing needs and other regional planning objectives. SCAG's reduction target for per capita vehicular emissions is 8 percent by 2020 and 13 percent by 2035 (CARB, 2010). The MPOs will prepare their first SCS according to their respective regional transportation plan (RTP) update schedule with the SCAG RTP/SCS adopted on April 4, 2012.

### ***South Coast Air Quality Management District***

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<sub>2</sub>e/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.

The SCAQMD flowchart uses a tiered approach in which a proposed project is deemed to have a less than significant impact related to GHG emissions when any of the following conditions are met:

- GHG emissions are within GHG budgets in an approved regional plan
- Incremental increases in GHG emissions due to the project are below the defined Significance Screening Levels, or Mitigated to Less than the Significance Screening Level
- Performance standards are met by incorporating project design features and/or implementing emission reduction measures
- Carbon offsets are made to achieve target significance screening level

## Environmental Evaluation

Would the project:

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

**Less than Significant Impact.** According to SCAQMD methodology, because GHG emissions are a cumulative impact, project significance is determined by the combined amortized construction and operational emissions.

Construction-related GHG emissions for the proposed project were estimated using CalEEMod Version 2016.3.1 with the same assumptions as the air quality analysis. The proposed project's total estimated GHG emissions during construction would be approximately 1,128 MTCO<sub>2e</sub>. This would equal approximately 37.6 MTCO<sub>2e</sub> per year after amortization over 30 years per SCAQMD methodology.

Area and indirect sources associated with the proposed project would primarily result from electricity consumption, water transport (the energy used to pump water to and from the project area), and solid waste generation.

Similar to the air quality analysis, the annual operational GHG emissions associated with the project are presented as an addition to preexisting emissions due to the potential overlap in operation while the old facility is intermittently decommissioned.

Currently, while SCAQMD has issued proposed standards and guidelines, there is no adopted state or local standard for determining the cumulative significance of the proposed project's GHG emissions on global climate change. However, the SCAQMD has proposed a screening level of 10,000 MTCO<sub>2e</sub> per year for industrial projects (SCAQMD, 2008). It is estimated that this screening threshold would capture 90 percent of the GHG emissions from new industrial projects. Since the City also has not adopted any significance criteria or guidelines for GHG analysis, the annual threshold of 10,000 MTCO<sub>2e</sub> proposed by the SCAQMD was used as a screening level for determining the significance of the proposed project's GHG emissions.

As shown in **Table 11**, the proposed project's total annual GHG emissions, as calculated using CalEEMod Version 2016.3.1, would be approximately 128 MTCO<sub>2e</sub> per year (detailed calculations are included in **Appendix C**), which would not exceed SCAQMD's proposed screening level of 10,000 MTCO<sub>2e</sub> per year for industrial projects. Therefore, the change in GHG emissions resulting from project implementation is considered to be less than significant.

**TABLE 11**  
**ESTIMATED CONSTRUCTION- AND OPERATIONS-RELATED GHG EMISSIONS**

Emission Source	Estimated Emissions CO <sub>2</sub> e (MT/year)
<b>Construction</b>	
Annual Mitigated Construction (Amortized over 30 years)	34
<b>Operations</b>	
Area Sources	<0.1
Energy Consumption	43
Mobile Sources	30
Solid Waste	7
Water Consumption	14
<b>Total (Construction and Operational Emissions)</b>	<b>128</b>
<b>Greater than 10,000 MTCO<sub>2</sub>e?</b>	<b>No</b>
<b>NOTES:</b>	
<sup>a</sup> GHG emissions for intermittent construction phases (e.g. demolition, drainage) calculated proportionally to number of work days, not total days	
SOURCE: Refer to Appendix C	

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

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

***Consistency with CARB Scoping Plan***

The proposed project has no direct conflict with CARB's (2008) Scoping Plan. As shown in Table 11, total GHG emissions are well below the threshold of 10,000 MTCO<sub>2</sub>e per year for industrial projects. Additionally, the project's operational impact will lessen once the old facility is completely decommissioned. The amortized construction emissions of approximately 34 MTCO<sub>2</sub>e represents a negligible and temporary fraction that will not interfere with CARB's planned reduction in emissions stated in the Scoping Plan. Furthermore, the proposed project would not conflict with or impede the future statewide GHG emission reductions goals. CARB has outlined a number of potential strategies for achieving the 2030 reduction target of 40 percent below 1990 levels. These potential strategies include renewable resources for half of the State's electricity by 2030, reducing petroleum use in cars and trucks, and reducing the carbon content of transportation fuels. The proposed project would comply with these future regulations, as promulgated by USEPA, CARB, CEC, or other agency. As a result, the proposed project would be expected to exhibit declining GHG emissions trajectory in-line with future state GHG reductions goals codified in HSC Division 25.5 for 2030. Once completely phased out, the new facility will operate more efficiently than the system it replaced and further contribute to reduction goals. As a result, this impact would be less than significant.

### **Consistency with City of Huntington Beach Energy Action Plan**

The City of Huntington Beach (2011) Energy Action Plan addresses GHG reductions through 2020, consistent with AB 32's goal of reducing GHG emissions to 1990 levels. As demonstrated above, the proposed project would not exceed the SCAQMD's 10,000 MTCO<sub>2e</sub> threshold developed to help the region attain 1990 GHG emission levels by 2020. Therefore, the proposed project would not interfere with the City of Huntington Beach Energy Action Plan as the proposed project would not excessively increase GHG emissions within the City.

### **Consistency with SB 375**

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

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## 4.8 Hazards and Hazardous Materials

<u>Issues (and Supporting Information Sources):</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>8. HAZARDS AND HAZARDOUS MATERIALS — Would the project:</b>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 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 at the existing Cen Gen and OOBS. Operation and maintenance activities associated with the proposed LOFLO PS/PWPS facility would also require limited use of hazardous materials, such as diesel fuel for temporary bypass pump operations. Hazardous materials would be stored in appropriate containers within the pump station facility 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 John H. Eader Elementary School is located 0.4 miles northwest of Plant 2 at 9291 Banning Ave. 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 of the proposed project would require the use of limited quantities of diesel fuel for short term temporary bypass pump operations. Fuels would be stored and used in accordance with existing local and state regulations and would not impact John H. Eader Elementary 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, 2007a). 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 a permitted underground storage tank (UST) and two closed leaking underground storage tank (LUST) cases (DTSC, 2007b; 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 LUSTs at Plant 2 are closed cases because the tanks and affected soils have been removed and determined to have no residual soil contamination, if any exists, that pose a threat to human health or the environment. Further, no known releases have occurred from the existing permitted UST. No additional contaminated sites were identified within 0.25-mile radius of the project area and project area is 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 8 miles to the northeast at 18800 MacArthur Blvd in the City of Costa Mesa. Therefore, the proposed project is not located within an airport land use plan or within 2 miles of a public airport or public use airport. No impact would occur.

- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

**No Impact.** No private airstrips exist in the vicinity of the project area. Therefore, the proposed project would not result in a safety hazard for people residing or working in the project area. No impact would occur.

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

**Less than Significant Impact.** Construction and operation of the proposed project would occur entirely within Plant 2. OCSO currently implements an Integrated Emergency Response Program (IERP) in accordance with Occupational Safety and Health Administration (OSHA) regulations to cover worker safety, spill prevention, emergency response and hazardous materials management for activities at Plant 2. The IERP includes safety procedures for operations and maintenance workers, which includes safety training, hazard communications, and personal protective equipment. Construction of the proposed project is not anticipated to physically interfere with an adopted emergency response plan or evacuation plan because all construction activities and staging areas including internal roadways would be within Plant 2. Construction activities would not interfere with emergency response access to Plant 2 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 Plant 2 property adjacent to the coastal zone and is not located within or in the vicinity of a high fire hazard zone. The proposed project is not located adjacent to wildlands or near a substantial amount of dry brush that could expose people to wildfire risks. No impacts would occur.

## **References**

Department of Toxic Substances Control (DTSC), 2007a. DTSC's Hazardous Waste and Substances Site List- Site Cleanup (Cortese List). Available at: [http://www.dtsc.ca.gov/SiteCleanup/Cortese\\_List.cfm](http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm), accessed Marc 14, 2017.

DTSC, 2007b. EnviroStor, Map Location of Interest. Available at: <http://www.envirostor.dtsc.ca.gov/public/>, accessed March 14, 2017.

State Water Resources Control Board (SWRCB), 2015. GeoTracker. Available at: <https://geotracker.waterboards.ca.gov/>, accessed March 14, 2017.

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## 4.9 Hydrology and Water Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>9. HYDROLOGY AND WATER QUALITY — Would the project:</b>				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Environmental Evaluation

Would the project:

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

**Less than Significant Impact.** The proposed project would require earthwork activities such as site preparation, grading, stockpiling of soils and excavation. These construction activities would 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 for additional information.

Construction of the proposed project would encompass approximately 2 acres; therefore construction would be subject to a General Construction Permit under the National Pollutant Discharge Elimination System (NPDES) permit program of the federal Clean Water Act. As required under the General Construction Permit, the contractor would prepare and implement a SWPPP. The SWPPP requires a submittal of a notice of intent (NOI) application to the Santa Ana Regional Water Quality Control Board (RWQCB) prior to construction activities. Implementation of the SWPPP would be consistent with the Orange County Stormwater Program and Orange County NPDES Permit, and would begin with the commencement of construction and continue through the completion of the project. The objectives of a SWPPP is to identify pollutant sources (such as sediment) that may affect the quality of stormwater discharge and to implement best management practices (BMPs) to reduce pollutants in stormwater.

Erosion control BMPs identified in the SWPPP would be used to prevent the degradation of water quality in the construction area. 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. Further, implementation of standard construction procedures and precautions as discussed in Hazards and Hazardous Materials, 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.

OCSO frequently updates their On-Site Stormwater Management Plan (OSSWMP). The OSSWMP regulates stormwater management for both OCSO treatment plants and stormwater management during operation of Plant 2. The OSSWMP is frequently updated and complies with the Orange County NPDES Permit 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 would 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.

Groundwater would be encountered in excavations below approximately 3 feet during construction of the proposed project. Dewatering as part of the proposed project would not

substantially deplete groundwater supplies or interfere substantially with groundwater recharge. Impacts would be less than significant.

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

**Less than Significant Impact.** The proposed project would not alter the course of a stream or river. Earth-moving activities would occur during construction that would slightly alter the topography of the project area. SWPPP erosion control measures (introduced above) would be implemented to reduce surface run-off impacts during construction. These control measures would reduce potential impacts to less than significant.

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. The existing plant-wide drainage system is adequate to capture/convey flows to OCSD headworks. Therefore, the proposed project would not alter the existing drainage pattern of the project area or area and substantial erosion or siltation would not occur. Impacts would be less than significant.

- d) **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner 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 area. The Santa Ana River is located just east of the project area but project implementation would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-site, off-site, or into the Santa Ana River. BMPs discussed above would control drainage on-site, thereby reducing its potential to cause flooding from occurring on or off-site. 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 OCSD's existing stormwater drainage system. Temporary construction activities such as demolition, grading, and excavation could introduce additional pollutants and sediment into the surface water runoff. Stormwater runoff generated on the project area during operation could result in flooding on- or off-site. During storm events, some runoff could wash into the adjacent Santa Ana River located

east of the project area. However, 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. 06059C0264J) shows that the project area is located within a Zone X “Other Flood Areas” location. This area is a 100-year flood zone that is protected by a levee (FEMA, 2009); 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 in response g), the FEMA FIRM for the project area shows the site is located within the Zone X, 100-year flood zone. The project area is located adjacent to the Santa Ana River Pacific Ocean wetlands; however, the area is protected from flooding by walls and levees constructed by the U.S. Army Corps of Engineers (USACE) in 1995. Failure of the levee is not anticipated; therefore less than significant flood hazards would occur.

**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 Huntington Beach, 2009). 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, 2017a). 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. Impacts would be less than significant.

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, 2017b). 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 0.5 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 Plant 2 facilities or proposed facilities from a tsunami. However, because the proposed project would not include people that are permanently located at the facility, potential tsunami impacts would be less than significant.

Refer to Hazards and Hazardous Materials, discussion iv) above for potential impacts from landslides and mudflows.

## References

City of Huntington Beach, 2009. *General Plan, Environmental Hazards Element*. Amended 2009.

Federal Emergency Management Agency (FEMA), 2009. FEMA Flood Map Service Center, Huntington Beach, CA. Available at: <https://msc.fema.gov/portal>, accessed March 15, 2017.

U.S. Geological Survey (USGS), 2017a. Seismic Seiches. Available at: <https://earthquake.usgs.gov/learn/topics/seiche.php>, accessed March 15, 2017.

USGS, 2017b. Earthquake Glossary, Tsunami. Available at: <https://earthquake.usgs.gov/learn/glossary/?term=tsunami>, accessed March 15, 2017.

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## 4.10 Land Use and Land Use Planning

<u>Issues (and Supporting Information Sources):</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>10. LAND USE AND LAND USE PLANNING —</b>				
<b>Would the project:</b>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 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 facility on the existing Plant 2, 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 joint LOFLO PS/PWPS facility would be consistent with the existing treatment facilities and on-site uses. The project area is located within the City of Huntington Beach's Coastal Zone and is subject to LCP. The LCP is divided into two components: (1) a coastal element and (2) an implementation program. The Coastal Element found in the City of Huntington Beach's General Plan (2011) includes a land use plan and policies to be used by decision makers when reviewing coastal-related issues and proposed development within the Coastal Zone boundary. The implementation program includes the zoning ordinances, zoning district maps, specific plans, and other implementing actions that must comply with the LCP. The project area is designated under P (Public) land uses and is zoned for IL (Industrial Limited) and Residential Agriculture with an Oil Overlay (RA-O). The maximum allowable height in the IL zone is 40 feet; however a variance may be granted for heights up to 50 feet. In addition, the IL zone provides an exception to heights for certain types of structures, including 4 feet parapet walls. The proposed joint LOFLO PS/PWPS facility would be 40 feet

above grade; therefore, the proposed project would not conflict with the building height limitations allowed in the IL zoning code (City of Huntington Beach, 2017).

The proposed project is located within the LCP Land Use designation 4G -Edison Plant (permitted uses public and open space conservation) for activities at Plant 2. The project area is also located in Zone 5 of the Coastal Zone, which extends from Beach Boulevard to the SAR. The LCP design and development component corresponds with Policy LU 13.18 which requires design and development to be compatible in scale, mass, character, and architecture with existing buildings and design characteristics prescribed by the General Plan (City of Huntington Beach, 2013). To be consistent with the General Plan and LCP, OCSD would be required to obtain a Coastal Development Permit (CDP) from the City of Huntington Beach for construction in the coastal zone prior to construction of the proposed project. With compliance with the conditions of approval issued by the City of Huntington Beach in CDP, impacts would be less than significant.

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

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

## **References**

City of Huntington Beach, 2011. *General Plan, Coastal Element*. Amended 2011.

City of Huntington Beach, 2013. *General Plan, Land Use Element*. Amended 2013.

City of Huntington Beach, 2017. Local Coastal Program. Available at:  
<http://www.huntingtonbeachca.gov/government/departments/planning/local-coastal-program/>, accessed March 14, 2017.



## 4.11 Mineral Resources

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

### Environmental Evaluation

Would the project:

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

**No Impact.** According to USGS’ Mineral Resources Data System (USGS, 2017), 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, 18 oil well exists on Plant 2; however, these wells are “plugged” and therefore are no longer active (DOC, 2016). 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 Huntington Beach General Plan (City of Huntington Beach, 2006) 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), 2016. Division of Oil, Gas, and Geothermal Resources Well Finder. Available at: <http://www.conservation.ca.gov/dog/Pages/Wellfinder.aspx>, accessed March 15, 2017.

City of Huntington Beach, 2006. *General Plan, Natural Resources Element*. Amended 2006.

U.S. Geologic Survey (USGS), 2017. Mineral Resources Data System. Available at: <https://mrdata.usgs.gov/mineral-resources/mrds-us.html>, accessed March 15, 2017.

## 4.12 Noise

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>12. NOISE — Would the project result in:</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion

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

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 pending on the noise source and duration. Below is description 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.

### **City of Huntington Beach Noise Ordinance**

Chapter 8.40 of the City of Huntington Beach Municipal Code contains the City’s Noise Ordinance. **Table 12** identifies the exterior noise standards established in the City of Huntington Beach Noise Ordinance.

**TABLE 12  
HUNTINGTON BEACH EXTERIOR NOISE STANDARDS**

Noise Zone	Exterior Noise Standards	Time Period
1 – All residential properties.	55 db(A) 50 db(A)	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.
2 – All professional office & public institution properties.	55 db(A)	Anytime
3 – All commercial properties with the exception of professional office properties.	60 db(A)	Anytime
4 – All industrial properties.	70 db(A)	Anytime

SOURCE: City of Huntington Beach Municipal Code Section 8.40.070

The exterior noise levels shown in Table 12 are meant to be further applied as noise standards based on the duration of the noise; i.e., the louder the noise, the shorter the time it can last. According to Section 8.40.060 of the City Noise Ordinance, it is unlawful for any person at any location within the incorporated area of the City to create noise levels that, when measured on any residential, public institutional, professional, commercial, or industrial property, to exceed the exterior noise standards shown in Table 12:

- a) For a cumulative period of more than 30 minutes in any hour
- b) Plus 5 dB(A) for a cumulative period of more than 15 minutes in any hour
- c) Plus 10 dB(A) for a cumulative period of more than 5 minutes in any hour

- d) Plus 15 dB(A) for a cumulative period of more than ) minute in any hour
- e) Plus 20 dB(A) for any period of time.

### **Construction Noise**

According to Section 8.40.090(d) of the City of Huntington Beach Noise Ordinance, noise sources associated with construction, repair, remodeling, or grading of any real property are exempt from the City Noise Ordinance, provided said activities do not take place between the hours of 8:00 P.M. and 7:00 A.M. on weekdays or Saturdays, or at any time on Sunday or a federal holiday.

### **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.** The proposed project would not expose persons to or generate noise levels in excess of established standards. The closest sensitive receptors to the project area are single family residences located approximately 1,300 feet to the west and residential uses located approximately 2,800 feet to the south. An existing block wall along Brookhurst Street assists in minimizing noise levels at the nearest sensitive receptors.

### **Construction**

Short-term construction noise impacts are related primarily to the use of heavy construction equipment. Construction equipment can be considered to operate in two modes: stationary and mobile. Stationary equipment operates in one location for one or more days at a time, with a fixed-power operation. Mobile equipment moves around a construction site with power applied in cyclic fashion (such as bulldozers, graders, and loaders). Individual pieces of construction equipment anticipated during construction of the proposed project could produce maximum noise levels of 75 dBA to 90 dBA  $L_{max}$  at a reference distance of 50 feet from the noise source, as shown in **Table 13**. 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 13. The usage factors are based on Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) User's Guide (FHWA, 2006).

**TABLE 13  
CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS**

Construction Equipment	Noise Level at 50 Feet (dBA, Lmax)	Estimated Usage Factor, %
Air Compressor	78	50
Compactor	83	20
Concrete Mixer Truck	79	40
Concrete Saw	90	20
Crane	81	40
Drill Rig Truck	79	20
Excavator	81	40
Forklift	75	10
Generator Set	81	50
Grader	85	40
Off-Highway Trucks	76	20
Paver	77	50
Paving Equipment	90	20
Pile Driver (Sonic)	74	50
Roller	80	20
Rough Terrain Forklift	75	10
Rubber Tired Loader	79	50
Skid Steer Loader	80	40
Sweeper/Scrubber	82	10

Source: FHWA, 2006.

Construction equipment would intermittently operate over an 8-hour period. Over the course of a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are being operated concurrently. The project's estimated construction 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 to present a conservative impact analysis. The estimated noise levels at the off-site sensitive receptors were calculated using the FHWA's RCNM, and were based on the concurrent operation of six pieces of equipment 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. The peak day construction noise levels experienced by the off-site sensitive receptors would be up to 49 dBA,  $L_{eq}$  at the single-family residential uses located west of the project area. Receptors are almost fully shielded from the construction site by existing structures and walls; and such shielding is included in the analyses representing a 10 dBA reduction in noise levels.

Under the City of Huntington Beach Noise Ordinance, construction noise would be exempt when it occurs between the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday. All of the construction activity at OCS D Plant No.2 Site would be conducted between the hours of 7:00 a.m. and 5:00 p.m. Monday through Friday. Therefore, there would not be any conflict with the noise ordinance and potential construction noise impacts would be less than significant.

## Operations

Chapter 8.40 of the Huntington Beach Municipal Code serves as the City’s Noise Ordinance, which establishes noise standards to control unnecessary, excessive, and annoying noise levels in the City. **Table 14**, Huntington Beach Exterior Noise Standards, presents the applicable exterior noise standards for the designated noise zones established in the City’s Noise Ordinance.

**TABLE 14  
HUNTINGTON BEACH EXTERIOR NOISE STANDARDS**

Noise Zone	Exterior Noise Standards	Time Period
1 – All residential properties.	55 dB(A) 50 dB(A)	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.
2 – All professional office & public institution properties.	55 dB(A)	Anytime
3 – All commercial properties with the exception of professional office properties.	60 dB(A)	Anytime
4 – All industrial properties.	70 dB(A)	Anytime

SOURCE: City of Huntington Beach Municipal Code Section 8.40.050

Once the proposed pump stations are operational, noise levels generated at the project area would mainly occur from the pump stations.

The analysis of the pump station-related noise is based upon reference noise measurement conducted on July 15, 2016, at a pump station located in the OCWD facility at 18700 Ward Street, Fountain Valley, CA. Pump station-related noise levels were measured inside of the pump station and outside of the pump station at 5 feet from a louver.<sup>4</sup> The pump station-related noise level was then calculated, in terms of hourly  $L_{eq}$ , for sensitive receptor locations based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance. Noise level of 80 dBA was measured inside of the pump station and noise level of 66 dBA was measured at 5 feet from the louver outside of the pump station. The pump station house with louvers would provide approximately 14 dBA noise reduction.

The nearest single-family residential uses west of the project area would be located approximately 1,300 feet from the proposed pump stations. Based on a noise level source strength of 66 dBA at a reference distance of 5 feet, and accounting for distance attenuation (minimum 39 dBA insertion loss) and barrier insertion loss by the existing structures and block walls along Brookhurst Street (minimum 10 dBA insertion loss), pump station related noise would be reduced to 10 dBA at the nearest noise sensitive uses. All of the proposed facilities would be designed to insulate noise of the machinery such that elevated noise levels would be contained on-site. Operation of the project would not expose persons to, or generate noise levels in excess of

<sup>4</sup> A louver is a window blind or shutter with horizontal slats that are angled to admit light and air, but to keep out rain and direct sunshine.

standards established in the noise ordinance, or applicable standards of other agencies, Therefore, impacts would be less than significant.

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

**Less than Significant Impact.** Common sources of vibration impacts from construction activities include; blasting, pile-driving and operation of heavy earth-moving equipment. Sensitive receptors for vibration include structures (especially older masonry structures), people and vibration sensitive equipment. Presently, the State of California, City of Fountain Valley or the City of Huntington Beach does not quantify the level at which excessive groundborne vibration occurs. Groundborne vibration levels resulting from construction activities have been estimated by the Federal Transit Authority (FTA) in its Transit Noise and Vibration Impact Assessment (FTA, 2006). The manual provides practical guidance to evaluating vibration impacts from construction activities. The manual establishes numeric thresholds for construction related and transportation related vibration impacts. There are several different methods that used to quantify vibration impacts. The peak particle velocity (PPV) is defined to describe vibration impacts to buildings. The FTA Guidance Manual determines that potential damage to non-engineered timber and masonry buildings could occur at 0.20 per second PPV for transient sources. The Peak Particle Velocity levels of vibration impacts are shown in **Table 15**.

**TABLE 15  
VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT**

Equipment	Approximate PPV (in/sec)				
	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet
Pile Driver (Sonic)					
Upper range	0.734	0.260	0.197	0.141	0.092
Typical	0.170	0.060	0.046	0.033	0.021
Large Bulldozer	0.089	0.031	0.024	0.017	0.011
Loaded Trucks	0.076	0.027	0.020	0.015	0.010
Jackhammer	0.035	0.012	0.009	0.007	0.004
Small Bulldozer	0.003	0.001	0.0008	0.0006	0.0004

SOURCE: FTA, 2006.

Vibration can result from the use of heavy construction equipment such as a dozer and a loaded truck. As shown in Table 15, the significance threshold of 0.20 PPV that could result in damage to unreinforced buildings would dissipate beyond 25 feet from the construction activity. The closest residential uses would be approximately 1,300 feet from where the headworks improvements would occur. At this distance, the residential uses would not exceed the vibration impact significance threshold of 0.20 PPV. Potential vibration impacts would be less than significant.

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

**Less than Significant Impact.** The proposed project would rehabilitate the existing OOBs on the Plant 2 site. Similar to its existing operational noise environment, the primary source for long-term operational noise would be from the operation of mechanical equipment. The operation of proposed pump stations on Plant 2 would not substantially increase existing operation noise levels within the project vicinity. All of the proposed facilities would be designed to insulate noise of the machinery such that elevated noise levels would be contained on-site. As such, there would not be a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the proposed project, and impacts would be less than significant. No mitigation measures are required.

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

**Less than Significant Impact with Mitigation Incorporated.** As discussed previously under a), due to the distances of the existing off-site sensitive uses to the project area, the project's construction activities would not expose these sensitive receptors to significant noise. The construction equipment would intermittently operate over an 8-hour period. The peak day construction noise levels experienced by the off-site sensitive receptors would be up to 49 dBA,  $L_{eq}$  at the single-family residential uses located west of the project area (refer to discussion under threshold a) above).

A project would normally have a significant impact on noise levels from construction if the project would exceed the ambient noise levels by 5 dBA or more at a noise-sensitive use. Based on the measured noise levels at the nearest off-site sensitive receptors to the project area, it was determined that construction noise levels would not exceed the ambient noise levels by 5 dBA at the off-site sensitive receptors. Implementation of Mitigation Measures N-1 through N-5 would ensure that noise would be minimized.

Percussive construction methods such as pile-driving could result in nuisance noise that may be audible by neighboring land uses. Implementation of Mitigation Measure N-2 would ensure that excessive or annoying noise levels are minimized. Thus, short-term noise impacts from construction would be less than significant at these sensitive off-site locations.

### ***Mitigation Measures***

**N-1:** Stationary construction equipment that generate noise or vibration (e.g., compressors, generators, cement mixing, general truck idling) shall be placed on the construction site as far as possible from the nearest residential land uses.

**N-2:** Sound dampening devices shall be placed around or adjacent to pile driving activities to minimize noise impacts to the surrounding community.



**N-3:** Construction activities shall be limited to between the hours of 7:00 a.m. and 8:00 p.m. and as necessary to comply with local ordinances. Any nighttime or weekend construction activities would be subject to local permitting.

**N-4:** All equipment used during construction shall be muffled and maintained in good operating condition. All internal combustion engine driven equipment shall be fitted with intake and exhaust mufflers that are in good condition.

**N-5:** Nearby sensitive receptors affected by construction shall be notified concerning the timing and construction schedule for the proposed project, and shall be provided with a phone number to call with questions or complaints.

### ***Significance after Mitigation***

With the implementation of Mitigation Measures N-1 through N-5, implementation of the proposed project would result in a less than significant impact involving ambient noise levels in vicinity of the proposed project.

- 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 8 miles to the northeast. 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**

Federal Highway Administration (FHWA), 2006. Roadway Construction Noise Model User's Guide.

Federal Transit Authority (FTA), 2006. *Transit Noise and Vibration Impact Assessment*.

## 4.13 Population and Housing

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>13. POPULATION AND HOUSING — Would the project:</b>				
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 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 flows to the existing OOS and provide upgrades to increase efficiency for internal plant operations. The proposed project would not increase the facility's treatment capacity or require capacity amendments to the facility's NPDES permit. Rather, the proposed project would allow OCS D to continue to provide wastewater treatment services in its service area and to meet forecasted demand and potential growth in the service area, consistent with the District's approved Strategic Plan. The implementation of the proposed project would result in less than significant impacts related to inducement of population growth.

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

**No Impact.** There are no existing residences on Plant 2, 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.

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## 4.14 Public Services

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>14. PUBLIC SERVICES — Would the project:</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Environmental Evaluation

Would the project:

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

**i) Fire protection?**

**No Impact.** The Huntington Beach Fire Department (HBFD) provides fire protection within the City (City of Huntington Beach, 2017a). The nearest station to the project area is Station 4 located approximately 1 mile northwest at 21441 Magnolia St. The proposed project would not change existing demand for fire protection services because operation would not result in a substantial increase in employees or population. Therefore, the proposed project would not substantially increase the need for new fire department staff or new facilities and no impacts would occur.

**ii) Police protection?**

**No Impact.** The City of Huntington Beach is provided with police protection services by the Huntington Beach Police Department (HBPD) (City of Huntington Beach, 2017b). The police station is located 3.5 miles northwest of the project area at 2000 Main Street. 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 HBPD would not be required

to expand or construct new police stations to serve the proposed project. No impacts would occur with the proposed project because additional fire protection facilities would not be needed.

**iii) Schools?**

**No Impact.** The project area lies within the Huntington Beach Union High School District (HBUHSD) service area (HBUHSD, 2017). The student generation rates within (HBUHSD) would not be substantially affected or altered by the redevelopment of the proposed project. The proposed project would not affect local school enrollment. No school facilities would be impacted by the proposed project. In addition, no construction impacts would occur with the proposed project because school facilities would not be needed.

**iv) Parks?**

**No Impact.** The proposed project would not interfere with or have adverse impacts on parks. The proposed project would not involve new housing or employment opportunities that would prompt the need for new parks. The project area is located adjacent to the Santa Ana River and Talbert Regional 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 Huntington Beach, 2017a. Fire Department. Available at: <http://www.huntingtonbeachca.gov/government/departments/fire/>, accessed March 15, 2017.

City of Huntington Beach, 2017b. Police Department. Available at: <http://www.huntingtonbeachca.gov/government/departments/pd/>, accessed March 15, 2017.

Huntington Beach Union High School District (HBUHSD), 2017. Huntington Beach Union High School District. Available at: <http://www.hbusd.edu/>, accessed March 15, 2017.

## 4.15 Recreation

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>15. RECREATION:</b>				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 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) maintains the parks and provides recreational services for the project area. The nearest recreational facility is the Santa Ana River Trail and Talbert Marshlands located adjacent to the project area. The proposed project would not directly introduce new residents within the City. Therefore, the proposed project would not increase the use of these existing recreational facilities within the City and would result in no impact to the physical deterioration of recreational facilities.

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

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

## 4.16 Transportation and Traffic

<u>Issues (and Supporting Information Sources):</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>16. TRANSPORTATION/TRAFFIC —</b>				
<b>Would the project:</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 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 Banning Gate entrance located off Brookhurst Street on the west side of Plant 2. The Orange County Transit Authority and the City of Huntington Beach operate bus services in the project area. Route 35 runs on Brookhurst, with southbound and northbound bus stops approximately 1,175 feet and approximately 1,250 feet north of Pacific Coast Highway, respectively along Brookhurst Street.

Direct traffic impacts, such as local congestion and disruption of traffic flow from construction of the proposed project would be temporary. Construction activities that would generate off-site traffic would include the delivery of construction vehicles and equipment to the project area, the daily arrival and departure of construction workers, the off-hauling of excavated soil, and the delivery of materials throughout the construction period. The estimated haul truck traffic would vary depending on the construction activity; however, it is estimated that the excavation of soil within the project area would occur intermittently for approximately 60 total working days from March 2019 through June 2020. Approximately 30 truck haul trips would occur each day over this period of excavation. The haul trucks would exit the staging area and travel approximately 1,000 feet to Brookhurst Street and off to local roadways and highways. The addition of haul truck trips along Brookhurst Street would not substantially affect capacity of the roadways. 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 employees traveling to the project area. Employees currently provide routine facility maintenance activities at the existing OOS facilities. These maintenance activities would continue with the proposed joint LOFLO PS/PWPS facility. Therefore, no increase in long-term traffic would occur to the project area.

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

**c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

**No Impact.** The proposed project is not located within the Airport Influence Area of any nearby airports. The nearest airport to the project area is John Wayne Airport, a public airport



approximately 8 miles northeast of the project area. The proposed project does not involve any aviation components or structures at heights that would potentially pose an aviation concern. No project activities would alter the existing air traffic patterns, levels, or locations that result in safety risks. No impact would occur.

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

**No Impact.** The proposed project would be implemented entirely within Plant 2 and does not include the construction or design of any roadway infrastructure that would cause a safety risk to vehicle operations. Neither construction nor operation of the proposed project would adversely alter the physical configuration of the existing roadway network serving the area, and would not introduce unsafe design features. The proposed project also would not introduce uses (types of vehicles) that are incompatible with existing uses already served by the area's road system. There would be no impact.

**e) Result in inadequate emergency access?**

**No Impact.** Refer to response g) from Hazards and Hazardous Materials, and 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 OOS facilities at Plant 2. 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 no bus service directly adjacent to the project area. The nearest bus stops are located over 1,000 feet and approximately west on the west side of Plant 2 along Brookhurst Street. The Santa Ana River Trail allows pedestrians to travel along the Santa Ana River just adjacent to the project area; however, all construction and operation would take place within Plant 2 and would not impact travel along this trail. No impacts would occur.

## 4.17 Tribal Cultural Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>17. Tribal Cultural Resources —</b>				
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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Discussion

On June 2, 2016, a Sacred Lands File Search (SLF) search request letter was sent to the NAHC in an effort to determine whether any sacred sites are listed on SLF for the project area. A response was provided on June 6, 2016 indicating negative results for Native American cultural resources within the project area.

On March 13, 2017, OCSD sent AB 52 notification letters related to the proposed project to the following Native American Tribes who have requested to be informed on activities conducted by the OCSD, under PRC Section 21080.3.1: San Gabriel Band of Mission Indians, Gabrieleño Band of Mission Indians – Kizh Nation, and Juaneño Band of Mission Indians/Acjachemen Nation. The AB 52 letters were sent to the Tribes pursuant to Public Resources Code Section 21080.3.1 and included a description of the proposed project, a map depicting the project location, and contact information for OCSD.

OCSD received a response from the Gabrieleño Band of Mission Indians – Kizh Nation dated March 30, 2017. The letter indicated that the project area is within their ancestral tribal territory and is within a sensitive area. As a result, the Gabrieleño Band of Mission Indians – Kizh Nation requested consultation pursuant to AB 52. OCSD has attempted to contact representatives of the Gabrieleño Band of Mission Indians – Kizh Nation; however, OCSD has received no information from the Gabrieleño Band of Mission Indians – Kizh Nation regarding any specific potential tribal cultural resources within the project area to-date.

### 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)**

**Less than Significant Impact with Mitigation Incorporated.** Tribal cultural resources listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources are not currently known from the project area. However, as discussed in Section 4.5, the project area is considered highly sensitive for subsurface archaeological resources. Therefore, there is a potential for discovery of currently unknown tribal cultural resources during ground-disturbing activities. This potential impact to unknown resources is considered significant. Implementation of Mitigation Measures CUL-1, CUL-3, and CUL-4, which require cultural resources sensitivity training for construction personnel, monitoring of ground-disturbing activities by a Native American monitor, and avoidance and treatment for significant resources, would ensure potential impacts remain less than significant impacts.

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

**Less than Significant Impact with Mitigation Incorporated.** There are currently no known resources that would be considered significant pursuant to subdivision (c) of Public Resources Code Section 5024.1 within the project area. However, as discussed above and in Section 4.5, the project area is considered highly sensitive for subsurface archaeological resources. Therefore, there is a potential for discovery of currently unknown resources during ground-disturbing activities. This potential impact to unknown resources is considered significant. Implementation of Mitigation Measures CUL-1, CUL-3, and CUL-4, which require cultural resources sensitivity training for construction personnel, monitoring of ground-disturbing activities by a Native American monitor, and avoidance and treatment for significant resources, would ensure potential impacts remain less than significant impacts.

## 4.18 Utilities and Service Systems

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>18. UTILITIES AND SERVICE SYSTEMS — Would the project:</b>				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Environmental Evaluation

Would the project:

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

**No Impact.** During construction of the proposed project, a minimal amount of wastewater would be generated by construction workers and collected by portable toilet facilities. All waste generated in portable toilets would be collected by a City-permitted portable toilet waste hauler and appropriately disposed of at one of the liquid waste disposal stations. These waste disposal stations have been appropriately permitted by the Santa Ana Regional Water Quality Control Board (RWQCB).

During operation of the proposed project, the proposed LOFLO PS would fill the gap where existing OOS pumps cannot operate efficiently within their manufacturer-recommended operating parameters. Further, the PWPS would prevent non-reclaimable plant water from mixing with reclaimable flows. Operation of the new joint LOFLO PS/PWPS facility would not generate wastewater. Nonetheless, all facilities on-site would be in compliance with permit conditions under RWQCB Order R-8-2004-002, and subsequent amendment R8-2008-0058. Compliance with the permit conditions would ensure that all RWQCB requirements would not be exceeded.

Therefore, the implementation of the proposed project would result in no impacts related to the exceedance of wastewater treatment requirements.

**b) Require or result in the 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 operations of the OOBS at Plant 2 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?**

**No Impact.** The proposed project would not require the expansion of any off-site stormwater drainage facilities. The existing plant-wide storm water drainage system has sufficient capacity for this additional facility and would not require expansion as a result of the proposed project. Therefore, implementation of the proposed project would result in no environmental impacts from construction of additional storm water drainage facilities because no new facilities would be required.

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

**Less than Significant Impact.** Water needs of the project during construction would be relatively minor and temporary. Water from Plant 2 could be used for various construction related activities, such as dust suppression. After construction, the proposed project would not include uses that would increase the demand for water. Overall water use is not expected to change as a result of this project. The proposed project would have sufficient water supplies available and less than significant impacts would occur.

**e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

**No Impact.** As discussed above, operation of the proposed project would not generate any wastewater. OCSD would not be required to provide future capacity as result of proposed project implementation. The proposed project has adequate capacity to serve current treatment demands. No impacts would occur.

**f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?**

**Less than Significant Impact.** Construction and implementation of the proposed project is not anticipated to generate a significant amount of solid waste. The construction contractor would be required to dispose of excavated soil and solid wastes in accordance with local solid waste disposal requirements. Construction of the proposed project would result in the removal of approximately 200 cubic yards of material during light demolition of the interior portion of the OOBs and Cen Gen (40 cubic yards per day or 60 tons per day). The generation of material from proposed project implementation is considered minimal compared to the remaining capacity at the nearest landfill which is Frank R. Bowerman. The Frank R. Bowerman Landfill is located at 11002 Bee Canyon Access Road in Irvine. The landfill is permitted to accept up to 11,500 tons per day and is projected to have capacity until 2053 (Orange County Waste and Recycling, 2017). The proposed project's maximum daily construction waste which is approximately 60 tons per day represents less than 1 percent of the landfill's permitted daily amount of refuse. Because the proposed project would only generate construction waste temporarily and no long-term waste would be generated, the implementation of the proposed project would result in less than significant impacts on daily permitted capacity of the Frank R. Bowerman Landfill.

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

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

## **References**

Orange County Waste and Recycling, 2017. Frank R. Bowerman Landfill. Available at: <http://www.oclandfills.com/landfill/active/bowerman>, accessed March 15, 2017.

## 4.19 Energy

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>ENERGY — Would the project:</b>				
a) Result in a substantial increase in overall or per capita energy consumption?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in wasteful or unnecessary consumption of energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Conflict with applicable energy efficiency policies or standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Environmental Evaluation

Would the project:

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

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

The proposed project will serve a key function of the treatment plant that requires a substantial amount of energy to function properly. The new facility will ensure that the OOS functions in a safe and efficient manner. This new facility will rehabilitate the existing OOBS and replace the existing PWPS facilities at Plant 2. Therefore, the energy requirements of the new facility would not result in a substantial increase in overall or per capita energy consumption. Impacts would be less than significant.

**b) Result in wasteful or unnecessary consumption of energy?**

**Less than Significant Impact.** Implementation of the proposed project is not anticipated to result in an increase in energy consumption at Plant 2. Implementation of the proposed project would be an upgrade to the current system and would use energy efficient pumps and machinery. Further, the proposed project includes electrical upgrades to the existing 12 kilovolt systems at the OOBS and Cen Gen. These electrical upgrades would provide OCSD with increased safety, upgrades to current standards, and better operational flexibility. It is not anticipated the proposed project would result in a wasteful or unnecessary consumption of energy nor require new sources of energy. Impacts would be less than significant.

c) **Require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity the construction of which could cause significant environmental effects?**

**Less than Significant Impact.** Implementation of the proposed project would not increase energy demands resulting in the need for new sources of energy production or conveyance infrastructure. Energy would be provided to the facility from the existing power grid serving the entire treatment facility as well as from the on-site Cen Gen. The proposed project includes electrical upgrades to the existing 12 kilovolt systems at the OOBS and Cen Gen. These electrical upgrades would provide OCSD with increased safety, upgrades to current standards, and better operational flexibility. It is not anticipated the proposed project would result in a wasteful or unnecessary consumption of energy nor require new sources of energy. Impacts would be less than significant.

d) **Conflict with applicable energy efficiency policies or standards?**

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

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## 4.20 Mandatory Findings of Significance

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>19. MANDATORY FINDINGS OF SIGNIFICANCE —</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 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 Impact.** 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 temporary earth moving and excavation activities on the existing Plant 2 property. It is not anticipated that any cultural resource would exist due to the area being previously disturbed during the construction of the plant. Although subsurface excavation could encounter previously unknown cultural resources, the project would be located on an existing treatment plant site that has been used for the same uses for many years. The upgrade to the facility 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. The upgrade to the facility will occur entirely on the Plant 2 property. The facility will be compatible with the surrounding built environment and would not contribute to a cumulative visual, biological, cultural, public services and utilities, or land use compatibility impact. Air emissions, noise generation, and traffic impacts would be minimal and would not contribute considerably to the existing condition. The project's contribution to cumulative impacts to the environment would not be cumulatively considerable.

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

**Less than Significant with Mitigation Incorporated.** Construction of the proposed project would not result in substantial adverse effects, either direct or indirect, on human beings. The project would provide an important public utility infrastructure improvement 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.

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# Appendix A

## **Air Quality Modeling Data**



OCSD Ocean Outfall System Rehabilitation  
Air Quality and Greenhouse Gas Assessment

Project Information

Land Use	CalEEMod Land Use Type	Units		Res. Pop.
<b>Existing Uses</b>				
Industrial	Light Industrial	ksf	- sf	
<b>Project Phase 1</b>				
Industrial	Light Industrial	7.2 ksf	7,200 sf	
Effluent pipeline		2.0 ksf	2,030 sf	2,030
Discharge pipeline		1.7 ksf	1,705 sf	
<b>Total</b>		<b>10.9 ksf</b>	<b>10,935 sf</b>	
<b>Site Area</b>		<b>2.00 acres</b>	<b>43,495 sf</b>	

Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs

CalEEMod Construction Phase	Start Date	End Date	No. Work Days	Demo			Soil Export <sup>a</sup> (CY)	Soil Haul		Soil Haul		Concrete Mat Volume <sup>a</sup> (CY)	Concrete		Concrete		Vendor One Way Trips/Max Day <sup>b</sup>	Worker One Way Trips/Max Day <sup>c</sup>
				Demo Truck Capacity (CY)	Demo Truck Total One-Way Trips	Demo Truck Daily One-Way Trips		Soil Haul Truck Capacity (CY)	Soil Haul Truck Total One-Way Trips	Soil Haul Truck Daily One-Way Trips	Concrete Truck Capacity (CY)		Concrete Truck Total One-Way Trips	Concrete Truck Daily One-Way Trips				
Demolition	11/12/2018	11/10/2021	45	-	14	10												20
Site Preparation	11/12/2018	1/4/2019	40															8
Grading/Excavation	3/25/2019	5/3/2019	30				7,500	6,000	14	1,072	36							15
Drainage/Utilities/Sub-Grade	2/11/2019	6/23/2020	200															18
Building Construction	6/17/2019	12/18/2020	395														2	20
Paving	1/18/2021	1/22/2021	5															20
Architectural Coating	2/2/2020	4/3/2020	45															1
Mechanical/Electrical Equipment & Systems	10/21/2019	3/14/2022	625															-

Notes:

- a. Vendor trips are associated with the Building Construction phase and are based on CalEEMod assumptions.
- b. Worker trips are based on CalEEMod assumptions.

OCSD Ocean Outfall System Rehabilitation  
Air Quality and Greenhouse Gas Assessment

Construction Equipment and California Emissions Estimator Model (CalEEMod) Inputs

Construction Equipment

Construction Phase	Heavy-Duty Equipment	No. of Heavy-Duty Equipment	Hours of Operation/Day	Hours of Operation/Week
<b>Demolition</b>	Air Compressors	2	8	40
	Concrete/Industrial Saws	1	4	20
	Forklifts	2	4	20
	Generator sets	1	4	20
	Off-highway trucks	2	8	40
<b>Site Preparation</b>	Compactor	1	6	30
	Graders	1	8	40
	Rubber Tired Loaders	1	8	40
<b>Grading/Excavation</b>	Bore/Drill Rig	1	8	40
	Cranes	1	8	40
	Excavator	1	8	40
	Pumps	1	8	40
	Rollers	1	4	20
	Rubber Tired Loaders	1	8	40
<b>Drainage/Utilities/Sub-Grade</b>	Cranes	1	4	20
	Excavator	2	8	40
	Rollers	1	4	20
	Rubber Tired Loaders	2	8	40
	Skid Steer Loaders	1	8	40
<b>Building Construction</b>	Air Compressors	2	8	40
	Cement and Mortar Mixers	2	4	20
	Cranes	1	4	20
	Forklifts	2	8	40
	Generator sets	2	8	40
	Rough Terrain Forklifts	1	4	20
<b>Architectural Coating</b>	<b>Included in Building Construction</b>			
<b>Paving</b>	Concrete/Industrial Saws	1	4	20
	Compactor	1	8	40
	Graders	1	4	20
	Rollers	1	8	40
	Rubber Tired Loaders	1	8	40
	Sweepers/Scrubbers	1	2	10
	Paving Equipment	1	8	40
	Pavers	1	8	40

OCSD

Resource Loaded Construction Schedule

last updated:  
9/7/2016

On-Site/Off-Road Equipment	2017												2018												2019												2020															
	Month	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Phase:																																																				
Demolition																																																				
Site Preparation																																																				
Grading/Excavation																																																				
Drainage/Utilities/Trenching																																																				
Building Construction																																																				
Paving																																																				
Architectural Coating																																																				
Mechanical/Electrical Equipment & Systems																																																				

Sources: Atlas Capital Group, Johnson Fain, May 2016; ESA PCR, 2016

**OCSO LOFLO  
Air Quality Assessment**

**Max Regional**

<b>Construction Activity</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>SO2</b>	<b>PM10 Total</b>	<b>PM2.5 Total</b>
Demolition/Site Preparation	4	35	22	0.1	1.8	1.5
Demolition/Grading/Drainage, Utilities, and Sub-grade	7	74	49	0.1	4.1	3.0
Demolition/Drainage, Utilities, and Sub-grade/Building Construction	6	59	49	0.1	3.3	2.9
Demolition/Drainage, Utilities, and Sub-grade/Building Construction/Architectural Coating	9	59	50	0.1	3.4	2.9
Demolition/Paving	4	38	31	0.1	2.2	1.8
<b>Maximum Regional Emissions</b>	<b>9</b>	<b>74</b>	<b>50</b>	<b>0.1</b>	<b>4.1</b>	<b>3.0</b>
<b>SCAQMD Threshold</b>	<b>75</b>	<b>100</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>150</b>
Over/(Under)	(66)	(26)	(500)	(150)	(146)	(147)
<b>Exceeds Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

**Max Localized**

<b>Construction Activity</b>	<b>NOx</b>	<b>CO</b>	<b>PM10</b>	<b>PM2.5</b>
Demolition/Site Preparation	35	21	1.5	1.4
Demolition/Grading/Drainage, Utilities, and Sub-grade	63	45	2.8	2.6
Demolition/Drainage, Utilities, and Sub-grade/Building Construction	58	48	2.8	2.7
Demolition/Drainage, Utilities, and Sub-grade/Building Construction/Architectural Coating	58	48	2.8	2.7
Demolition/Paving	37	30	1.8	1.7
<b>Maximum Localized Emissions</b>	<b>63</b>	<b>48</b>	<b>2.8</b>	<b>2.7</b>
<b>SCAQMD Threshold</b>	<b>131</b>	<b>962</b>	<b>7.0</b>	<b>5.0</b>
Over/(Under)	(68)	(914)	(4.2)	(2.3)
<b>Exceeds Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>



**OCSD Ocean Outfall System Rehab  
Air Quality and Greenhouse Gas Assessment**

**Localized Operational Emissions**

**Maximum Unmitigated Regional Operational Emissions (pounds per day) <sup>a</sup>**

<b>Source</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Area (Consumer Products, Landscaping)	<1	<1	<0.1	<0.1
Energy (Natural Gas)	<1	<1	<0.1	<0.1
<b>Total Project On-Site Emissions</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>&lt;0.1</b>	<b>&lt;0.1</b>
<b>SCAQMD Numeric Indicators</b>	<b>131</b>	<b>962</b>	<b>2</b>	<b>2</b>
Over/(Under)	(131)	(962)	(2.0)	(2.0)
<b>Exceeds Thresholds?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

*Localized significance threshold from SCAQMD Look-Up tables for a 2-acre site in North Coastal Orange County (SRA 19) with the nearest sensitive receptor at 25 meters from the Site.*



Grading - Grading import/export

Demolition - Estimated based on given demo cubic yardage (400 cy)

Trips and VMT - Client given inputs

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	NumDays	200.00	395.00
tblConstructionPhase	NumDays	20.00	783.00
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	2.00	626.00
tblConstructionPhase	PhaseEndDate	11/11/2018	4/3/2020
tblConstructionPhase	PhaseEndDate	11/11/2018	12/18/2020
tblConstructionPhase	PhaseEndDate	11/11/2018	11/10/2021
tblConstructionPhase	PhaseEndDate	11/11/2018	5/3/2019
tblConstructionPhase	PhaseEndDate	11/11/2018	1/22/2021
tblConstructionPhase	PhaseEndDate	11/11/2018	1/4/2019
tblConstructionPhase	PhaseStartDate	11/12/2018	2/2/2020
tblConstructionPhase	PhaseStartDate	11/12/2018	6/17/2019
tblConstructionPhase	PhaseStartDate	11/12/2018	3/25/2019
tblConstructionPhase	PhaseStartDate	11/12/2018	1/18/2021
tblGrading	AcresOfGrading	0.00	2.00
tblGrading	AcresOfGrading	20.00	0.00
tblGrading	MaterialExported	0.00	7,500.00
tblGrading	MaterialImported	0.00	6,000.00
tblLandUse	LotAcreage	0.25	2.00
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.20	0.20

tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.29	0.29
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tblOffRoadEquipment	LoadFactor	0.38	0.38
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tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
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tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators

tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	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	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00



Maximum	8.7252	77.7547	50.5933	0.1404	1.2670	3.2483	4.3164	0.3346	3.0990	3.2306	0.0000	14,079.28 44	14,079.284 4	3.0508	0.0000	14,155.55 34
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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	3.40	0.00	0.75	1.71	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	2/2/2020	4/3/2020	5	45	
2	Building Construction	Building Construction	6/17/2019	12/18/2020	5	395	
3	Demolition	Demolition	11/12/2018	11/10/2021	5	783	
4	Grading	Grading	3/25/2019	5/3/2019	5	30	
5	Paving	Paving	1/18/2021	1/22/2021	5	5	
6	Site Preparation	Site Preparation	11/12/2018	1/4/2019	5	40	
7	Drainage/Utilities/Sub-grade	Trenching	2/11/2019	6/23/2020	5	357	
8	Mechanical/Electrical Equipment & Systems	Site Preparation	10/21/2019	3/14/2022	5	626	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 16,403; Non-Residential Outdoor: 5,468; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	4.00	81	0.73
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20



Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	1	8.00	80	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Graders	0	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	0	8.00	367	0.48
Building Construction	Welders	0	8.00	46	0.45
Mechanical/Electrical Equipment & Systems	Graders	0	8.00	187	0.41
Mechanical/Electrical Equipment & Systems	Scrapers	0	8.00	367	0.48
Mechanical/Electrical Equipment & Systems	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	4.00	9	0.56
Building Construction	Rough Terrain Forklifts	1	4.00	100	0.40
Demolition	Air Compressors	2	8.00	78	0.48
Demolition	Forklifts	2	4.00	89	0.20
Demolition	Generator Sets	1	4.00	84	0.74
Demolition	Off-Highway Trucks	2	8.00	402	0.38
Grading	Bore/Drill Rigs	1	8.00	221	0.50
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Pumps	1	8.00	84	0.74
Grading	Rollers	1	4.00	80	0.38
Grading	Rubber Tired Loaders	1	8.00	203	0.36

Drainage/Utilities/Sub-grade	Cranes	1	4.00	231	0.29
Drainage/Utilities/Sub-grade	Excavators	2	8.00	158	0.38
Drainage/Utilities/Sub-grade	Rollers	1	4.00	80	0.38
Drainage/Utilities/Sub-grade	Rubber Tired Loaders	2	8.00	203	0.36
Drainage/Utilities/Sub-grade	Skid Steer Loaders	1	8.00	65	0.37
Paving	Concrete/Industrial Saws	1	4.00	81	0.73
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Graders	1	4.00	187	0.41
Paving	Rubber Tired Loaders	1	8.00	203	0.36
Paving	Sweepers/Scrubbers	1	2.00	64	0.46
Site Preparation	Plate Compactors	1	6.00	8	0.43
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36

### 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
Architectural Coating	0	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	5.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	8	20.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,072.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Mechanical/Electrical Equipment & Systems	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Sub-grade	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

### 3.2 Architectural Coating - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.2527					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>2.2527</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

#### 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	4.4900e-003	3.0300e-003	0.0408	1.1000e-004	0.0112	9.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		11.4384	11.4384	3.3000e-004		11.4466
<b>Total</b>	<b>4.4900e-003</b>	<b>3.0300e-003</b>	<b>0.0408</b>	<b>1.1000e-004</b>	<b>0.0112</b>	<b>9.0000e-005</b>	<b>0.0113</b>	<b>2.9600e-003</b>	<b>8.0000e-005</b>	<b>3.0400e-003</b>		<b>11.4384</b>	<b>11.4384</b>	<b>3.3000e-004</b>		<b>11.4466</b>

### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.2527					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>2.2527</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

### 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	4.4900e-003	3.0300e-003	0.0408	1.1000e-004	0.0112	9.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		11.4384	11.4384	3.3000e-004		11.4466
<b>Total</b>	<b>4.4900e-003</b>	<b>3.0300e-003</b>	<b>0.0408</b>	<b>1.1000e-004</b>	<b>0.0112</b>	<b>9.0000e-005</b>	<b>0.0113</b>	<b>2.9600e-003</b>	<b>8.0000e-005</b>	<b>3.0400e-003</b>		<b>11.4384</b>	<b>11.4384</b>	<b>3.3000e-004</b>		<b>11.4466</b>

## 3.3 Building Construction - 2019

### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3008	19.6080	17.3548	0.0295		1.1995	1.1995		1.1683	1.1683		2,806.6949	2,806.6949	0.3879		2,816.3922
<b>Total</b>	<b>2.3008</b>	<b>19.6080</b>	<b>17.3548</b>	<b>0.0295</b>		<b>1.1995</b>	<b>1.1995</b>		<b>1.1683</b>	<b>1.1683</b>		<b>2,806.6949</b>	<b>2,806.6949</b>	<b>0.3879</b>		<b>2,816.3922</b>

**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	7.7900e-003	0.2296	0.0566	5.1000e-004	0.0128	1.5200e-003	0.0143	3.6800e-003	1.4600e-003	5.1400e-003		54.9024	54.9024	3.6900e-003		54.9948
Worker	0.0243	0.0170	0.2240	5.9000e-004	0.0559	4.4000e-004	0.0563	0.0148	4.0000e-004	0.0152		59.0181	59.0181	1.8500e-003		59.0643
<b>Total</b>	<b>0.0321</b>	<b>0.2466</b>	<b>0.2806</b>	<b>1.1000e-003</b>	<b>0.0687</b>	<b>1.9600e-003</b>	<b>0.0707</b>	<b>0.0185</b>	<b>1.8600e-003</b>	<b>0.0204</b>		<b>113.9205</b>	<b>113.9205</b>	<b>5.5400e-003</b>		<b>114.0591</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3008	19.6080	17.3548	0.0295		1.1995	1.1995		1.1683	1.1683	0.0000	2,806.6949	2,806.6949	0.3879		2,816.3922
<b>Total</b>	<b>2.3008</b>	<b>19.6080</b>	<b>17.3548</b>	<b>0.0295</b>		<b>1.1995</b>	<b>1.1995</b>		<b>1.1683</b>	<b>1.1683</b>	<b>0.0000</b>	<b>2,806.6949</b>	<b>2,806.6949</b>	<b>0.3879</b>		<b>2,816.3922</b>

**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	7.7900e-003	0.2296	0.0566	5.1000e-004	0.0128	1.5200e-003	0.0143	3.6800e-003	1.4600e-003	5.1400e-003		54.9024	54.9024	3.6900e-003		54.9948
Worker	0.0243	0.0170	0.2240	5.9000e-004	0.0559	4.4000e-004	0.0563	0.0148	4.0000e-004	0.0152		59.0181	59.0181	1.8500e-003		59.0643
<b>Total</b>	<b>0.0321</b>	<b>0.2466</b>	<b>0.2806</b>	<b>1.1000e-003</b>	<b>0.0687</b>	<b>1.9600e-003</b>	<b>0.0707</b>	<b>0.0185</b>	<b>1.8600e-003</b>	<b>0.0204</b>		<b>113.9205</b>	<b>113.9205</b>	<b>5.5400e-003</b>		<b>114.0591</b>

### 3.3 Building Construction - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0845	17.9757	17.1757	0.0295		1.0434	1.0434		1.0162	1.0162		2,790.2445	2,790.2445	0.3739		2,799.5911
<b>Total</b>	<b>2.0845</b>	<b>17.9757</b>	<b>17.1757</b>	<b>0.0295</b>		<b>1.0434</b>	<b>1.0434</b>		<b>1.0162</b>	<b>1.0162</b>		<b>2,790.2445</b>	<b>2,790.2445</b>	<b>0.3739</b>		<b>2,799.5911</b>

#### 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	6.6400e-003	0.2106	0.0512	5.1000e-004	0.0128	1.0400e-003	0.0138	3.6800e-003	1.0000e-003	4.6800e-003		54.5583	54.5583	3.4900e-003		54.6456
Worker	0.0224	0.0152	0.2038	5.7000e-004	0.0559	4.3000e-004	0.0563	0.0148	3.9000e-004	0.0152		57.1918	57.1918	1.6500e-003		57.2330
<b>Total</b>	<b>0.0291</b>	<b>0.2258</b>	<b>0.2550</b>	<b>1.0800e-003</b>	<b>0.0687</b>	<b>1.4700e-003</b>	<b>0.0702</b>	<b>0.0185</b>	<b>1.3900e-003</b>	<b>0.0199</b>		<b>111.7501</b>	<b>111.7501</b>	<b>5.1400e-003</b>		<b>111.8786</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0845	17.9757	17.1757	0.0295		1.0434	1.0434		1.0162	1.0162	0.0000	2,790.2445	2,790.2445	0.3739		2,799.5911
<b>Total</b>	<b>2.0845</b>	<b>17.9757</b>	<b>17.1757</b>	<b>0.0295</b>		<b>1.0434</b>	<b>1.0434</b>		<b>1.0162</b>	<b>1.0162</b>	<b>0.0000</b>	<b>2,790.2445</b>	<b>2,790.2445</b>	<b>0.3739</b>		<b>2,799.5911</b>

### 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	6.6400e-003	0.2106	0.0512	5.1000e-004	0.0128	1.0400e-003	0.0138	3.6800e-003	1.0000e-003	4.6800e-003		54.5583	54.5583	3.4900e-003			54.6456
Worker	0.0224	0.0152	0.2038	5.7000e-004	0.0559	4.3000e-004	0.0563	0.0148	3.9000e-004	0.0152		57.1918	57.1918	1.6500e-003			57.2330
<b>Total</b>	<b>0.0291</b>	<b>0.2258</b>	<b>0.2550</b>	<b>1.0800e-003</b>	<b>0.0687</b>	<b>1.4700e-003</b>	<b>0.0702</b>	<b>0.0185</b>	<b>1.3900e-003</b>	<b>0.0199</b>		<b>111.7501</b>	<b>111.7501</b>	<b>5.1400e-003</b>			<b>111.8786</b>

### 3.4 Demolition - 2018

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					6.2900e-003	0.0000	6.2900e-003	9.5000e-004	0.0000	9.5000e-004			0.0000				0.0000
Off-Road	3.0421	27.6785	18.3428	0.0424		1.4030	1.4030		1.3441	1.3441		4,185.4639	4,185.4639	0.9968			4,210.3850
<b>Total</b>	<b>3.0421</b>	<b>27.6785</b>	<b>18.3428</b>	<b>0.0424</b>	<b>6.2900e-003</b>	<b>1.4030</b>	<b>1.4093</b>	<b>9.5000e-004</b>	<b>1.3441</b>	<b>1.3450</b>		<b>4,185.4639</b>	<b>4,185.4639</b>	<b>0.9968</b>			<b>4,210.3850</b>

#### 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	1.2000e-004	4.0200e-003	7.8000e-004	1.0000e-005	3.7300e-003	2.0000e-005	3.7400e-003	9.2000e-004	1.0000e-005	9.4000e-004		1.1000	1.1000	8.0000e-005			1.1020
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	0.1069	0.0770	1.0006	2.4500e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		243.7440	243.7440	8.3300e-003			243.9523
<b>Total</b>	<b>0.1070</b>	<b>0.0811</b>	<b>1.0014</b>	<b>2.4600e-003</b>	<b>0.2273</b>	<b>1.8100e-003</b>	<b>0.2291</b>	<b>0.0602</b>	<b>1.6600e-003</b>	<b>0.0619</b>		<b>244.8440</b>	<b>244.8440</b>	<b>8.4100e-003</b>			<b>245.0543</b>

### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4500e-003	0.0000	2.4500e-003	3.7000e-004	0.0000	3.7000e-004			0.0000			0.0000
Off-Road	3.0421	27.6785	18.3428	0.0424		1.4030	1.4030		1.3441	1.3441	0.0000	4,185.4639	4,185.4639	0.9968		4,210.3850
<b>Total</b>	<b>3.0421</b>	<b>27.6785</b>	<b>18.3428</b>	<b>0.0424</b>	<b>2.4500e-003</b>	<b>1.4030</b>	<b>1.4055</b>	<b>3.7000e-004</b>	<b>1.3441</b>	<b>1.3444</b>	<b>0.0000</b>	<b>4,185.4639</b>	<b>4,185.4639</b>	<b>0.9968</b>		<b>4,210.3850</b>

### 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	1.2000e-004	4.0200e-003	7.8000e-004	1.0000e-005	3.7300e-003	2.0000e-005	3.7400e-003	9.2000e-004	1.0000e-005	9.4000e-004		1.1000	1.1000	8.0000e-005		1.1020
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	0.1069	0.0770	1.0006	2.4500e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		243.7440	243.7440	8.3300e-003		243.9523
<b>Total</b>	<b>0.1070</b>	<b>0.0811</b>	<b>1.0014</b>	<b>2.4600e-003</b>	<b>0.2273</b>	<b>1.8100e-003</b>	<b>0.2291</b>	<b>0.0602</b>	<b>1.6600e-003</b>	<b>0.0619</b>		<b>244.8440</b>	<b>244.8440</b>	<b>8.4100e-003</b>		<b>245.0543</b>

### 3.4 Demolition - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2900e-003	0.0000	6.2900e-003	9.5000e-004	0.0000	9.5000e-004			0.0000			0.0000
Off-Road	2.7512	24.4641	17.8565	0.0424		1.2077	1.2077		1.1568	1.1568		4,138.9956	4,138.9956	0.9837		4,163.5891
<b>Total</b>	<b>2.7512</b>	<b>24.4641</b>	<b>17.8565</b>	<b>0.0424</b>	<b>6.2900e-003</b>	<b>1.2077</b>	<b>1.2140</b>	<b>9.5000e-004</b>	<b>1.1568</b>	<b>1.1577</b>		<b>4,138.9956</b>	<b>4,138.9956</b>	<b>0.9837</b>		<b>4,163.5891</b>



### 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	1.1000e-004	3.8000e-003	7.6000e-004	1.0000e-005	5.6000e-004	1.0000e-005	5.7000e-004	1.4000e-004	1.0000e-005	1.6000e-004		1.0867	1.0867	8.0000e-005		1.0887
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	0.0971	0.0680	0.8959	2.3700e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		236.0723	236.0723	7.4000e-003		236.2573
<b>Total</b>	<b>0.0972</b>	<b>0.0718</b>	<b>0.8966</b>	<b>2.3800e-003</b>	<b>0.2241</b>	<b>1.7600e-003</b>	<b>0.2259</b>	<b>0.0594</b>	<b>1.6200e-003</b>	<b>0.0611</b>		<b>237.1590</b>	<b>237.1590</b>	<b>7.4800e-003</b>		<b>237.3459</b>

### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4500e-003	0.0000	2.4500e-003	3.7000e-004	0.0000	3.7000e-004			0.0000			0.0000
Off-Road	2.7512	24.4641	17.8565	0.0424		1.2077	1.2077		1.1568	1.1568	0.0000	4,138.9956	4,138.9956	0.9837		4,163.5891
<b>Total</b>	<b>2.7512</b>	<b>24.4641</b>	<b>17.8565</b>	<b>0.0424</b>	<b>2.4500e-003</b>	<b>1.2077</b>	<b>1.2102</b>	<b>3.7000e-004</b>	<b>1.1568</b>	<b>1.1572</b>	<b>0.0000</b>	<b>4,138.9956</b>	<b>4,138.9956</b>	<b>0.9837</b>		<b>4,163.5891</b>

### 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	1.1000e-004	3.8000e-003	7.6000e-004	1.0000e-005	5.6000e-004	1.0000e-005	5.7000e-004	1.4000e-004	1.0000e-005	1.6000e-004		1.0867	1.0867	8.0000e-005		1.0887
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	0.0971	0.0680	0.8959	2.3700e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		236.0723	236.0723	7.4000e-003		236.2573
<b>Total</b>	<b>0.0972</b>	<b>0.0718</b>	<b>0.8966</b>	<b>2.3800e-003</b>	<b>0.2241</b>	<b>1.7600e-003</b>	<b>0.2259</b>	<b>0.0594</b>	<b>1.6200e-003</b>	<b>0.0611</b>		<b>237.1590</b>	<b>237.1590</b>	<b>7.4800e-003</b>		<b>237.3459</b>

### 3.4 Demolition - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2900e-003	0.0000	6.2900e-003	9.5000e-004	0.0000	9.5000e-004			0.0000			0.0000
Off-Road	2.5320	21.8915	17.4243	0.0424		1.0532	1.0532		1.0084	1.0084		4,077.1789	4,077.1789	0.9737		4,101.5224
<b>Total</b>	<b>2.5320</b>	<b>21.8915</b>	<b>17.4243</b>	<b>0.0424</b>	<b>6.2900e-003</b>	<b>1.0532</b>	<b>1.0595</b>	<b>9.5000e-004</b>	<b>1.0084</b>	<b>1.0093</b>		<b>4,077.1789</b>	<b>4,077.1789</b>	<b>0.9737</b>		<b>4,101.5224</b>

#### 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	1.0000e-004	3.5600e-003	7.4000e-004	1.0000e-005	5.6000e-004	1.0000e-005	5.7000e-004	1.4000e-004	1.0000e-005	1.5000e-004		1.0759	1.0759	8.0000e-005		1.0778
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	0.0897	0.0607	0.8152	2.3000e-003	0.2236	1.7100e-003	0.2253	0.0593	1.5700e-003	0.0609		228.7673	228.7673	6.5900e-003		228.9321
<b>Total</b>	<b>0.0898</b>	<b>0.0642</b>	<b>0.8159</b>	<b>2.3100e-003</b>	<b>0.2241</b>	<b>1.7200e-003</b>	<b>0.2258</b>	<b>0.0594</b>	<b>1.5800e-003</b>	<b>0.0610</b>		<b>229.8431</b>	<b>229.8431</b>	<b>6.6700e-003</b>		<b>230.0098</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4500e-003	0.0000	2.4500e-003	3.7000e-004	0.0000	3.7000e-004			0.0000			0.0000
Off-Road	2.5320	21.8915	17.4243	0.0424		1.0532	1.0532		1.0084	1.0084	0.0000	4,077.1789	4,077.1789	0.9737		4,101.5224
<b>Total</b>	<b>2.5320</b>	<b>21.8915</b>	<b>17.4243</b>	<b>0.0424</b>	<b>2.4500e-003</b>	<b>1.0532</b>	<b>1.0556</b>	<b>3.7000e-004</b>	<b>1.0084</b>	<b>1.0088</b>	<b>0.0000</b>	<b>4,077.1789</b>	<b>4,077.1789</b>	<b>0.9737</b>		<b>4,101.5224</b>

### 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	1.0000e-004	3.5600e-003	7.4000e-004	1.0000e-005	5.6000e-004	1.0000e-005	5.7000e-004	1.4000e-004	1.0000e-005	1.5000e-004		1.0759	1.0759	8.0000e-005		1.0778
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	0.0897	0.0607	0.8152	2.3000e-003	0.2236	1.7100e-003	0.2253	0.0593	1.5700e-003	0.0609		228.7673	228.7673	6.5900e-003		228.9321
<b>Total</b>	<b>0.0898</b>	<b>0.0642</b>	<b>0.8159</b>	<b>2.3100e-003</b>	<b>0.2241</b>	<b>1.7200e-003</b>	<b>0.2258</b>	<b>0.0594</b>	<b>1.5800e-003</b>	<b>0.0610</b>		<b>229.8431</b>	<b>229.8431</b>	<b>6.6700e-003</b>		<b>230.0098</b>

### 3.4 Demolition - 2021

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2900e-003	0.0000	6.2900e-003	9.5000e-004	0.0000	9.5000e-004			0.0000			0.0000
Off-Road	2.3027	18.9380	16.9446	0.0424		0.8935	0.8935		0.8557	0.8557		4,076.9799	4,076.9799	0.9639		4,101.0765
<b>Total</b>	<b>2.3027</b>	<b>18.9380</b>	<b>16.9446</b>	<b>0.0424</b>	<b>6.2900e-003</b>	<b>0.8935</b>	<b>0.8998</b>	<b>9.5000e-004</b>	<b>0.8557</b>	<b>0.8567</b>		<b>4,076.9799</b>	<b>4,076.9799</b>	<b>0.9639</b>		<b>4,101.0765</b>

#### 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	1.0000e-004	3.3100e-003	7.3000e-004	1.0000e-005	6.4000e-004	1.0000e-005	6.5000e-004	1.6000e-004	1.0000e-005	1.7000e-004		1.0642	1.0642	7.0000e-005		1.0661
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	0.0837	0.0546	0.7509	2.2200e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		221.3797	221.3797	5.9700e-003		221.5288
<b>Total</b>	<b>0.0838</b>	<b>0.0579</b>	<b>0.7517</b>	<b>2.2300e-003</b>	<b>0.2242</b>	<b>1.6600e-003</b>	<b>0.2259</b>	<b>0.0595</b>	<b>1.5300e-003</b>	<b>0.0610</b>		<b>222.4439</b>	<b>222.4439</b>	<b>6.0400e-003</b>		<b>222.5949</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4500e-003	0.0000	2.4500e-003	3.7000e-004	0.0000	3.7000e-004			0.0000			0.0000
Off-Road	2.3027	18.9380	16.9446	0.0424		0.8935	0.8935		0.8557	0.8557	0.0000	4,076.9799	4,076.9799	0.9639		4,101.0765
<b>Total</b>	<b>2.3027</b>	<b>18.9380</b>	<b>16.9446</b>	<b>0.0424</b>	<b>2.4500e-003</b>	<b>0.8935</b>	<b>0.8960</b>	<b>3.7000e-004</b>	<b>0.8557</b>	<b>0.8561</b>	<b>0.0000</b>	<b>4,076.9799</b>	<b>4,076.9799</b>	<b>0.9639</b>		<b>4,101.0765</b>

**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	1.0000e-004	3.3100e-003	7.3000e-004	1.0000e-005	6.4000e-004	1.0000e-005	6.5000e-004	1.6000e-004	1.0000e-005	1.7000e-004		1.0642	1.0642	7.0000e-005		1.0661
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	0.0837	0.0546	0.7509	2.2200e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		221.3797	221.3797	5.9700e-003		221.5288
<b>Total</b>	<b>0.0838</b>	<b>0.0579</b>	<b>0.7517</b>	<b>2.2300e-003</b>	<b>0.2242</b>	<b>1.6600e-003</b>	<b>0.2259</b>	<b>0.0595</b>	<b>1.5300e-003</b>	<b>0.0610</b>		<b>222.4439</b>	<b>222.4439</b>	<b>6.0400e-003</b>		<b>222.5949</b>

**3.5 Grading - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1216	0.0000	0.1216	0.0153	0.0000	0.0153			0.0000			0.0000
Off-Road	2.0265	22.1638	14.0448	0.0345		0.9614	0.9614		0.9036	0.9036		3,386.1815	3,386.1815	0.9159		3,409.0788
<b>Total</b>	<b>2.0265</b>	<b>22.1638</b>	<b>14.0448</b>	<b>0.0345</b>	<b>0.1216</b>	<b>0.9614</b>	<b>1.0830</b>	<b>0.0153</b>	<b>0.9036</b>	<b>0.9189</b>		<b>3,386.1815</b>	<b>3,386.1815</b>	<b>0.9159</b>		<b>3,409.0788</b>

**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	0.3077	10.6394	2.1284	0.0281	0.6241	0.0398	0.6639	0.1710	0.0381	0.2091		3,040.5483	3,040.5483	0.2181		3,046.0000
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	0.0728	0.0510	0.6719	1.7800e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		177.0542	177.0542	5.5500e-003		177.1930
<b>Total</b>	<b>0.3805</b>	<b>10.6904</b>	<b>2.8003</b>	<b>0.0298</b>	<b>0.7918</b>	<b>0.0411</b>	<b>0.8329</b>	<b>0.2155</b>	<b>0.0393</b>	<b>0.2547</b>		<b>3,217.6025</b>	<b>3,217.6025</b>	<b>0.2236</b>		<b>3,223.1929</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0474	0.0000	0.0474	5.9800e-003	0.0000	5.9800e-003			0.0000			0.0000
Off-Road	2.0265	22.1638	14.0448	0.0345		0.9614	0.9614		0.9036	0.9036	0.0000	3,386.1815	3,386.1815	0.9159		3,409.0788
<b>Total</b>	<b>2.0265</b>	<b>22.1638</b>	<b>14.0448</b>	<b>0.0345</b>	<b>0.0474</b>	<b>0.9614</b>	<b>1.0089</b>	<b>5.9800e-003</b>	<b>0.9036</b>	<b>0.9095</b>	<b>0.0000</b>	<b>3,386.1815</b>	<b>3,386.1815</b>	<b>0.9159</b>		<b>3,409.0788</b>

**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	0.3077	10.6394	2.1284	0.0281	0.6241	0.0398	0.6639	0.1710	0.0381	0.2091		3,040.5483	3,040.5483	0.2181		3,046.0000
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	0.0728	0.0510	0.6719	1.7800e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		177.0542	177.0542	5.5500e-003		177.1930
<b>Total</b>	<b>0.3805</b>	<b>10.6904</b>	<b>2.8003</b>	<b>0.0298</b>	<b>0.7918</b>	<b>0.0411</b>	<b>0.8329</b>	<b>0.2155</b>	<b>0.0393</b>	<b>0.2547</b>		<b>3,217.6025</b>	<b>3,217.6025</b>	<b>0.2236</b>		<b>3,223.1929</b>

### 3.6 Paving - 2021

#### 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	1.4874	15.5751	12.3447	0.0252		0.6957	0.6957		0.6477	0.6477		2,423.4497	2,423.4497	0.6976		2,440.8894
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.4874</b>	<b>15.5751</b>	<b>12.3447</b>	<b>0.0252</b>		<b>0.6957</b>	<b>0.6957</b>		<b>0.6477</b>	<b>0.6477</b>		<b>2,423.4497</b>	<b>2,423.4497</b>	<b>0.6976</b>		<b>2,440.8894</b>

#### 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	0.0837	0.0546	0.7509	2.2200e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		221.3797	221.3797	5.9700e-003		221.5288
<b>Total</b>	<b>0.0837</b>	<b>0.0546</b>	<b>0.7509</b>	<b>2.2200e-003</b>	<b>0.2236</b>	<b>1.6500e-003</b>	<b>0.2252</b>	<b>0.0593</b>	<b>1.5200e-003</b>	<b>0.0608</b>		<b>221.3797</b>	<b>221.3797</b>	<b>5.9700e-003</b>		<b>221.5288</b>

#### 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	1.4874	15.5751	12.3447	0.0252		0.6957	0.6957		0.6477	0.6477	0.0000	2,423.4497	2,423.4497	0.6976		2,440.8894
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.4874</b>	<b>15.5751</b>	<b>12.3447</b>	<b>0.0252</b>		<b>0.6957</b>	<b>0.6957</b>		<b>0.6477</b>	<b>0.6477</b>	<b>0.0000</b>	<b>2,423.4497</b>	<b>2,423.4497</b>	<b>0.6976</b>		<b>2,440.8894</b>

**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	0.0837	0.0546	0.7509	2.2200e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		221.3797	221.3797	5.9700e-003			221.5288
<b>Total</b>	<b>0.0837</b>	<b>0.0546</b>	<b>0.7509</b>	<b>2.2200e-003</b>	<b>0.2236</b>	<b>1.6500e-003</b>	<b>0.2252</b>	<b>0.0593</b>	<b>1.5200e-003</b>	<b>0.0608</b>		<b>221.3797</b>	<b>221.3797</b>	<b>5.9700e-003</b>			<b>221.5288</b>

**3.7 Site Preparation - 2018**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9817	12.6675	3.8167	0.0133		0.4205	0.4205		0.3875	0.3875		1,327.8017	1,327.8017	0.4080		1,338.0016
<b>Total</b>	<b>0.9817</b>	<b>12.6675</b>	<b>3.8167</b>	<b>0.0133</b>	<b>0.0000</b>	<b>0.4205</b>	<b>0.4205</b>	<b>0.0000</b>	<b>0.3875</b>	<b>0.3875</b>		<b>1,327.8017</b>	<b>1,327.8017</b>	<b>0.4080</b>		<b>1,338.0016</b>

**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	0.0427	0.0308	0.4002	9.8000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.4976	97.4976	3.3300e-003		97.5809
<b>Total</b>	<b>0.0427</b>	<b>0.0308</b>	<b>0.4002</b>	<b>9.8000e-004</b>	<b>0.0894</b>	<b>7.2000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.6000e-004</b>	<b>0.0244</b>		<b>97.4976</b>	<b>97.4976</b>	<b>3.3300e-003</b>		<b>97.5809</b>

### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9817	12.6675	3.8167	0.0133		0.4205	0.4205		0.3875	0.3875	0.0000	1,327.8017	1,327.8017	0.4080		1,338.0016
<b>Total</b>	<b>0.9817</b>	<b>12.6675</b>	<b>3.8167</b>	<b>0.0133</b>	<b>0.0000</b>	<b>0.4205</b>	<b>0.4205</b>	<b>0.0000</b>	<b>0.3875</b>	<b>0.3875</b>	<b>0.0000</b>	<b>1,327.8017</b>	<b>1,327.8017</b>	<b>0.4080</b>		<b>1,338.0016</b>

### 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	0.0427	0.0308	0.4002	9.8000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.4976	97.4976	3.3300e-003		97.5809
<b>Total</b>	<b>0.0427</b>	<b>0.0308</b>	<b>0.4002</b>	<b>9.8000e-004</b>	<b>0.0894</b>	<b>7.2000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.6000e-004</b>	<b>0.0244</b>		<b>97.4976</b>	<b>97.4976</b>	<b>3.3300e-003</b>		<b>97.5809</b>

## 3.7 Site Preparation - 2019

### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9176	11.6186	3.6831	0.0133		0.3811	0.3811		0.3512	0.3512		1,305.3863	1,305.3863	0.4075		1,315.5741
<b>Total</b>	<b>0.9176</b>	<b>11.6186</b>	<b>3.6831</b>	<b>0.0133</b>	<b>0.0000</b>	<b>0.3811</b>	<b>0.3811</b>	<b>0.0000</b>	<b>0.3512</b>	<b>0.3512</b>		<b>1,305.3863</b>	<b>1,305.3863</b>	<b>0.4075</b>		<b>1,315.5741</b>



**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	0.0388	0.0272	0.3584	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4289	94.4289	2.9600e-003		94.5029
<b>Total</b>	<b>0.0388</b>	<b>0.0272</b>	<b>0.3584</b>	<b>9.5000e-004</b>	<b>0.0894</b>	<b>7.0000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.4000e-004</b>	<b>0.0244</b>		<b>94.4289</b>	<b>94.4289</b>	<b>2.9600e-003</b>		<b>94.5029</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9176	11.6186	3.6831	0.0133		0.3811	0.3811		0.3512	0.3512	0.0000	1,305.3863	1,305.3863	0.4075		1,315.5741
<b>Total</b>	<b>0.9176</b>	<b>11.6186</b>	<b>3.6831</b>	<b>0.0133</b>	<b>0.0000</b>	<b>0.3811</b>	<b>0.3811</b>	<b>0.0000</b>	<b>0.3512</b>	<b>0.3512</b>	<b>0.0000</b>	<b>1,305.3863</b>	<b>1,305.3863</b>	<b>0.4075</b>		<b>1,315.5741</b>

**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	0.0388	0.0272	0.3584	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4289	94.4289	2.9600e-003		94.5029
<b>Total</b>	<b>0.0388</b>	<b>0.0272</b>	<b>0.3584</b>	<b>9.5000e-004</b>	<b>0.0894</b>	<b>7.0000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.4000e-004</b>	<b>0.0244</b>		<b>94.4289</b>	<b>94.4289</b>	<b>2.9600e-003</b>		<b>94.5029</b>

### 3.8 Drainage/Utilities/Sub-grade - 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	1.7720	20.3036	13.3985	0.0292		0.8358	0.8358		0.7690	0.7690		2,886.8806	2,886.8806	0.9134		2,909.7151
<b>Total</b>	<b>1.7720</b>	<b>20.3036</b>	<b>13.3985</b>	<b>0.0292</b>		<b>0.8358</b>	<b>0.8358</b>		<b>0.7690</b>	<b>0.7690</b>		<b>2,886.8806</b>	<b>2,886.8806</b>	<b>0.9134</b>		<b>2,909.7151</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0874	0.0612	0.8063	2.1300e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4500e-003	0.0548		212.4651	212.4651	6.6600e-003		212.6315
<b>Total</b>	<b>0.0874</b>	<b>0.0612</b>	<b>0.8063</b>	<b>2.1300e-003</b>	<b>0.2012</b>	<b>1.5700e-003</b>	<b>0.2028</b>	<b>0.0534</b>	<b>1.4500e-003</b>	<b>0.0548</b>		<b>212.4651</b>	<b>212.4651</b>	<b>6.6600e-003</b>		<b>212.6315</b>

#### 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	1.7720	20.3036	13.3985	0.0292		0.8358	0.8358		0.7690	0.7690	0.0000	2,886.8806	2,886.8806	0.9134		2,909.7151
<b>Total</b>	<b>1.7720</b>	<b>20.3036</b>	<b>13.3985</b>	<b>0.0292</b>		<b>0.8358</b>	<b>0.8358</b>		<b>0.7690</b>	<b>0.7690</b>	<b>0.0000</b>	<b>2,886.8806</b>	<b>2,886.8806</b>	<b>0.9134</b>		<b>2,909.7151</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0874	0.0612	0.8063	2.1300e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4500e-003	0.0548		212.4651	212.4651	6.6600e-003		212.6315
<b>Total</b>	<b>0.0874</b>	<b>0.0612</b>	<b>0.8063</b>	<b>2.1300e-003</b>	<b>0.2012</b>	<b>1.5700e-003</b>	<b>0.2028</b>	<b>0.0534</b>	<b>1.4500e-003</b>	<b>0.0548</b>		<b>212.4651</b>	<b>212.4651</b>	<b>6.6600e-003</b>		<b>212.6315</b>

**3.8 Drainage/Utilities/Sub-grade - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6519	18.4762	13.2254	0.0292		0.7508	0.7508		0.6908	0.6908		2,823.9596	2,823.9596	0.9133		2,846.7927
<b>Total</b>	<b>1.6519</b>	<b>18.4762</b>	<b>13.2254</b>	<b>0.0292</b>		<b>0.7508</b>	<b>0.7508</b>		<b>0.6908</b>	<b>0.6908</b>		<b>2,823.9596</b>	<b>2,823.9596</b>	<b>0.9133</b>		<b>2,846.7927</b>

**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	0.0807	0.0546	0.7336	2.0700e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		205.8905	205.8905	5.9300e-003		206.0389
<b>Total</b>	<b>0.0807</b>	<b>0.0546</b>	<b>0.7336</b>	<b>2.0700e-003</b>	<b>0.2012</b>	<b>1.5300e-003</b>	<b>0.2027</b>	<b>0.0534</b>	<b>1.4100e-003</b>	<b>0.0548</b>		<b>205.8905</b>	<b>205.8905</b>	<b>5.9300e-003</b>		<b>206.0389</b>

**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	1.6519	18.4762	13.2254	0.0292		0.7508	0.7508		0.6908	0.6908	0.0000	2,823.9596	2,823.9596	0.9133		2,846.7927
<b>Total</b>	<b>1.6519</b>	<b>18.4762</b>	<b>13.2254</b>	<b>0.0292</b>		<b>0.7508</b>	<b>0.7508</b>		<b>0.6908</b>	<b>0.6908</b>	<b>0.0000</b>	<b>2,823.9596</b>	<b>2,823.9596</b>	<b>0.9133</b>		<b>2,846.7927</b>

**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	0.0807	0.0546	0.7336	2.0700e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		205.8905	205.8905	5.9300e-003		206.0389
<b>Total</b>	<b>0.0807</b>	<b>0.0546</b>	<b>0.7336</b>	<b>2.0700e-003</b>	<b>0.2012</b>	<b>1.5300e-003</b>	<b>0.2027</b>	<b>0.0534</b>	<b>1.4100e-003</b>	<b>0.0548</b>		<b>205.8905</b>	<b>205.8905</b>	<b>5.9300e-003</b>		<b>206.0389</b>



Grading - Grading import/export

Demolition - Estimated based on given demo cubic yardage (400 cy)

Trips and VMT - Client given inputs

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	NumDays	200.00	395.00
tblConstructionPhase	NumDays	20.00	783.00
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	2.00	626.00
tblConstructionPhase	PhaseEndDate	11/11/2018	4/3/2020
tblConstructionPhase	PhaseEndDate	11/11/2018	12/18/2020
tblConstructionPhase	PhaseEndDate	11/11/2018	11/10/2021
tblConstructionPhase	PhaseEndDate	11/11/2018	5/3/2019
tblConstructionPhase	PhaseEndDate	11/11/2018	1/22/2021
tblConstructionPhase	PhaseEndDate	11/11/2018	1/4/2019
tblConstructionPhase	PhaseStartDate	11/12/2018	2/2/2020
tblConstructionPhase	PhaseStartDate	11/12/2018	6/17/2019
tblConstructionPhase	PhaseStartDate	11/12/2018	3/25/2019
tblConstructionPhase	PhaseStartDate	11/12/2018	1/18/2021
tblGrading	AcresOfGrading	0.00	2.00
tblGrading	AcresOfGrading	20.00	0.00
tblGrading	MaterialExported	0.00	7,500.00
tblGrading	MaterialImported	0.00	6,000.00
tblLandUse	LotAcreage	0.25	2.00
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.20	0.20

tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators

tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	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	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00





Maximum	8.7452	77.9173	50.4233	0.1396	1.2670	3.2484	4.3171	0.3346	3.0990	3.2307	0.0000	13,989.35 16	13,989.351 6	3.0583	0.0000	14,065.81 01
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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	3.40	0.00	0.75	1.71	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	2/2/2020	4/3/2020	5	45	
2	Building Construction	Building Construction	6/17/2019	12/18/2020	5	395	
3	Demolition	Demolition	11/12/2018	11/10/2021	5	783	
4	Grading	Grading	3/25/2019	5/3/2019	5	30	
5	Paving	Paving	1/18/2021	1/22/2021	5	5	
6	Site Preparation	Site Preparation	11/12/2018	1/4/2019	5	40	
7	Drainage/Utilities/Sub-grade	Trenching	2/11/2019	6/23/2020	5	357	
8	Mechanical/Electrical Equipment & Systems	Site Preparation	10/21/2019	3/14/2022	5	626	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 16,403; Non-Residential Outdoor: 5,468; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	4.00	81	0.73
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20

Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	1	8.00	80	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Graders	0	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	0	8.00	367	0.48
Building Construction	Welders	0	8.00	46	0.45
Mechanical/Electrical Equipment & Systems	Graders	0	8.00	187	0.41
Mechanical/Electrical Equipment & Systems	Scrapers	0	8.00	367	0.48
Mechanical/Electrical Equipment & Systems	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	4.00	9	0.56
Building Construction	Rough Terrain Forklifts	1	4.00	100	0.40
Demolition	Air Compressors	2	8.00	78	0.48
Demolition	Forklifts	2	4.00	89	0.20
Demolition	Generator Sets	1	4.00	84	0.74
Demolition	Off-Highway Trucks	2	8.00	402	0.38
Grading	Bore/Drill Rigs	1	8.00	221	0.50
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Pumps	1	8.00	84	0.74
Grading	Rollers	1	4.00	80	0.38
Grading	Rubber Tired Loaders	1	8.00	203	0.36

Drainage/Utilities/Sub-grade	Cranes	1	4.00	231	0.29
Drainage/Utilities/Sub-grade	Excavators	2	8.00	158	0.38
Drainage/Utilities/Sub-grade	Rollers	1	4.00	80	0.38
Drainage/Utilities/Sub-grade	Rubber Tired Loaders	2	8.00	203	0.36
Drainage/Utilities/Sub-grade	Skid Steer Loaders	1	8.00	65	0.37
Paving	Concrete/Industrial Saws	1	4.00	81	0.73
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Graders	1	4.00	187	0.41
Paving	Rubber Tired Loaders	1	8.00	203	0.36
Paving	Sweepers/Scrubbers	1	2.00	64	0.46
Site Preparation	Plate Compactors	1	6.00	8	0.43
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36

### 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
Architectural Coating	0	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	5.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	8	20.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,072.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Mechanical/Electrical Equipment & Systems	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Sub-grade	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

### 3.2 Architectural Coating - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.2527					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>2.2527</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

#### 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	4.9300e-003	3.3300e-003	0.0370	1.1000e-004	0.0112	9.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.7285	10.7285	3.1000e-004		10.7362
<b>Total</b>	<b>4.9300e-003</b>	<b>3.3300e-003</b>	<b>0.0370</b>	<b>1.1000e-004</b>	<b>0.0112</b>	<b>9.0000e-005</b>	<b>0.0113</b>	<b>2.9600e-003</b>	<b>8.0000e-005</b>	<b>3.0400e-003</b>		<b>10.7285</b>	<b>10.7285</b>	<b>3.1000e-004</b>		<b>10.7362</b>

### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.2527					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>2.2527</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

### 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	4.9300e-003	3.3300e-003	0.0370	1.1000e-004	0.0112	9.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.7285	10.7285	3.1000e-004		10.7362
<b>Total</b>	<b>4.9300e-003</b>	<b>3.3300e-003</b>	<b>0.0370</b>	<b>1.1000e-004</b>	<b>0.0112</b>	<b>9.0000e-005</b>	<b>0.0113</b>	<b>2.9600e-003</b>	<b>8.0000e-005</b>	<b>3.0400e-003</b>		<b>10.7285</b>	<b>10.7285</b>	<b>3.1000e-004</b>		<b>10.7362</b>

## 3.3 Building Construction - 2019

### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3008	19.6080	17.3548	0.0295		1.1995	1.1995		1.1683	1.1683		2,806.6949	2,806.6949	0.3879		2,816.3922
<b>Total</b>	<b>2.3008</b>	<b>19.6080</b>	<b>17.3548</b>	<b>0.0295</b>		<b>1.1995</b>	<b>1.1995</b>		<b>1.1683</b>	<b>1.1683</b>		<b>2,806.6949</b>	<b>2,806.6949</b>	<b>0.3879</b>		<b>2,816.3922</b>

### 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	8.1300e-003	0.2299	0.0627	5.0000e-004	0.0128	1.5500e-003	0.0143	3.6800e-003	1.4800e-003	5.1600e-003		53.4278	53.4278	3.9500e-003		53.5266
Worker	0.0267	0.0187	0.2035	5.6000e-004	0.0559	4.4000e-004	0.0563	0.0148	4.0000e-004	0.0152		55.3584	55.3584	1.7400e-003		55.4018
<b>Total</b>	<b>0.0348</b>	<b>0.2485</b>	<b>0.2662</b>	<b>1.0600e-003</b>	<b>0.0687</b>	<b>1.9900e-003</b>	<b>0.0707</b>	<b>0.0185</b>	<b>1.8800e-003</b>	<b>0.0204</b>		<b>108.7862</b>	<b>108.7862</b>	<b>5.6900e-003</b>		<b>108.9283</b>

### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3008	19.6080	17.3548	0.0295		1.1995	1.1995		1.1683	1.1683	0.0000	2,806.6949	2,806.6949	0.3879		2,816.3922
<b>Total</b>	<b>2.3008</b>	<b>19.6080</b>	<b>17.3548</b>	<b>0.0295</b>		<b>1.1995</b>	<b>1.1995</b>		<b>1.1683</b>	<b>1.1683</b>	<b>0.0000</b>	<b>2,806.6949</b>	<b>2,806.6949</b>	<b>0.3879</b>		<b>2,816.3922</b>

### 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	8.1300e-003	0.2299	0.0627	5.0000e-004	0.0128	1.5500e-003	0.0143	3.6800e-003	1.4800e-003	5.1600e-003		53.4278	53.4278	3.9500e-003		53.5266
Worker	0.0267	0.0187	0.2035	5.6000e-004	0.0559	4.4000e-004	0.0563	0.0148	4.0000e-004	0.0152		55.3584	55.3584	1.7400e-003		55.4018
<b>Total</b>	<b>0.0348</b>	<b>0.2485</b>	<b>0.2662</b>	<b>1.0600e-003</b>	<b>0.0687</b>	<b>1.9900e-003</b>	<b>0.0707</b>	<b>0.0185</b>	<b>1.8800e-003</b>	<b>0.0204</b>		<b>108.7862</b>	<b>108.7862</b>	<b>5.6900e-003</b>		<b>108.9283</b>



### 3.3 Building Construction - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0845	17.9757	17.1757	0.0295		1.0434	1.0434		1.0162	1.0162		2,790.2445	2,790.2445	0.3739		2,799.5911
<b>Total</b>	<b>2.0845</b>	<b>17.9757</b>	<b>17.1757</b>	<b>0.0295</b>		<b>1.0434</b>	<b>1.0434</b>		<b>1.0162</b>	<b>1.0162</b>		<b>2,790.2445</b>	<b>2,790.2445</b>	<b>0.3739</b>		<b>2,799.5911</b>

#### 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	6.9400e-003	0.2106	0.0568	5.0000e-004	0.0128	1.0600e-003	0.0139	3.6800e-003	1.0100e-003	4.7000e-003		53.0755	53.0755	3.7300e-003		53.1688
Worker	0.0247	0.0167	0.1848	5.4000e-004	0.0559	4.3000e-004	0.0563	0.0148	3.9000e-004	0.0152		53.6426	53.6426	1.5400e-003		53.6812
<b>Total</b>	<b>0.0316</b>	<b>0.2272</b>	<b>0.2416</b>	<b>1.0400e-003</b>	<b>0.0687</b>	<b>1.4900e-003</b>	<b>0.0702</b>	<b>0.0185</b>	<b>1.4000e-003</b>	<b>0.0199</b>		<b>106.7180</b>	<b>106.7180</b>	<b>5.2700e-003</b>		<b>106.8499</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0845	17.9757	17.1757	0.0295		1.0434	1.0434		1.0162	1.0162	0.0000	2,790.2445	2,790.2445	0.3739		2,799.5911
<b>Total</b>	<b>2.0845</b>	<b>17.9757</b>	<b>17.1757</b>	<b>0.0295</b>		<b>1.0434</b>	<b>1.0434</b>		<b>1.0162</b>	<b>1.0162</b>	<b>0.0000</b>	<b>2,790.2445</b>	<b>2,790.2445</b>	<b>0.3739</b>		<b>2,799.5911</b>

**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	6.9400e-003	0.2106	0.0568	5.0000e-004	0.0128	1.0600e-003	0.0139	3.6800e-003	1.0100e-003	4.7000e-003		53.0755	53.0755	3.7300e-003			53.1688
Worker	0.0247	0.0167	0.1848	5.4000e-004	0.0559	4.3000e-004	0.0563	0.0148	3.9000e-004	0.0152		53.6426	53.6426	1.5400e-003			53.6812
<b>Total</b>	<b>0.0316</b>	<b>0.2272</b>	<b>0.2416</b>	<b>1.0400e-003</b>	<b>0.0687</b>	<b>1.4900e-003</b>	<b>0.0702</b>	<b>0.0185</b>	<b>1.4000e-003</b>	<b>0.0199</b>		<b>106.7180</b>	<b>106.7180</b>	<b>5.2700e-003</b>			<b>106.8499</b>

**3.4 Demolition - 2018**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					6.2900e-003	0.0000	6.2900e-003	9.5000e-004	0.0000	9.5000e-004			0.0000				0.0000
Off-Road	3.0421	27.6785	18.3428	0.0424		1.4030	1.4030		1.3441	1.3441		4,185.4639	4,185.4639	0.9968			4,210.3850
<b>Total</b>	<b>3.0421</b>	<b>27.6785</b>	<b>18.3428</b>	<b>0.0424</b>	<b>6.2900e-003</b>	<b>1.4030</b>	<b>1.4093</b>	<b>9.5000e-004</b>	<b>1.3441</b>	<b>1.3450</b>		<b>4,185.4639</b>	<b>4,185.4639</b>	<b>0.9968</b>			<b>4,210.3850</b>

**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	1.2000e-004	4.0700e-003	8.4000e-004	1.0000e-005	3.7300e-003	2.0000e-005	3.7400e-003	9.2000e-004	2.0000e-005	9.4000e-004		1.0817	1.0817	8.0000e-005			1.0838
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	0.1172	0.0847	0.9118	2.3000e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		228.6505	228.6505	7.8300e-003			228.8463
<b>Total</b>	<b>0.1173</b>	<b>0.0887</b>	<b>0.9127</b>	<b>2.3100e-003</b>	<b>0.2273</b>	<b>1.8100e-003</b>	<b>0.2291</b>	<b>0.0602</b>	<b>1.6700e-003</b>	<b>0.0619</b>		<b>229.7322</b>	<b>229.7322</b>	<b>7.9100e-003</b>			<b>229.9301</b>

### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4500e-003	0.0000	2.4500e-003	3.7000e-004	0.0000	3.7000e-004			0.0000			0.0000
Off-Road	3.0421	27.6785	18.3428	0.0424		1.4030	1.4030		1.3441	1.3441	0.0000	4,185.4639	4,185.4639	0.9968		4,210.3850
<b>Total</b>	<b>3.0421</b>	<b>27.6785</b>	<b>18.3428</b>	<b>0.0424</b>	<b>2.4500e-003</b>	<b>1.4030</b>	<b>1.4055</b>	<b>3.7000e-004</b>	<b>1.3441</b>	<b>1.3444</b>	<b>0.0000</b>	<b>4,185.4639</b>	<b>4,185.4639</b>	<b>0.9968</b>		<b>4,210.3850</b>

### 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	1.2000e-004	4.0700e-003	8.4000e-004	1.0000e-005	3.7300e-003	2.0000e-005	3.7400e-003	9.2000e-004	2.0000e-005	9.4000e-004		1.0817	1.0817	8.0000e-005		1.0838
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	0.1172	0.0847	0.9118	2.3000e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		228.6505	228.6505	7.8300e-003		228.8463
<b>Total</b>	<b>0.1173</b>	<b>0.0887</b>	<b>0.9127</b>	<b>2.3100e-003</b>	<b>0.2273</b>	<b>1.8100e-003</b>	<b>0.2291</b>	<b>0.0602</b>	<b>1.6700e-003</b>	<b>0.0619</b>		<b>229.7322</b>	<b>229.7322</b>	<b>7.9100e-003</b>		<b>229.9301</b>

### 3.4 Demolition - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2900e-003	0.0000	6.2900e-003	9.5000e-004	0.0000	9.5000e-004			0.0000			0.0000
Off-Road	2.7512	24.4641	17.8565	0.0424		1.2077	1.2077		1.1568	1.1568		4,138.9956	4,138.9956	0.9837		4,163.5891
<b>Total</b>	<b>2.7512</b>	<b>24.4641</b>	<b>17.8565</b>	<b>0.0424</b>	<b>6.2900e-003</b>	<b>1.2077</b>	<b>1.2140</b>	<b>9.5000e-004</b>	<b>1.1568</b>	<b>1.1577</b>		<b>4,138.9956</b>	<b>4,138.9956</b>	<b>0.9837</b>		<b>4,163.5891</b>

### 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	1.1000e-004	3.8500e-003	8.2000e-004	1.0000e-005	5.6000e-004	1.0000e-005	5.8000e-004	1.4000e-004	1.0000e-005	1.6000e-004		1.0685	1.0685	8.0000e-005		1.0705
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	0.1066	0.0747	0.8139	2.2200e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		221.4335	221.4335	6.9400e-003		221.6070
<b>Total</b>	<b>0.1068</b>	<b>0.0785</b>	<b>0.8148</b>	<b>2.2300e-003</b>	<b>0.2241</b>	<b>1.7600e-003</b>	<b>0.2259</b>	<b>0.0594</b>	<b>1.6200e-003</b>	<b>0.0611</b>		<b>222.5019</b>	<b>222.5019</b>	<b>7.0200e-003</b>		<b>222.6775</b>

### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4500e-003	0.0000	2.4500e-003	3.7000e-004	0.0000	3.7000e-004			0.0000			0.0000
Off-Road	2.7512	24.4641	17.8565	0.0424		1.2077	1.2077		1.1568	1.1568	0.0000	4,138.9956	4,138.9956	0.9837		4,163.5891
<b>Total</b>	<b>2.7512</b>	<b>24.4641</b>	<b>17.8565</b>	<b>0.0424</b>	<b>2.4500e-003</b>	<b>1.2077</b>	<b>1.2102</b>	<b>3.7000e-004</b>	<b>1.1568</b>	<b>1.1572</b>	<b>0.0000</b>	<b>4,138.9956</b>	<b>4,138.9956</b>	<b>0.9837</b>		<b>4,163.5891</b>

### 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	1.1000e-004	3.8500e-003	8.2000e-004	1.0000e-005	5.6000e-004	1.0000e-005	5.8000e-004	1.4000e-004	1.0000e-005	1.6000e-004		1.0685	1.0685	8.0000e-005		1.0705
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	0.1066	0.0747	0.8139	2.2200e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		221.4335	221.4335	6.9400e-003		221.6070
<b>Total</b>	<b>0.1068</b>	<b>0.0785</b>	<b>0.8148</b>	<b>2.2300e-003</b>	<b>0.2241</b>	<b>1.7600e-003</b>	<b>0.2259</b>	<b>0.0594</b>	<b>1.6200e-003</b>	<b>0.0611</b>		<b>222.5019</b>	<b>222.5019</b>	<b>7.0200e-003</b>		<b>222.6775</b>

### 3.4 Demolition - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2900e-003	0.0000	6.2900e-003	9.5000e-004	0.0000	9.5000e-004			0.0000			0.0000
Off-Road	2.5320	21.8915	17.4243	0.0424		1.0532	1.0532		1.0084	1.0084		4,077.1789	4,077.1789	0.9737		4,101.5224
<b>Total</b>	<b>2.5320</b>	<b>21.8915</b>	<b>17.4243</b>	<b>0.0424</b>	<b>6.2900e-003</b>	<b>1.0532</b>	<b>1.0595</b>	<b>9.5000e-004</b>	<b>1.0084</b>	<b>1.0093</b>		<b>4,077.1789</b>	<b>4,077.1789</b>	<b>0.9737</b>		<b>4,101.5224</b>

#### 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	1.0000e-004	3.6000e-003	7.9000e-004	1.0000e-005	5.6000e-004	1.0000e-005	5.7000e-004	1.4000e-004	1.0000e-005	1.5000e-004		1.0575	1.0575	8.0000e-005		1.0595
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	0.0987	0.0666	0.7392	2.1500e-003	0.2236	1.7100e-003	0.2253	0.0593	1.5700e-003	0.0609		214.5703	214.5703	6.1800e-003		214.7247
<b>Total</b>	<b>0.0988</b>	<b>0.0702</b>	<b>0.7400</b>	<b>2.1600e-003</b>	<b>0.2241</b>	<b>1.7200e-003</b>	<b>0.2258</b>	<b>0.0594</b>	<b>1.5800e-003</b>	<b>0.0610</b>		<b>215.6278</b>	<b>215.6278</b>	<b>6.2600e-003</b>		<b>215.7841</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4500e-003	0.0000	2.4500e-003	3.7000e-004	0.0000	3.7000e-004			0.0000			0.0000
Off-Road	2.5320	21.8915	17.4243	0.0424		1.0532	1.0532		1.0084	1.0084	0.0000	4,077.1789	4,077.1789	0.9737		4,101.5224
<b>Total</b>	<b>2.5320</b>	<b>21.8915</b>	<b>17.4243</b>	<b>0.0424</b>	<b>2.4500e-003</b>	<b>1.0532</b>	<b>1.0556</b>	<b>3.7000e-004</b>	<b>1.0084</b>	<b>1.0088</b>	<b>0.0000</b>	<b>4,077.1789</b>	<b>4,077.1789</b>	<b>0.9737</b>		<b>4,101.5224</b>

### 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	1.0000e-004	3.6000e-003	7.9000e-004	1.0000e-005	5.6000e-004	1.0000e-005	5.7000e-004	1.4000e-004	1.0000e-005	1.5000e-004		1.0575	1.0575	8.0000e-005		1.0595
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	0.0987	0.0666	0.7392	2.1500e-003	0.2236	1.7100e-003	0.2253	0.0593	1.5700e-003	0.0609		214.5703	214.5703	6.1800e-003		214.7247
<b>Total</b>	<b>0.0988</b>	<b>0.0702</b>	<b>0.7400</b>	<b>2.1600e-003</b>	<b>0.2241</b>	<b>1.7200e-003</b>	<b>0.2258</b>	<b>0.0594</b>	<b>1.5800e-003</b>	<b>0.0610</b>		<b>215.6278</b>	<b>215.6278</b>	<b>6.2600e-003</b>		<b>215.7841</b>

### 3.4 Demolition - 2021

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2900e-003	0.0000	6.2900e-003	9.5000e-004	0.0000	9.5000e-004			0.0000			0.0000
Off-Road	2.3027	18.9380	16.9446	0.0424		0.8935	0.8935		0.8557	0.8557		4,076.9799	4,076.9799	0.9639		4,101.0765
<b>Total</b>	<b>2.3027</b>	<b>18.9380</b>	<b>16.9446</b>	<b>0.0424</b>	<b>6.2900e-003</b>	<b>0.8935</b>	<b>0.8998</b>	<b>9.5000e-004</b>	<b>0.8557</b>	<b>0.8567</b>		<b>4,076.9799</b>	<b>4,076.9799</b>	<b>0.9639</b>		<b>4,101.0765</b>

#### 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	1.0000e-004	3.3500e-003	7.8000e-004	1.0000e-005	6.4000e-004	1.0000e-005	6.5000e-004	1.6000e-004	1.0000e-005	1.7000e-004		1.0459	1.0459	8.0000e-005		1.0479
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	0.0922	0.0600	0.6797	2.0800e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		207.6302	207.6302	5.5800e-003		207.7698
<b>Total</b>	<b>0.0923</b>	<b>0.0633</b>	<b>0.6805</b>	<b>2.0900e-003</b>	<b>0.2242</b>	<b>1.6600e-003</b>	<b>0.2259</b>	<b>0.0595</b>	<b>1.5300e-003</b>	<b>0.0610</b>		<b>208.6762</b>	<b>208.6762</b>	<b>5.6600e-003</b>		<b>208.8177</b>

### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4500e-003	0.0000	2.4500e-003	3.7000e-004	0.0000	3.7000e-004			0.0000			0.0000
Off-Road	2.3027	18.9380	16.9446	0.0424		0.8935	0.8935		0.8557	0.8557	0.0000	4,076.9799	4,076.9799	0.9639		4,101.0765
<b>Total</b>	<b>2.3027</b>	<b>18.9380</b>	<b>16.9446</b>	<b>0.0424</b>	<b>2.4500e-003</b>	<b>0.8935</b>	<b>0.8960</b>	<b>3.7000e-004</b>	<b>0.8557</b>	<b>0.8561</b>	<b>0.0000</b>	<b>4,076.9799</b>	<b>4,076.9799</b>	<b>0.9639</b>		<b>4,101.0765</b>

### 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	1.0000e-004	3.3500e-003	7.8000e-004	1.0000e-005	6.4000e-004	1.0000e-005	6.5000e-004	1.6000e-004	1.0000e-005	1.7000e-004		1.0459	1.0459	8.0000e-005		1.0479
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	0.0922	0.0600	0.6797	2.0800e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		207.6302	207.6302	5.5800e-003		207.7698
<b>Total</b>	<b>0.0923</b>	<b>0.0633</b>	<b>0.6805</b>	<b>2.0900e-003</b>	<b>0.2242</b>	<b>1.6600e-003</b>	<b>0.2259</b>	<b>0.0595</b>	<b>1.5300e-003</b>	<b>0.0610</b>		<b>208.6762</b>	<b>208.6762</b>	<b>5.6600e-003</b>		<b>208.8177</b>

### 3.5 Grading - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1216	0.0000	0.1216	0.0153	0.0000	0.0153			0.0000			0.0000
Off-Road	2.0265	22.1638	14.0448	0.0345		0.9614	0.9614		0.9036	0.9036		3,386.1815	3,386.1815	0.9159		3,409.0788
<b>Total</b>	<b>2.0265</b>	<b>22.1638</b>	<b>14.0448</b>	<b>0.0345</b>	<b>0.1216</b>	<b>0.9614</b>	<b>1.0830</b>	<b>0.0153</b>	<b>0.9036</b>	<b>0.9189</b>		<b>3,386.1815</b>	<b>3,386.1815</b>	<b>0.9159</b>		<b>3,409.0788</b>

**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	0.3159	10.7841	2.2844	0.0276	0.6241	0.0405	0.6647	0.1710	0.0388	0.2098		2,989.4267	2,989.4267	0.2269		2,995.0980
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	0.0800	0.0560	0.6105	1.6700e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		166.0751	166.0751	5.2100e-003		166.2053
<b>Total</b>	<b>0.3959</b>	<b>10.8401</b>	<b>2.8949</b>	<b>0.0293</b>	<b>0.7918</b>	<b>0.0418</b>	<b>0.8336</b>	<b>0.2155</b>	<b>0.0400</b>	<b>0.2555</b>		<b>3,155.5018</b>	<b>3,155.5018</b>	<b>0.2321</b>		<b>3,161.3033</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0474	0.0000	0.0474	5.9800e-003	0.0000	5.9800e-003			0.0000			0.0000
Off-Road	2.0265	22.1638	14.0448	0.0345		0.9614	0.9614		0.9036	0.9036	0.0000	3,386.1815	3,386.1815	0.9159		3,409.0788
<b>Total</b>	<b>2.0265</b>	<b>22.1638</b>	<b>14.0448</b>	<b>0.0345</b>	<b>0.0474</b>	<b>0.9614</b>	<b>1.0089</b>	<b>5.9800e-003</b>	<b>0.9036</b>	<b>0.9095</b>	<b>0.0000</b>	<b>3,386.1815</b>	<b>3,386.1815</b>	<b>0.9159</b>		<b>3,409.0788</b>

**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	0.3159	10.7841	2.2844	0.0276	0.6241	0.0405	0.6647	0.1710	0.0388	0.2098		2,989.4267	2,989.4267	0.2269		2,995.0980
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	0.0800	0.0560	0.6105	1.6700e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		166.0751	166.0751	5.2100e-003		166.2053
<b>Total</b>	<b>0.3959</b>	<b>10.8401</b>	<b>2.8949</b>	<b>0.0293</b>	<b>0.7918</b>	<b>0.0418</b>	<b>0.8336</b>	<b>0.2155</b>	<b>0.0400</b>	<b>0.2555</b>		<b>3,155.5018</b>	<b>3,155.5018</b>	<b>0.2321</b>		<b>3,161.3033</b>



### 3.6 Paving - 2021

#### 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	1.4874	15.5751	12.3447	0.0252		0.6957	0.6957		0.6477	0.6477		2,423.4497	2,423.4497	0.6976		2,440.8894
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.4874</b>	<b>15.5751</b>	<b>12.3447</b>	<b>0.0252</b>		<b>0.6957</b>	<b>0.6957</b>		<b>0.6477</b>	<b>0.6477</b>		<b>2,423.4497</b>	<b>2,423.4497</b>	<b>0.6976</b>		<b>2,440.8894</b>

#### 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	0.0922	0.0600	0.6797	2.0800e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		207.6302	207.6302	5.5800e-003		207.7698
<b>Total</b>	<b>0.0922</b>	<b>0.0600</b>	<b>0.6797</b>	<b>2.0800e-003</b>	<b>0.2236</b>	<b>1.6500e-003</b>	<b>0.2252</b>	<b>0.0593</b>	<b>1.5200e-003</b>	<b>0.0608</b>		<b>207.6302</b>	<b>207.6302</b>	<b>5.5800e-003</b>		<b>207.7698</b>

#### 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	1.4874	15.5751	12.3447	0.0252		0.6957	0.6957		0.6477	0.6477	0.0000	2,423.4497	2,423.4497	0.6976		2,440.8894
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.4874</b>	<b>15.5751</b>	<b>12.3447</b>	<b>0.0252</b>		<b>0.6957</b>	<b>0.6957</b>		<b>0.6477</b>	<b>0.6477</b>	<b>0.0000</b>	<b>2,423.4497</b>	<b>2,423.4497</b>	<b>0.6976</b>		<b>2,440.8894</b>

### 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	0.0922	0.0600	0.6797	2.0800e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		207.6302	207.6302	5.5800e-003		207.7698
<b>Total</b>	<b>0.0922</b>	<b>0.0600</b>	<b>0.6797</b>	<b>2.0800e-003</b>	<b>0.2236</b>	<b>1.6500e-003</b>	<b>0.2252</b>	<b>0.0593</b>	<b>1.5200e-003</b>	<b>0.0608</b>		<b>207.6302</b>	<b>207.6302</b>	<b>5.5800e-003</b>		<b>207.7698</b>

### 3.7 Site Preparation - 2018

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9817	12.6675	3.8167	0.0133		0.4205	0.4205		0.3875	0.3875		1,327.8017	1,327.8017	0.4080		1,338.0016
<b>Total</b>	<b>0.9817</b>	<b>12.6675</b>	<b>3.8167</b>	<b>0.0133</b>	<b>0.0000</b>	<b>0.4205</b>	<b>0.4205</b>	<b>0.0000</b>	<b>0.3875</b>	<b>0.3875</b>		<b>1,327.8017</b>	<b>1,327.8017</b>	<b>0.4080</b>		<b>1,338.0016</b>

#### 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	0.0469	0.0339	0.3647	9.2000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.4602	91.4602	3.1300e-003		91.5385
<b>Total</b>	<b>0.0469</b>	<b>0.0339</b>	<b>0.3647</b>	<b>9.2000e-004</b>	<b>0.0894</b>	<b>7.2000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.6000e-004</b>	<b>0.0244</b>		<b>91.4602</b>	<b>91.4602</b>	<b>3.1300e-003</b>		<b>91.5385</b>

### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9817	12.6675	3.8167	0.0133		0.4205	0.4205		0.3875	0.3875	0.0000	1,327.8017	1,327.8017	0.4080		1,338.0016
<b>Total</b>	<b>0.9817</b>	<b>12.6675</b>	<b>3.8167</b>	<b>0.0133</b>	<b>0.0000</b>	<b>0.4205</b>	<b>0.4205</b>	<b>0.0000</b>	<b>0.3875</b>	<b>0.3875</b>	<b>0.0000</b>	<b>1,327.8017</b>	<b>1,327.8017</b>	<b>0.4080</b>		<b>1,338.0016</b>

### 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	0.0469	0.0339	0.3647	9.2000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.4602	91.4602	3.1300e-003		91.5385
<b>Total</b>	<b>0.0469</b>	<b>0.0339</b>	<b>0.3647</b>	<b>9.2000e-004</b>	<b>0.0894</b>	<b>7.2000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.6000e-004</b>	<b>0.0244</b>		<b>91.4602</b>	<b>91.4602</b>	<b>3.1300e-003</b>		<b>91.5385</b>

## 3.7 Site Preparation - 2019

### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9176	11.6186	3.6831	0.0133		0.3811	0.3811		0.3512	0.3512		1,305.3863	1,305.3863	0.4075		1,315.5741
<b>Total</b>	<b>0.9176</b>	<b>11.6186</b>	<b>3.6831</b>	<b>0.0133</b>	<b>0.0000</b>	<b>0.3811</b>	<b>0.3811</b>	<b>0.0000</b>	<b>0.3512</b>	<b>0.3512</b>		<b>1,305.3863</b>	<b>1,305.3863</b>	<b>0.4075</b>		<b>1,315.5741</b>

**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	0.0427	0.0299	0.3256	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.5734	88.5734	2.7800e-003		88.6428
<b>Total</b>	<b>0.0427</b>	<b>0.0299</b>	<b>0.3256</b>	<b>8.9000e-004</b>	<b>0.0894</b>	<b>7.0000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.4000e-004</b>	<b>0.0244</b>		<b>88.5734</b>	<b>88.5734</b>	<b>2.7800e-003</b>		<b>88.6428</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9176	11.6186	3.6831	0.0133		0.3811	0.3811		0.3512	0.3512	0.0000	1,305.3863	1,305.3863	0.4075		1,315.5741
<b>Total</b>	<b>0.9176</b>	<b>11.6186</b>	<b>3.6831</b>	<b>0.0133</b>	<b>0.0000</b>	<b>0.3811</b>	<b>0.3811</b>	<b>0.0000</b>	<b>0.3512</b>	<b>0.3512</b>	<b>0.0000</b>	<b>1,305.3863</b>	<b>1,305.3863</b>	<b>0.4075</b>		<b>1,315.5741</b>

**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	0.0427	0.0299	0.3256	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.5734	88.5734	2.7800e-003		88.6428
<b>Total</b>	<b>0.0427</b>	<b>0.0299</b>	<b>0.3256</b>	<b>8.9000e-004</b>	<b>0.0894</b>	<b>7.0000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.4000e-004</b>	<b>0.0244</b>		<b>88.5734</b>	<b>88.5734</b>	<b>2.7800e-003</b>		<b>88.6428</b>

### 3.8 Drainage/Utilities/Sub-grade - 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	1.7720	20.3036	13.3985	0.0292		0.8358	0.8358		0.7690	0.7690		2,886.8806	2,886.8806	0.9134		2,909.7151
<b>Total</b>	<b>1.7720</b>	<b>20.3036</b>	<b>13.3985</b>	<b>0.0292</b>		<b>0.8358</b>	<b>0.8358</b>		<b>0.7690</b>	<b>0.7690</b>		<b>2,886.8806</b>	<b>2,886.8806</b>	<b>0.9134</b>		<b>2,909.7151</b>

#### 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	0.0960	0.0672	0.7326	2.0000e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4500e-003	0.0548		199.2901	199.2901	6.2500e-003		199.4463
<b>Total</b>	<b>0.0960</b>	<b>0.0672</b>	<b>0.7326</b>	<b>2.0000e-003</b>	<b>0.2012</b>	<b>1.5700e-003</b>	<b>0.2028</b>	<b>0.0534</b>	<b>1.4500e-003</b>	<b>0.0548</b>		<b>199.2901</b>	<b>199.2901</b>	<b>6.2500e-003</b>		<b>199.4463</b>

#### 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	1.7720	20.3036	13.3985	0.0292		0.8358	0.8358		0.7690	0.7690	0.0000	2,886.8806	2,886.8806	0.9134		2,909.7151
<b>Total</b>	<b>1.7720</b>	<b>20.3036</b>	<b>13.3985</b>	<b>0.0292</b>		<b>0.8358</b>	<b>0.8358</b>		<b>0.7690</b>	<b>0.7690</b>	<b>0.0000</b>	<b>2,886.8806</b>	<b>2,886.8806</b>	<b>0.9134</b>		<b>2,909.7151</b>

**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	0.0960	0.0672	0.7326	2.0000e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4500e-003	0.0548		199.2901	199.2901	6.2500e-003		199.4463
<b>Total</b>	<b>0.0960</b>	<b>0.0672</b>	<b>0.7326</b>	<b>2.0000e-003</b>	<b>0.2012</b>	<b>1.5700e-003</b>	<b>0.2028</b>	<b>0.0534</b>	<b>1.4500e-003</b>	<b>0.0548</b>		<b>199.2901</b>	<b>199.2901</b>	<b>6.2500e-003</b>		<b>199.4463</b>

**3.8 Drainage/Utilities/Sub-grade - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6519	18.4762	13.2254	0.0292		0.7508	0.7508		0.6908	0.6908		2,823.9596	2,823.9596	0.9133		2,846.7927
<b>Total</b>	<b>1.6519</b>	<b>18.4762</b>	<b>13.2254</b>	<b>0.0292</b>		<b>0.7508</b>	<b>0.7508</b>		<b>0.6908</b>	<b>0.6908</b>		<b>2,823.9596</b>	<b>2,823.9596</b>	<b>0.9133</b>		<b>2,846.7927</b>

**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	0.0888	0.0600	0.6653	1.9400e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		193.1132	193.1132	5.5600e-003		193.2522
<b>Total</b>	<b>0.0888</b>	<b>0.0600</b>	<b>0.6653</b>	<b>1.9400e-003</b>	<b>0.2012</b>	<b>1.5300e-003</b>	<b>0.2027</b>	<b>0.0534</b>	<b>1.4100e-003</b>	<b>0.0548</b>		<b>193.1132</b>	<b>193.1132</b>	<b>5.5600e-003</b>		<b>193.2522</b>

**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	1.6519	18.4762	13.2254	0.0292		0.7508	0.7508		0.6908	0.6908	0.0000	2,823.9596	2,823.9596	0.9133		2,846.7927
<b>Total</b>	<b>1.6519</b>	<b>18.4762</b>	<b>13.2254</b>	<b>0.0292</b>		<b>0.7508</b>	<b>0.7508</b>		<b>0.6908</b>	<b>0.6908</b>	<b>0.0000</b>	<b>2,823.9596</b>	<b>2,823.9596</b>	<b>0.9133</b>		<b>2,846.7927</b>

**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	0.0888	0.0600	0.6653	1.9400e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		193.1132	193.1132	5.5600e-003		193.2522
<b>Total</b>	<b>0.0888</b>	<b>0.0600</b>	<b>0.6653</b>	<b>1.9400e-003</b>	<b>0.2012</b>	<b>1.5300e-003</b>	<b>0.2027</b>	<b>0.0534</b>	<b>1.4100e-003</b>	<b>0.0548</b>		<b>193.1132</b>	<b>193.1132</b>	<b>5.5600e-003</b>		<b>193.2522</b>

OCSD Plant 2 Ocean Outfall System Rehabilitation - Operations - South Coast Air Basin, Summer

**OCSD Plant 2 Ocean Outfall System Rehabilitation - Operations**  
**South Coast Air Basin, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	10.94	1000sqft	0.25	10,935.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2019
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	702.44	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use -

Energy Use - Building would not be temperature controlled.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	NT24NG	6.86	0.00
tblEnergyUse	T24NG	14.11	0.00
tblProjectCharacteristics	OperationalYear	2018	2019





## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0404	0.2059	0.6092	1.9900e-003	0.1544	2.2100e-003	0.1566	0.0413	2.0800e-003	0.0434		201.4917	201.4917	0.0102		201.7465
Unmitigated	0.0404	0.2059	0.6092	1.9900e-003	0.1544	2.2100e-003	0.1566	0.0413	2.0800e-003	0.0434		201.4917	201.4917	0.0102		201.7465

### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	16.40	16.40	16.40	72,635	72,635
Total	16.40	16.40	16.40	72,635	72,635

### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.548893	0.044275	0.199565	0.124385	0.017503	0.005874	0.020174	0.028962	0.001990	0.002015	0.004673	0.000702	0.000989

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

### 5.2 Energy by Land Use - NaturalGas

#### Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

#### Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2444	1.0000e-005	1.1300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.3900e-003	2.3900e-003	1.0000e-005		2.5600e-003
Unmitigated	0.2444	1.0000e-005	1.1300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.3900e-003	2.3900e-003	1.0000e-005		2.5600e-003

### 6.2 Area by SubCategory

#### Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0278					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2165					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1000e-004	1.0000e-005	1.1300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.3900e-003	2.3900e-003	1.0000e-005		2.5600e-003
<b>Total</b>	<b>0.2444</b>	<b>1.0000e-005</b>	<b>1.1300e-003</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.3900e-003</b>	<b>2.3900e-003</b>	<b>1.0000e-005</b>		<b>2.5600e-003</b>

#### Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0278					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2165					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1000e-004	1.0000e-005	1.1300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.3900e-003	2.3900e-003	1.0000e-005		2.5600e-003
<b>Total</b>	<b>0.2444</b>	<b>1.0000e-005</b>	<b>1.1300e-003</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.3900e-003</b>	<b>2.3900e-003</b>	<b>1.0000e-005</b>		<b>2.5600e-003</b>

OCSD Plant 2 Ocean Outfall System Rehabilitation - Operations - South Coast Air Basin, Winter

**OCSD Plant 2 Ocean Outfall System Rehabilitation - Operations**  
**South Coast Air Basin, Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	10.94	1000sqft	0.25	10,935.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2019
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	702.44	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use -

Energy Use - Building would not be temperature controlled.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	NT24NG	6.86	0.00
tblEnergyUse	T24NG	14.11	0.00
tblProjectCharacteristics	OperationalYear	2018	2019



## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0390	0.2125	0.5686	1.8800e-003	0.1544	2.2200e-003	0.1566	0.0413	2.0900e-003	0.0434		191.2062	191.2062	0.0101		191.4582
Unmitigated	0.0390	0.2125	0.5686	1.8800e-003	0.1544	2.2200e-003	0.1566	0.0413	2.0900e-003	0.0434		191.2062	191.2062	0.0101		191.4582

### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	16.40	16.40	16.40	72,635	72,635
Total	16.40	16.40	16.40	72,635	72,635

### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.548893	0.044275	0.199565	0.124385	0.017503	0.005874	0.020174	0.028962	0.001990	0.002015	0.004673	0.000702	0.000989

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

### 5.2 Energy by Land Use - NaturalGas

#### Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

#### Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>



## 6.0 Area Detail

### 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2444	1.0000e-005	1.1300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.3900e-003	2.3900e-003	1.0000e-005		2.5600e-003
Unmitigated	0.2444	1.0000e-005	1.1300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.3900e-003	2.3900e-003	1.0000e-005		2.5600e-003

### 6.2 Area by SubCategory

#### Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0278					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2165					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1000e-004	1.0000e-005	1.1300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.3900e-003	2.3900e-003	1.0000e-005		2.5600e-003
<b>Total</b>	<b>0.2444</b>	<b>1.0000e-005</b>	<b>1.1300e-003</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.3900e-003</b>	<b>2.3900e-003</b>	<b>1.0000e-005</b>		<b>2.5600e-003</b>

#### Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0278					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2165					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1000e-004	1.0000e-005	1.1300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.3900e-003	2.3900e-003	1.0000e-005		2.5600e-003
<b>Total</b>	<b>0.2444</b>	<b>1.0000e-005</b>	<b>1.1300e-003</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.3900e-003</b>	<b>2.3900e-003</b>	<b>1.0000e-005</b>		<b>2.5600e-003</b>



# Appendix B

## **Biological Data Search Results**





**Selected Elements by Scientific Name**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Query Criteria:** Quad IS (Anaheim (3311778) OR Laguna Beach (3311757) OR Los Alamitos (3311871) OR Newport Beach (3311768) OR Orange (3311777) OR Seal Beach (3311861) OR Tustin (3311767))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Abronia villosa var. aurita</i> chaparral sand-verbena	PDNYC010P1	None	None	G5T2T3	S2	1B.1
<i>Accipiter cooperii</i> Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
<i>Aimophila ruficeps canescens</i> southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S3	WL
<i>Ammodramus savannarum</i> grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
<i>Aphanisma blitoides</i> aphanisma	PDCHE02010	None	None	G3G4	S2	1B.2
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Aspidoscelis hyperythra</i> orange-throated whiptail	ARACJ02060	None	None	G5	S2S3	WL
<i>Astragalus pycnostachyus var. lanosissimus</i> Ventura Marsh milk-vetch	PDFAB0F7B1	Endangered	Endangered	G2T1	S1	1B.1
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Atriplex coulteri</i> Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
<i>Atriplex pacifica</i> south coast saltscale	PDCHE041C0	None	None	G4	S2	1B.2
<i>Atriplex parishii</i> Parish's brittle scale	PDCHE041D0	None	None	G1G2	S1	1B.1
<i>Atriplex serenana var. davidsonii</i> Davidson's salt scale	PDCHE041T1	None	None	G5T1	S1	1B.2
<i>Bombus crotchii</i> Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
<i>Branchinecta sandiegonensis</i> San Diego fairy shrimp	ICBRA03060	Endangered	None	G2	S2	
<i>Buteo regalis</i> ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
<i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<i>California Walnut Woodland</i> California Walnut Woodland	CTT71210CA	None	None	G2	S2.1	



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Calochortus weedii</i> var. <i>intermedius</i></b> intermediate mariposa-lily	PMLIL0D1J1	None	None	G3G4T2	S2	1B.2
<b><i>Campylorhynchus brunneicapillus sandiegensis</i></b> coastal cactus wren	ABPBG02095	None	None	G5T3Q	S3	SSC
<b><i>Catostomus santaanae</i></b> Santa Ana sucker	AFCJC02190	Threatened	None	G1	S1	
<b><i>Centromadia parryi</i> ssp. <i>australis</i></b> southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
<b><i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i></b> Orcutt's pincushion	PDAST20095	None	None	G5T1T2	S1	1B.1
<b><i>Charadrius alexandrinus nivosus</i></b> western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
<b><i>Chelonia mydas</i></b> green sea turtle	ARAAA02010	Threatened	None	G3	S1	
<b><i>Chloropyron maritimum</i> ssp. <i>maritimum</i></b> salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T1	S1	1B.2
<b><i>Choeronycteris mexicana</i></b> Mexican long-tongued bat	AMACB02010	None	None	G4	S1	SSC
<b><i>Cicindela gabbii</i></b> western tidal-flat tiger beetle	IICOL02080	None	None	G2G4	S1	
<b><i>Cicindela hirticollis gravida</i></b> sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
<b><i>Cicindela latesignata latesignata</i></b> western beach tiger beetle	IICOL02113	None	None	G2G4T1T2	S1	
<b><i>Cicindela senilis frosti</i></b> senile tiger beetle	IICOL02121	None	None	G2G3T1T3	S1	
<b><i>Coccyzus americanus occidentalis</i></b> western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<b><i>Coelus globosus</i></b> globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
<b><i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i></b> summer holly	PDERI0B011	None	None	G3T2	S2	1B.2
<b><i>Crotalus ruber</i></b> red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
<b><i>Danaus plexippus</i> pop. 1</b> monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
<b><i>Dudleya multicaulis</i></b> many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
<b><i>Dudleya stolonifera</i></b> Laguna Beach dudleya	PDCRA040P0	Threatened	Threatened	G1	S1	1B.1
<b><i>Elanus leucurus</i></b> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Emys marmorata</i></b> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<b><i>Eremophila alpestris actia</i></b> California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
<b><i>Eriastrum densifolium ssp. sanctorum</i></b> Santa Ana River woollystar	PDPLM03035	Endangered	Endangered	G4T1	S1	1B.1
<b><i>Eryngium aristulatum var. parishii</i></b> San Diego button-celery	PDAP10Z042	Endangered	Endangered	G5T1	S1	1B.1
<b><i>Eucyclogobius newberryi</i></b> tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC
<b><i>Eumops perotis californicus</i></b> western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
<b><i>Euphorbia misera</i></b> cliff spurge	PDEUP0Q1B0	None	None	G5	S2	2B.2
<b><i>Falco peregrinus anatum</i></b> American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
<b><i>Helianthus nuttallii ssp. parishii</i></b> Los Angeles sunflower	PDAST4N102	None	None	G5TH	SH	1A
<b><i>Horkelia cuneata var. puberula</i></b> mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
<b><i>Icteria virens</i></b> yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
<b><i>Isocoma menziesii var. decumbens</i></b> decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
<b><i>Lasionycteris noctivagans</i></b> silver-haired bat	AMACC02010	None	None	G5	S3S4	
<b><i>Lasiurus cinereus</i></b> hoary bat	AMACC05030	None	None	G5	S4	
<b><i>Lasiurus xanthinus</i></b> western yellow bat	AMACC05070	None	None	G5	S3	SSC
<b><i>Lasthenia glabrata ssp. coulteri</i></b> Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
<b><i>Laterallus jamaicensis coturniculus</i></b> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<b><i>Lepidium virginicum var. robinsonii</i></b> Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
<b><i>Microtus californicus stephensi</i></b> south coast marsh vole	AMAFF11035	None	None	G5T1T2	S1S2	SSC
<b><i>Myotis yumanensis</i></b> Yuma myotis	AMACC01020	None	None	G5	S4	
<b><i>Nama stenocarpa</i></b> mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Nasturtium gambelii</i></b> Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
<b><i>Navarretia prostrata</i></b> prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.1
<b><i>Nemacaulis denudata var. denudata</i></b> coast woolly-heads	PDPGN0G011	None	None	G3G4T2	S2	1B.2
<b><i>Nyctinomops macrotis</i></b> big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
<b><i>Orcuttia californica</i></b> California Orcutt grass	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
<b><i>Pandion haliaetus</i></b> osprey	ABNKC01010	None	None	G5	S4	WL
<b><i>Panoquina errans</i></b> wandering (=saltmarsh) skipper	IILEP84030	None	None	G4G5	S2	
<b><i>Passerculus sandwichensis beldingi</i></b> Belding's savannah sparrow	ABPBX99015	None	Endangered	G5T3	S3	
<b><i>Pentachaeta aurea ssp. allenii</i></b> Allen's pentachaeta	PDAST6X021	None	None	G4T1	S1	1B.1
<b><i>Perognathus longimembris pacificus</i></b> Pacific pocket mouse	AMAFD01042	Endangered	None	G5T1	S1	SSC
<b><i>Phacelia stellaris</i></b> Brand's star phacelia	PDHYD0C510	None	None	G1	S1	1B.1
<b><i>Phrynosoma blainvillii</i></b> coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
<b><i>Poliophtila californica californica</i></b> coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
<b><i>Quercus dumosa</i></b> Nuttall's scrub oak	PDFAG050D0	None	None	G3	S3	1B.1
<b><i>Rallus longirostris levipes</i></b> light-footed clapper rail	ABNME05014	Endangered	Endangered	G5T1T2	S1	FP
<b><i>Riparia riparia</i></b> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<b><i>Rynchops niger</i></b> black skimmer	ABNNM14010	None	None	G5	S2	SSC
<b><i>Senecio aphanactis</i></b> chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
<b><i>Setophaga petechia</i></b> yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC
<b><i>Sidalcea neomexicana</i></b> Salt Spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
<b><i>Sorex ornatus salicornicus</i></b> southern California saltmarsh shrew	AMABA01104	None	None	G5T1?	S1	SSC





Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b>Southern California Arroyo Chub/Santa Ana Sucker Stream</b> Southern California Arroyo Chub/Santa Ana Sucker Stream	CARE2330CA	None	None	GNR	SNR	
<b>Southern Coast Live Oak Riparian Forest</b> Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
<b>Southern Coastal Salt Marsh</b> Southern Coastal Salt Marsh	CTT52120CA	None	None	G2	S2.1	
<b>Southern Cottonwood Willow Riparian Forest</b> Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
<b>Southern Dune Scrub</b> Southern Dune Scrub	CTT21330CA	None	None	G1	S1.1	
<b>Southern Foredunes</b> Southern Foredunes	CTT21230CA	None	None	G2	S2.1	
<b>Southern Sycamore Alder Riparian Woodland</b> Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
<b>Spea hammondii</b> western spadefoot	AAABF02020	None	None	G3	S3	SSC
<b>Sternula antillarum browni</b> California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
<b>Suaeda esteroa</b> estuary seablite	PDCHE0P0D0	None	None	G3	S2	1B.2
<b>Symphotrichum defoliatum</b> San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
<b>Taxidea taxus</b> American badger	AMAJF04010	None	None	G5	S3	SSC
<b>Trigonoscuta dorothea dorothea</b> Dorothy's El Segundo Dune weevil	IICOL51021	None	None	G1T1	S1	
<b>Tryonia imitator</b> mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
<b>Valley Needlegrass Grassland</b> Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
<b>Verbesina dissita</b> big-leaved crownbeard	PDAST9R050	Threatened	Threatened	G1G2	S1	1B.1
<b>Vireo bellii pusillus</b> least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

Record Count: 99

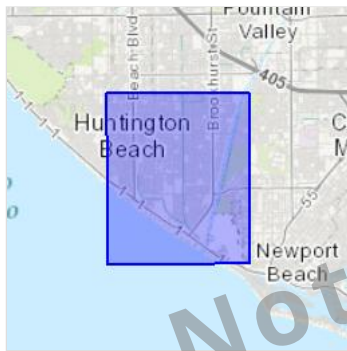
## IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

### Location

Orange County, California



### Local office

Carlsbad Fish And Wildlife Office

☎ (760) 431-9440

📠 (760) 431-5901

2177 Salk Avenue - Suite 250  
Carlsbad, CA 92008-7385

<http://www.fws.gov/carlsbad/>

## Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.

5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> are managed by the [Endangered Species Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

## Birds

NAME	STATUS
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8104">https://ecos.fws.gov/ecp/species/8104</a>	Endangered
Coastal California Gnatcatcher <i>Poliptila californica californica</i> There is a <b>final critical habitat</b> designated for this species. Your location overlaps the designated critical habitat. <a href="https://ecos.fws.gov/ecp/species/8178">https://ecos.fws.gov/ecp/species/8178</a>	Threatened
Least Bell's Vireo <i>Vireo bellii pusillus</i> There is a <b>final critical habitat</b> designated for this species. Your location is outside the designated critical habitat. <a href="https://ecos.fws.gov/ecp/species/5945">https://ecos.fws.gov/ecp/species/5945</a>	Endangered
Light-footed Clapper Rail <i>Rallus longirostris levipes</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/6035">https://ecos.fws.gov/ecp/species/6035</a>	Endangered
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is a <b>final critical habitat</b> designated for this species. Your location is outside the designated critical habitat. <a href="https://ecos.fws.gov/ecp/species/6749">https://ecos.fws.gov/ecp/species/6749</a>	Endangered
Western Snowy Plover <i>Charadrius alexandrinus nivosus</i> There is a <b>final critical habitat</b> designated for this species. Your location overlaps the designated critical habitat. <a href="https://ecos.fws.gov/ecp/species/8035">https://ecos.fws.gov/ecp/species/8035</a>	Threatened

## Crustaceans

NAME	STATUS
San Diego Fairy Shrimp <i>Branchinecta sandiegonensis</i> There is a <b>final critical habitat</b> designated for this species. Your location overlaps the designated critical habitat. <a href="https://ecos.fws.gov/ecp/species/6945">https://ecos.fws.gov/ecp/species/6945</a>	Endangered

## Flowering Plants

NAME	STATUS
Salt Marsh Bird's-beak <i>Cordylanthus maritimus</i> ssp. <i>maritimus</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/6447">https://ecos.fws.gov/ecp/species/6447</a>	Endangered
San Diego Button-celery <i>Eryngium aristulatum</i> var. <i>parishii</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/5937">https://ecos.fws.gov/ecp/species/5937</a>	Endangered
Ventura Marsh Milk-vetch <i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i> There is a <b>final critical habitat</b> designated for this species. Your location is outside the designated critical habitat. <a href="https://ecos.fws.gov/ecp/species/1160">https://ecos.fws.gov/ecp/species/1160</a>	Endangered

## Mammals

NAME	STATUS
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Pacific Pocket Mouse *Perognathus longimembris pacificus*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8080>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Coastal California Gnatcatcher <i>Poliophtila californica californica</i> <a href="https://ecos.fws.gov/ecp/species/8178#crithab">https://ecos.fws.gov/ecp/species/8178#crithab</a>	Final designated
San Diego Fairy Shrimp <i>Branchinecta sandiegonensis</i> <a href="https://ecos.fws.gov/ecp/species/6945#crithab">https://ecos.fws.gov/ecp/species/6945#crithab</a>	Final designated
Western Snowy Plover <i>Charadrius alexandrinus nivosus</i> <a href="https://ecos.fws.gov/ecp/species/8035#crithab">https://ecos.fws.gov/ecp/species/8035#crithab</a>	Final designated

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service<sup>3</sup>. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

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

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

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

The migratory birds species listed below are species of particular conservation concern (e.g. [Birds of Conservation Concern](#)) that may be potentially affected by activities in this location. It is not a list of every bird species you may find in this location, nor a guarantee that all of the bird species on this list will be found on or near this location. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To view available data on other bird species that may occur in your project area, please visit the [AKN Histogram Tools](#) and [Other Bird Data Resources](#). To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

NAME	SEASON(S)
Allen's Hummingbird <i>Selasphorus sasin</i> <a href="https://ecos.fws.gov/ecp/species/9637">https://ecos.fws.gov/ecp/species/9637</a>	Breeding
Ashy Storm-petrel <i>Oceanodroma homochroa</i> <a href="https://ecos.fws.gov/ecp/species/7237">https://ecos.fws.gov/ecp/species/7237</a>	Breeding
Bald Eagle <i>Haliaeetus leucocephalus</i> <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Wintering
Bell's Vireo <i>Vireo bellii</i> <a href="https://ecos.fws.gov/ecp/species/9507">https://ecos.fws.gov/ecp/species/9507</a>	Breeding

Black Oystercatcher <i>Haematopus bachmani</i> <a href="https://ecos.fws.gov/ecp/species/9591">https://ecos.fws.gov/ecp/species/9591</a>	Year-round
Black Skimmer <i>Rynchops niger</i> <a href="https://ecos.fws.gov/ecp/species/5234">https://ecos.fws.gov/ecp/species/5234</a>	Year-round
Black-vented Shearwater <i>Puffinus opisthomelas</i>	Wintering
Brewer's Sparrow <i>Spizella breweri</i> <a href="https://ecos.fws.gov/ecp/species/9291">https://ecos.fws.gov/ecp/species/9291</a>	Year-round
Burrowing Owl <i>Athene cucularia</i> <a href="https://ecos.fws.gov/ecp/species/9737">https://ecos.fws.gov/ecp/species/9737</a>	Year-round
Cactus Wren <i>Campylorhynchus brunneicapillus</i> <a href="https://ecos.fws.gov/ecp/species/8834">https://ecos.fws.gov/ecp/species/8834</a>	Year-round
Calliope Hummingbird <i>Stellula calliope</i> <a href="https://ecos.fws.gov/ecp/species/9526">https://ecos.fws.gov/ecp/species/9526</a>	Migrating
Cassin's Auklet <i>Ptychoramphus aleuticus</i> <a href="https://ecos.fws.gov/ecp/species/6967">https://ecos.fws.gov/ecp/species/6967</a>	Year-round
Costa's Hummingbird <i>Calypte costae</i> <a href="https://ecos.fws.gov/ecp/species/9470">https://ecos.fws.gov/ecp/species/9470</a>	Year-round
Fox Sparrow <i>Passerella iliaca</i>	Wintering
Lawrence's Goldfinch <i>Carduelis lawrencei</i> <a href="https://ecos.fws.gov/ecp/species/9464">https://ecos.fws.gov/ecp/species/9464</a>	Year-round
Least Bittern <i>Ixobrychus exilis</i> <a href="https://ecos.fws.gov/ecp/species/6175">https://ecos.fws.gov/ecp/species/6175</a>	Year-round
Lesser Yellowlegs <i>Tringa flavipes</i> <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Wintering
Lewis's Woodpecker <i>Melanerpes lewis</i> <a href="https://ecos.fws.gov/ecp/species/9408">https://ecos.fws.gov/ecp/species/9408</a>	Wintering
Long-billed Curlew <i>Numenius americanus</i> <a href="https://ecos.fws.gov/ecp/species/5511">https://ecos.fws.gov/ecp/species/5511</a>	Wintering
Magnificent Frigatebird <i>Fregata magnificens</i>	Wintering
Marbled Godwit <i>Limosa fedoa</i> <a href="https://ecos.fws.gov/ecp/species/9481">https://ecos.fws.gov/ecp/species/9481</a>	Wintering
Mountain Plover <i>Charadrius montanus</i> <a href="https://ecos.fws.gov/ecp/species/3638">https://ecos.fws.gov/ecp/species/3638</a>	Wintering
Nuttall's Woodpecker <i>Picoides nuttallii</i> <a href="https://ecos.fws.gov/ecp/species/9410">https://ecos.fws.gov/ecp/species/9410</a>	Year-round
Oak Titmouse <i>Baeolophus inornatus</i> <a href="https://ecos.fws.gov/ecp/species/9656">https://ecos.fws.gov/ecp/species/9656</a>	Year-round
Olive-sided Flycatcher <i>Contopus cooperi</i> <a href="https://ecos.fws.gov/ecp/species/3914">https://ecos.fws.gov/ecp/species/3914</a>	Breeding

Peregrine Falcon <i>Falco peregrinus</i> <a href="https://ecos.fws.gov/ecp/species/8831">https://ecos.fws.gov/ecp/species/8831</a>	Wintering
Pink-footed Shearwater <i>Puffinus creatopus</i>	Year-round
Red Knot <i>Calidris canutus ssp. roselaari</i> <a href="https://ecos.fws.gov/ecp/species/8880">https://ecos.fws.gov/ecp/species/8880</a>	Wintering
Red-crowned Parrot <i>Amazona viridigenalis</i> <a href="https://ecos.fws.gov/ecp/species/9022">https://ecos.fws.gov/ecp/species/9022</a>	Year-round
Rufous Hummingbird <i>selasphorus rufus</i> <a href="https://ecos.fws.gov/ecp/species/8002">https://ecos.fws.gov/ecp/species/8002</a>	Migrating
Rufous-crowned Sparrow <i>Aimophila ruficeps</i> <a href="https://ecos.fws.gov/ecp/species/9718">https://ecos.fws.gov/ecp/species/9718</a>	Year-round
Scripp's Murrelet <i>Synthliboramphus hypoleucus scrippsi</i>	Year-round
Short-billed Dowitcher <i>Limnodromus griseus</i> <a href="https://ecos.fws.gov/ecp/species/9480">https://ecos.fws.gov/ecp/species/9480</a>	Wintering
Short-eared Owl <i>Asio flammeus</i> <a href="https://ecos.fws.gov/ecp/species/9295">https://ecos.fws.gov/ecp/species/9295</a>	Wintering
Snowy Plover <i>Charadrius alexandrinus</i>	Breeding
Tricolored Blackbird <i>Agelaius tricolor</i> <a href="https://ecos.fws.gov/ecp/species/3910">https://ecos.fws.gov/ecp/species/3910</a>	Year-round
Western Grebe <i>aechmophorus occidentalis</i> <a href="https://ecos.fws.gov/ecp/species/6743">https://ecos.fws.gov/ecp/species/6743</a>	Wintering
Whimbrel <i>Numenius phaeopus</i> <a href="https://ecos.fws.gov/ecp/species/9483">https://ecos.fws.gov/ecp/species/9483</a>	Wintering
Xantus'smurrelet <i>Synthliboramphus hypoleucus</i> <a href="https://ecos.fws.gov/ecp/species/6949">https://ecos.fws.gov/ecp/species/6949</a>	Wintering
Yellow Warbler <i>dendroica petechia ssp. brewsteri</i> <a href="https://ecos.fws.gov/ecp/species/3230">https://ecos.fws.gov/ecp/species/3230</a>	Breeding

#### What does IPaC use to generate the list of migratory bird species potentially occurring in my specified location?

##### Landbirds:

Migratory birds that are displayed on the IPaC species list are based on ranges in the latest edition of the National Geographic Guide, Birds of North America (6th Edition, 2011 by Jon L. Dunn, and Jonathan Alderfer). Although these ranges are coarse in nature, a number of U.S. Fish and Wildlife Service migratory bird biologists agree that these maps are some of the best range maps to date. These ranges were clipped to a specific Bird Conservation Region (BCR) or USFWS Region/Regions, if it was indicated in the 2008 list of Birds of Conservation Concern (BCC) that a species was a BCC species only in a particular Region/Regions. Additional modifications have been made to some ranges based on more local or refined range information and/or information provided by U.S. Fish and Wildlife Service biologists with species expertise. All migratory birds that show in areas on land in IPaC are those that appear in the 2008 Birds of Conservation Concern report.

##### Atlantic Seabirds:

Ranges in IPaC for birds off the Atlantic coast are derived from species distribution models developed by the National Oceanic and Atmospheric Association (NOAA) National Centers for Coastal Ocean Science (NCCOS) using the best available seabird survey data for the offshore Atlantic Coastal region to date. NOAA/NCCOS assisted USFWS in developing seasonal species ranges from their models for specific use in IPaC. Some of these birds are not BCC species but were of interest for inclusion because they may occur in high abundance off the coast at different times throughout the year, which potentially makes them more susceptible to certain types of development and activities taking place in that area. For more refined details about the abundance and richness of bird species within your project area off the Atlantic Coast, see the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other types of taxa that may be helpful in your project review.

About the NOAA/NCCOS models: the models were developed as part of the NOAA/NCCOS project: [Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#). The models resulting from this project are being used in a number of decision-support/mapping products in order to help guide decision-making on activities off the Atlantic Coast with the goal of reducing impacts to migratory birds. One such



**Data exclusions**

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

**Data precautions**

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

Not for consultation



# Appendix C

## **Greenhouse Gas Modeling Data**



<b>Emission Source</b>	<b>Estimated Emissions CO2e (MT/yr)</b>
<b>Construction</b>	
Annual Mitigated Construction (Amortized over 30 years)	33.8
<b>Operations</b>	
Area Sources	<0.1
Energy Consumption	42.45
Mobile Sources	29.6517
Solid Waste	6.8244
Water Consumption	13.977
Total (Construction and Operational Emissions)	126.7
<b>Greater than 10,000 MTCO2e?</b>	<b>No</b>



Grading - Grading import/export

Demolition - Estimated based on given demo cubic yardage (400 cy)

Trips and VMT - Client given inputs

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	NumDays	200.00	395.00
tblConstructionPhase	NumDays	20.00	783.00
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	2.00	626.00
tblConstructionPhase	PhaseEndDate	11/11/2018	4/3/2020
tblConstructionPhase	PhaseEndDate	11/11/2018	12/18/2020
tblConstructionPhase	PhaseEndDate	11/11/2018	11/10/2021
tblConstructionPhase	PhaseEndDate	11/11/2018	5/3/2019
tblConstructionPhase	PhaseEndDate	11/11/2018	1/22/2021
tblConstructionPhase	PhaseEndDate	11/11/2018	1/4/2019
tblConstructionPhase	PhaseStartDate	11/12/2018	2/2/2020
tblConstructionPhase	PhaseStartDate	11/12/2018	6/17/2019
tblConstructionPhase	PhaseStartDate	11/12/2018	3/25/2019
tblConstructionPhase	PhaseStartDate	11/12/2018	1/18/2021
tblGrading	AcresOfGrading	0.00	2.00
tblGrading	AcresOfGrading	20.00	0.00
tblGrading	MaterialExported	0.00	7,500.00
tblGrading	MaterialImported	0.00	6,000.00
tblLandUse	LotAcreage	0.25	2.00
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.20	0.20

tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.38
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tblOffRoadEquipment	LoadFactor	0.36	0.36
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tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators

tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	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	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2018	2022
tblTripsAndVMT	HaulingTripNumber	23.00	10.00
tblTripsAndVMT	HaulingTripNumber	1,688.00	1,072.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.0751	0.7285	0.4225	1.0600e-003	5.7100e-003	0.0329	0.0386	1.5000e-003	0.0312	0.0327	0.0000	95.3553	95.3553	0.0231	0.0000	95.9334
2019	0.7909	7.4980	5.5931	0.0126	0.0709	0.3561	0.4270	0.0186	0.3385	0.3571	0.0000	1,121.7476	1,121.7476	0.2557	0.0000	1,128.1410
2020	0.7698	6.3392	5.4558	0.0117	0.0508	0.3174	0.3682	0.0134	0.3043	0.3177	0.0000	1,014.6742	1,014.6742	0.2121	0.0000	1,019.9763
2021	0.2712	2.1674	2.0087	5.0600e-003	0.0259	0.1020	0.1279	6.8000e-003	0.0976	0.1044	0.0000	441.7513	441.7513	0.1001	0.0000	444.2541
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Maximum</b>	<b>0.7909</b>	<b>7.4980</b>	<b>5.5931</b>	<b>0.0126</b>	<b>0.0709</b>	<b>0.3561</b>	<b>0.4270</b>	<b>0.0186</b>	<b>0.3385</b>	<b>0.3571</b>	<b>0.0000</b>	<b>1,121.7476</b>	<b>1,121.7476</b>	<b>0.2557</b>	<b>0.0000</b>	<b>1,128.1410</b>



**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.0751	0.7285	0.4225	1.0600e-003	5.6400e-003	0.0329	0.0385	1.4900e-003	0.0312	0.0327	0.0000	95.3552	95.3552	0.0231	0.0000	95.9333
2019	0.7909	7.4980	5.5931	0.0126	0.0693	0.3561	0.4254	0.0184	0.3385	0.3568	0.0000	1,121.7463	1,121.7463	0.2557	0.0000	1,128.1397
2020	0.7698	6.3392	5.4558	0.0117	0.0503	0.3174	0.3677	0.0134	0.3043	0.3176	0.0000	1,014.6730	1,014.6730	0.2121	0.0000	1,019.9751
2021	0.2712	2.1674	2.0087	5.0600e-003	0.0255	0.1020	0.1275	6.7300e-003	0.0976	0.1044	0.0000	441.7508	441.7508	0.1001	0.0000	444.2536
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Maximum</b>	<b>0.7909</b>	<b>7.4980</b>	<b>5.5931</b>	<b>0.0126</b>	<b>0.0693</b>	<b>0.3561</b>	<b>0.4254</b>	<b>0.0184</b>	<b>0.3385</b>	<b>0.3568</b>	<b>0.0000</b>	<b>1,121.7463</b>	<b>1,121.7463</b>	<b>0.2557</b>	<b>0.0000</b>	<b>1,128.1397</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.70</b>	<b>0.00</b>	<b>0.27</b>	<b>0.89</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	11-12-2018	2-11-2019	1.2265	1.2265
2	2-12-2019	5-11-2019	1.3748	1.3748
3	5-12-2019	8-11-2019	1.3435	1.3435
4	8-12-2019	11-11-2019	1.6291	1.6291
5	11-12-2019	2-11-2020	1.5673	1.5673
6	2-12-2020	5-11-2020	1.4853	1.4853
7	5-12-2020	8-11-2020	1.4750	1.4750
8	8-12-2020	11-11-2020	1.4753	1.4753
9	11-12-2020	2-11-2021	1.0593	1.0593
10	2-12-2021	5-11-2021	0.6799	0.6799
11	5-12-2021	8-11-2021	0.7026	0.7026
12	8-12-2021	9-30-2021	0.3818	0.3818
		<b>Highest</b>	1.6291	1.6291

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	2/2/2020	4/3/2020	5	45	
2	Building Construction	Building Construction	6/17/2019	12/18/2020	5	395	
3	Demolition	Demolition	11/12/2018	11/10/2021	5	783	
4	Grading	Grading	3/25/2019	5/3/2019	5	30	
5	Paving	Paving	1/18/2021	1/22/2021	5	5	
6	Site Preparation	Site Preparation	11/12/2018	1/4/2019	5	40	
7	Drainage/Utilities/Sub-grade	Trenching	2/11/2019	6/23/2020	5	357	
8	Mechanical/Electrical Equipment & Systems	Site Preparation	10/21/2019	3/14/2022	5	626	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 16,403; Non-Residential Outdoor: 5,468; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	4.00	81	0.73
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	1	8.00	80	0.38

Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Graders	0	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	0	8.00	367	0.48
Building Construction	Welders	0	8.00	46	0.45
Mechanical/Electrical Equipment & Systems	Graders	0	8.00	187	0.41
Mechanical/Electrical Equipment & Systems	Scrapers	0	8.00	367	0.48
Mechanical/Electrical Equipment & Systems	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	4.00	9	0.56
Building Construction	Rough Terrain Forklifts	1	4.00	100	0.40
Demolition	Air Compressors	2	8.00	78	0.48
Demolition	Forklifts	2	4.00	89	0.20
Demolition	Generator Sets	1	4.00	84	0.74
Demolition	Off-Highway Trucks	2	8.00	402	0.38
Grading	Bore/Drill Rigs	1	8.00	221	0.50
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Pumps	1	8.00	84	0.74
Grading	Rollers	1	4.00	80	0.38

Grading	Rubber Tired Loaders	1	8.00	203	0.36
Drainage/Utilities/Sub-grade	Cranes	1	4.00	231	0.29
Drainage/Utilities/Sub-grade	Excavators	2	8.00	158	0.38
Drainage/Utilities/Sub-grade	Rollers	1	4.00	80	0.38
Drainage/Utilities/Sub-grade	Rubber Tired Loaders	2	8.00	203	0.36
Drainage/Utilities/Sub-grade	Skid Steer Loaders	1	8.00	65	0.37
Paving	Concrete/Industrial Saws	1	4.00	81	0.73
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Graders	1	4.00	187	0.41
Paving	Rubber Tired Loaders	1	8.00	203	0.36
Paving	Sweepers/Scrubbers	1	2.00	64	0.46
Site Preparation	Plate Compactors	1	6.00	8	0.43
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36

### 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
Architectural Coating	0	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	5.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	8	20.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,072.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Mechanical/Electrical Equipment & Systems	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Sub-grade	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

### 3.2 Architectural Coating - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0507					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0507</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	8.0000e-005	8.5000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2224	0.2224	1.0000e-005	0.0000	0.2226
<b>Total</b>	<b>1.0000e-004</b>	<b>8.0000e-005</b>	<b>8.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2224</b>	<b>0.2224</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2226</b>

### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0507					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0507</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	8.0000e-005	8.5000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2224	0.2224	1.0000e-005	0.0000	0.2226
<b>Total</b>	<b>1.0000e-004</b>	<b>8.0000e-005</b>	<b>8.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2224</b>	<b>0.2224</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2226</b>

## 3.3 Building Construction - 2019

### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1634	1.3922	1.2322	2.0900e-003		0.0852	0.0852		0.0830	0.0830	0.0000	180.7795	180.7795	0.0250	0.0000	181.4042
<b>Total</b>	<b>0.1634</b>	<b>1.3922</b>	<b>1.2322</b>	<b>2.0900e-003</b>		<b>0.0852</b>	<b>0.0852</b>		<b>0.0830</b>	<b>0.0830</b>	<b>0.0000</b>	<b>180.7795</b>	<b>180.7795</b>	<b>0.0250</b>	<b>0.0000</b>	<b>181.4042</b>

**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	5.6000e-004	0.0166	4.2400e-003	4.0000e-005	8.9000e-004	1.1000e-004	1.0000e-003	2.6000e-004	1.0000e-004	3.6000e-004	0.0000	3.4964	3.4964	2.5000e-004	0.0000	3.5025
Worker	1.7100e-003	1.3600e-003	0.0148	4.0000e-005	3.8900e-003	3.0000e-005	3.9300e-003	1.0300e-003	3.0000e-005	1.0600e-003	0.0000	3.6219	3.6219	1.1000e-004	0.0000	3.6247
<b>Total</b>	<b>2.2700e-003</b>	<b>0.0180</b>	<b>0.0191</b>	<b>8.0000e-005</b>	<b>4.7800e-003</b>	<b>1.4000e-004</b>	<b>4.9300e-003</b>	<b>1.2900e-003</b>	<b>1.3000e-004</b>	<b>1.4200e-003</b>	<b>0.0000</b>	<b>7.1183</b>	<b>7.1183</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>7.1272</b>

**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	0.1634	1.3922	1.2322	2.0900e-003		0.0852	0.0852		0.0830	0.0830	0.0000	180.7793	180.7793	0.0250	0.0000	181.4039
<b>Total</b>	<b>0.1634</b>	<b>1.3922</b>	<b>1.2322</b>	<b>2.0900e-003</b>		<b>0.0852</b>	<b>0.0852</b>		<b>0.0830</b>	<b>0.0830</b>	<b>0.0000</b>	<b>180.7793</b>	<b>180.7793</b>	<b>0.0250</b>	<b>0.0000</b>	<b>181.4039</b>

**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	5.6000e-004	0.0166	4.2400e-003	4.0000e-005	8.9000e-004	1.1000e-004	1.0000e-003	2.6000e-004	1.0000e-004	3.6000e-004	0.0000	3.4964	3.4964	2.5000e-004	0.0000	3.5025
Worker	1.7100e-003	1.3600e-003	0.0148	4.0000e-005	3.8900e-003	3.0000e-005	3.9300e-003	1.0300e-003	3.0000e-005	1.0600e-003	0.0000	3.6219	3.6219	1.1000e-004	0.0000	3.6247
<b>Total</b>	<b>2.2700e-003</b>	<b>0.0180</b>	<b>0.0191</b>	<b>8.0000e-005</b>	<b>4.7800e-003</b>	<b>1.4000e-004</b>	<b>4.9300e-003</b>	<b>1.2900e-003</b>	<b>1.3000e-004</b>	<b>1.4200e-003</b>	<b>0.0000</b>	<b>7.1183</b>	<b>7.1183</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>7.1272</b>

### 3.3 Building Construction - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2637	2.2739	2.1727	3.7300e-003		0.1320	0.1320		0.1286	0.1286	0.0000	320.2053	320.2053	0.0429	0.0000	321.2779
<b>Total</b>	<b>0.2637</b>	<b>2.2739</b>	<b>2.1727</b>	<b>3.7300e-003</b>		<b>0.1320</b>	<b>0.1320</b>		<b>0.1286</b>	<b>0.1286</b>	<b>0.0000</b>	<b>320.2053</b>	<b>320.2053</b>	<b>0.0429</b>	<b>0.0000</b>	<b>321.2779</b>

#### 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	8.6000e-004	0.0271	6.8400e-003	6.0000e-005	1.5900e-003	1.3000e-004	1.7300e-003	4.6000e-004	1.3000e-004	5.9000e-004	0.0000	6.1896	6.1896	4.1000e-004	0.0000	6.1999
Worker	2.8200e-003	2.1700e-003	0.0240	7.0000e-005	6.9400e-003	5.0000e-005	6.9900e-003	1.8400e-003	5.0000e-005	1.8900e-003	0.0000	6.2531	6.2531	1.8000e-004	0.0000	6.2576
<b>Total</b>	<b>3.6800e-003</b>	<b>0.0293</b>	<b>0.0308</b>	<b>1.3000e-004</b>	<b>8.5300e-003</b>	<b>1.8000e-004</b>	<b>8.7200e-003</b>	<b>2.3000e-003</b>	<b>1.8000e-004</b>	<b>2.4800e-003</b>	<b>0.0000</b>	<b>12.4427</b>	<b>12.4427</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>12.4575</b>

#### 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	0.2637	2.2739	2.1727	3.7300e-003		0.1320	0.1320		0.1286	0.1286	0.0000	320.2049	320.2049	0.0429	0.0000	321.2775
<b>Total</b>	<b>0.2637</b>	<b>2.2739</b>	<b>2.1727</b>	<b>3.7300e-003</b>		<b>0.1320</b>	<b>0.1320</b>		<b>0.1286</b>	<b>0.1286</b>	<b>0.0000</b>	<b>320.2049</b>	<b>320.2049</b>	<b>0.0429</b>	<b>0.0000</b>	<b>321.2775</b>



### 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	8.6000e-004	0.0271	6.8400e-003	6.0000e-005	1.5900e-003	1.3000e-004	1.7300e-003	4.6000e-004	1.3000e-004	5.9000e-004	0.0000	6.1896	6.1896	4.1000e-004	0.0000	6.1999
Worker	2.8200e-003	2.1700e-003	0.0240	7.0000e-005	6.9400e-003	5.0000e-005	6.9900e-003	1.8400e-003	5.0000e-005	1.8900e-003	0.0000	6.2531	6.2531	1.8000e-004	0.0000	6.2576
<b>Total</b>	<b>3.6800e-003</b>	<b>0.0293</b>	<b>0.0308</b>	<b>1.3000e-004</b>	<b>8.5300e-003</b>	<b>1.8000e-004</b>	<b>8.7200e-003</b>	<b>2.3000e-003</b>	<b>1.8000e-004</b>	<b>2.4800e-003</b>	<b>0.0000</b>	<b>12.4427</b>	<b>12.4427</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>12.4575</b>

### 3.4 Demolition - 2018

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1000e-004	0.0000	1.1000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0548	0.4982	0.3302	7.6000e-004		0.0253	0.0253		0.0242	0.0242	0.0000	68.3458	68.3458	0.0163	0.0000	68.7528
<b>Total</b>	<b>0.0548</b>	<b>0.4982</b>	<b>0.3302</b>	<b>7.6000e-004</b>	<b>1.1000e-004</b>	<b>0.0253</b>	<b>0.0254</b>	<b>2.0000e-005</b>	<b>0.0242</b>	<b>0.0242</b>	<b>0.0000</b>	<b>68.3458</b>	<b>68.3458</b>	<b>0.0163</b>	<b>0.0000</b>	<b>68.7528</b>

#### 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	7.0000e-005	1.0000e-005	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0178	0.0178	0.0000	0.0000	0.0179
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	1.9100e-003	1.5700e-003	0.0168	4.0000e-005	3.9500e-003	3.0000e-005	3.9800e-003	1.0500e-003	3.0000e-005	1.0800e-003	0.0000	3.7926	3.7926	1.3000e-004	0.0000	3.7958
<b>Total</b>	<b>1.9100e-003</b>	<b>1.6400e-003</b>	<b>0.0168</b>	<b>4.0000e-005</b>	<b>4.0200e-003</b>	<b>3.0000e-005</b>	<b>4.0500e-003</b>	<b>1.0700e-003</b>	<b>3.0000e-005</b>	<b>1.1000e-003</b>	<b>0.0000</b>	<b>3.8104</b>	<b>3.8104</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>3.8137</b>

### 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					4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0548	0.4982	0.3302	7.6000e-004		0.0253	0.0253		0.0242	0.0242	0.0000	68.3457	68.3457	0.0163	0.0000	68.7527
<b>Total</b>	<b>0.0548</b>	<b>0.4982</b>	<b>0.3302</b>	<b>7.6000e-004</b>	<b>4.0000e-005</b>	<b>0.0253</b>	<b>0.0253</b>	<b>1.0000e-005</b>	<b>0.0242</b>	<b>0.0242</b>	<b>0.0000</b>	<b>68.3457</b>	<b>68.3457</b>	<b>0.0163</b>	<b>0.0000</b>	<b>68.7527</b>

### 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	7.0000e-005	1.0000e-005	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0178	0.0178	0.0000	0.0000	0.0179
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	1.9100e-003	1.5700e-003	0.0168	4.0000e-005	3.9500e-003	3.0000e-005	3.9800e-003	1.0500e-003	3.0000e-005	1.0800e-003	0.0000	3.7926	3.7926	1.3000e-004	0.0000	3.7958
<b>Total</b>	<b>1.9100e-003</b>	<b>1.6400e-003</b>	<b>0.0168</b>	<b>4.0000e-005</b>	<b>4.0200e-003</b>	<b>3.0000e-005</b>	<b>4.0500e-003</b>	<b>1.0700e-003</b>	<b>3.0000e-005</b>	<b>1.1000e-003</b>	<b>0.0000</b>	<b>3.8104</b>	<b>3.8104</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>3.8137</b>

## 3.4 Demolition - 2019

### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.2000e-004	0.0000	8.2000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3590	3.1926	2.3303	5.5400e-003		0.1576	0.1576		0.1510	0.1510	0.0000	490.0058	490.0058	0.1165	0.0000	492.9174
<b>Total</b>	<b>0.3590</b>	<b>3.1926</b>	<b>2.3303</b>	<b>5.5400e-003</b>	<b>8.2000e-004</b>	<b>0.1576</b>	<b>0.1584</b>	<b>1.2000e-004</b>	<b>0.1510</b>	<b>0.1511</b>	<b>0.0000</b>	<b>490.0058</b>	<b>490.0058</b>	<b>0.1165</b>	<b>0.0000</b>	<b>492.9174</b>

### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	5.1000e-004	1.0000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1278	0.1278	1.0000e-005	0.0000	0.1280
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	0.0126	0.0100	0.1090	2.9000e-004	0.0286	2.3000e-004	0.0289	7.6000e-003	2.1000e-004	7.8200e-003	0.0000	26.6285	26.6285	8.4000e-004	0.0000	26.6494
<b>Total</b>	<b>0.0126</b>	<b>0.0105</b>	<b>0.1091</b>	<b>2.9000e-004</b>	<b>0.0287</b>	<b>2.3000e-004</b>	<b>0.0289</b>	<b>7.6200e-003</b>	<b>2.1000e-004</b>	<b>7.8400e-003</b>	<b>0.0000</b>	<b>26.7563</b>	<b>26.7563</b>	<b>8.5000e-004</b>	<b>0.0000</b>	<b>26.7774</b>

### 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					3.2000e-004	0.0000	3.2000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3590	3.1926	2.3303	5.5400e-003		0.1576	0.1576		0.1510	0.1510	0.0000	490.0052	490.0052	0.1165	0.0000	492.9168
<b>Total</b>	<b>0.3590</b>	<b>3.1926</b>	<b>2.3303</b>	<b>5.5400e-003</b>	<b>3.2000e-004</b>	<b>0.1576</b>	<b>0.1579</b>	<b>5.0000e-005</b>	<b>0.1510</b>	<b>0.1510</b>	<b>0.0000</b>	<b>490.0052</b>	<b>490.0052</b>	<b>0.1165</b>	<b>0.0000</b>	<b>492.9168</b>

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	5.1000e-004	1.0000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1278	0.1278	1.0000e-005	0.0000	0.1280
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	0.0126	0.0100	0.1090	2.9000e-004	0.0286	2.3000e-004	0.0289	7.6000e-003	2.1000e-004	7.8200e-003	0.0000	26.6285	26.6285	8.4000e-004	0.0000	26.6494
<b>Total</b>	<b>0.0126</b>	<b>0.0105</b>	<b>0.1091</b>	<b>2.9000e-004</b>	<b>0.0287</b>	<b>2.3000e-004</b>	<b>0.0289</b>	<b>7.6200e-003</b>	<b>2.1000e-004</b>	<b>7.8400e-003</b>	<b>0.0000</b>	<b>26.7563</b>	<b>26.7563</b>	<b>8.5000e-004</b>	<b>0.0000</b>	<b>26.7774</b>

### 3.4 Demolition - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.2000e-004	0.0000	8.2000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3317	2.8678	2.2826	5.5600e-003		0.1380	0.1380		0.1321	0.1321	0.0000	484.5368	484.5368	0.1157	0.0000	487.4298
<b>Total</b>	<b>0.3317</b>	<b>2.8678</b>	<b>2.2826</b>	<b>5.5600e-003</b>	<b>8.2000e-004</b>	<b>0.1380</b>	<b>0.1388</b>	<b>1.2000e-004</b>	<b>0.1321</b>	<b>0.1322</b>	<b>0.0000</b>	<b>484.5368</b>	<b>484.5368</b>	<b>0.1157</b>	<b>0.0000</b>	<b>487.4298</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.8000e-004	1.0000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1269	0.1269	1.0000e-005	0.0000	0.1272
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	0.0117	8.9800e-003	0.0994	2.9000e-004	0.0287	2.2000e-004	0.0290	7.6300e-003	2.1000e-004	7.8400e-003	0.0000	25.9021	25.9021	7.5000e-004	0.0000	25.9207
<b>Total</b>	<b>0.0117</b>	<b>9.4600e-003</b>	<b>0.0995</b>	<b>2.9000e-004</b>	<b>0.0288</b>	<b>2.2000e-004</b>	<b>0.0290</b>	<b>7.6500e-003</b>	<b>2.1000e-004</b>	<b>7.8600e-003</b>	<b>0.0000</b>	<b>26.0290</b>	<b>26.0290</b>	<b>7.6000e-004</b>	<b>0.0000</b>	<b>26.0479</b>

#### 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					3.2000e-004	0.0000	3.2000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3317	2.8678	2.2826	5.5600e-003		0.1380	0.1380		0.1321	0.1321	0.0000	484.5363	484.5363	0.1157	0.0000	487.4293
<b>Total</b>	<b>0.3317</b>	<b>2.8678</b>	<b>2.2826</b>	<b>5.5600e-003</b>	<b>3.2000e-004</b>	<b>0.1380</b>	<b>0.1383</b>	<b>5.0000e-005</b>	<b>0.1321</b>	<b>0.1322</b>	<b>0.0000</b>	<b>484.5363</b>	<b>484.5363</b>	<b>0.1157</b>	<b>0.0000</b>	<b>487.4293</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.8000e-004	1.0000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1269	0.1269	1.0000e-005	0.0000	0.1272
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	0.0117	8.9800e-003	0.0994	2.9000e-004	0.0287	2.2000e-004	0.0290	7.6300e-003	2.1000e-004	7.8400e-003	0.0000	25.9021	25.9021	7.5000e-004	0.0000	25.9207
<b>Total</b>	<b>0.0117</b>	<b>9.4600e-003</b>	<b>0.0995</b>	<b>2.9000e-004</b>	<b>0.0288</b>	<b>2.2000e-004</b>	<b>0.0290</b>	<b>7.6500e-003</b>	<b>2.1000e-004</b>	<b>7.8600e-003</b>	<b>0.0000</b>	<b>26.0290</b>	<b>26.0290</b>	<b>7.6000e-004</b>	<b>0.0000</b>	<b>26.0479</b>

**3.4 Demolition - 2021**

**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					7.0000e-004	0.0000	7.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2579	2.1211	1.8978	4.7500e-003		0.1001	0.1001		0.0958	0.0958	0.0000	414.2403	414.2403	0.0979	0.0000	416.6886
<b>Total</b>	<b>0.2579</b>	<b>2.1211</b>	<b>1.8978</b>	<b>4.7500e-003</b>	<b>7.0000e-004</b>	<b>0.1001</b>	<b>0.1008</b>	<b>1.1000e-004</b>	<b>0.0958</b>	<b>0.0960</b>	<b>0.0000</b>	<b>414.2403</b>	<b>414.2403</b>	<b>0.0979</b>	<b>0.0000</b>	<b>416.6886</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	8.0000e-005	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1074	0.1074	1.0000e-005	0.0000	0.1075
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	9.3100e-003	6.9100e-003	0.0782	2.4000e-004	0.0246	1.9000e-004	0.0248	6.5300e-003	1.7000e-004	6.7000e-003	0.0000	21.4290	21.4290	5.8000e-004	0.0000	21.4434
<b>Total</b>	<b>9.3200e-003</b>	<b>7.2900e-003</b>	<b>0.0783</b>	<b>2.4000e-004</b>	<b>0.0247</b>	<b>1.9000e-004</b>	<b>0.0248</b>	<b>6.5500e-003</b>	<b>1.7000e-004</b>	<b>6.7200e-003</b>	<b>0.0000</b>	<b>21.5364</b>	<b>21.5364</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>21.5510</b>

### 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					2.7000e-004	0.0000	2.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2579	2.1211	1.8978	4.7500e-003		0.1001	0.1001		0.0958	0.0958	0.0000	414.2398	414.2398	0.0979	0.0000	416.6881
<b>Total</b>	<b>0.2579</b>	<b>2.1211</b>	<b>1.8978</b>	<b>4.7500e-003</b>	<b>2.7000e-004</b>	<b>0.1001</b>	<b>0.1003</b>	<b>4.0000e-005</b>	<b>0.0958</b>	<b>0.0959</b>	<b>0.0000</b>	<b>414.2398</b>	<b>414.2398</b>	<b>0.0979</b>	<b>0.0000</b>	<b>416.6881</b>

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	8.0000e-005	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1074	0.1074	1.0000e-005	0.0000	0.1075
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	9.3100e-003	6.9100e-003	0.0782	2.4000e-004	0.0246	1.9000e-004	0.0248	6.5300e-003	1.7000e-004	6.7000e-003	0.0000	21.4290	21.4290	5.8000e-004	0.0000	21.4434
<b>Total</b>	<b>9.3200e-003</b>	<b>7.2900e-003</b>	<b>0.0783</b>	<b>2.4000e-004</b>	<b>0.0247</b>	<b>1.9000e-004</b>	<b>0.0248</b>	<b>6.5500e-003</b>	<b>1.7000e-004</b>	<b>6.7200e-003</b>	<b>0.0000</b>	<b>21.5364</b>	<b>21.5364</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>21.5510</b>

### 3.5 Grading - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8200e-003	0.0000	1.8200e-003	2.3000e-004	0.0000	2.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0304	0.3325	0.2107	5.2000e-004		0.0144	0.0144		0.0136	0.0136	0.0000	46.0784	46.0784	0.0125	0.0000	46.3900
<b>Total</b>	<b>0.0304</b>	<b>0.3325</b>	<b>0.2107</b>	<b>5.2000e-004</b>	<b>1.8200e-003</b>	<b>0.0144</b>	<b>0.0162</b>	<b>2.3000e-004</b>	<b>0.0136</b>	<b>0.0138</b>	<b>0.0000</b>	<b>46.0784</b>	<b>46.0784</b>	<b>0.0125</b>	<b>0.0000</b>	<b>46.3900</b>

### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.6700e-003	0.1649	0.0330	4.2000e-004	9.2100e-003	6.0000e-004	9.8100e-003	2.5300e-003	5.8000e-004	3.1000e-003	0.0000	41.0829	41.0829	3.0200e-003	0.0000	41.1584
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	1.0800e-003	8.6000e-004	9.4000e-003	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	2.2956	2.2956	7.0000e-005	0.0000	2.2974
<b>Total</b>	<b>5.7500e-003</b>	<b>0.1657</b>	<b>0.0424</b>	<b>4.5000e-004</b>	<b>0.0117</b>	<b>6.2000e-004</b>	<b>0.0123</b>	<b>3.1900e-003</b>	<b>6.0000e-004</b>	<b>3.7700e-003</b>	<b>0.0000</b>	<b>43.3785</b>	<b>43.3785</b>	<b>3.0900e-003</b>	<b>0.0000</b>	<b>43.4558</b>

### 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					7.1000e-004	0.0000	7.1000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0304	0.3325	0.2107	5.2000e-004		0.0144	0.0144		0.0136	0.0136	0.0000	46.0783	46.0783	0.0125	0.0000	46.3899
<b>Total</b>	<b>0.0304</b>	<b>0.3325</b>	<b>0.2107</b>	<b>5.2000e-004</b>	<b>7.1000e-004</b>	<b>0.0144</b>	<b>0.0151</b>	<b>9.0000e-005</b>	<b>0.0136</b>	<b>0.0136</b>	<b>0.0000</b>	<b>46.0783</b>	<b>46.0783</b>	<b>0.0125</b>	<b>0.0000</b>	<b>46.3899</b>

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.6700e-003	0.1649	0.0330	4.2000e-004	9.2100e-003	6.0000e-004	9.8100e-003	2.5300e-003	5.8000e-004	3.1000e-003	0.0000	41.0829	41.0829	3.0200e-003	0.0000	41.1584
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	1.0800e-003	8.6000e-004	9.4000e-003	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	2.2956	2.2956	7.0000e-005	0.0000	2.2974
<b>Total</b>	<b>5.7500e-003</b>	<b>0.1657</b>	<b>0.0424</b>	<b>4.5000e-004</b>	<b>0.0117</b>	<b>6.2000e-004</b>	<b>0.0123</b>	<b>3.1900e-003</b>	<b>6.0000e-004</b>	<b>3.7700e-003</b>	<b>0.0000</b>	<b>43.3785</b>	<b>43.3785</b>	<b>3.0900e-003</b>	<b>0.0000</b>	<b>43.4558</b>

### 3.6 Paving - 2021

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.7200e-003	0.0389	0.0309	6.0000e-005		1.7400e-003	1.7400e-003		1.6200e-003	1.6200e-003	0.0000	5.4963	5.4963	1.5800e-003	0.0000	5.5358
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.7200e-003</b>	<b>0.0389</b>	<b>0.0309</b>	<b>6.0000e-005</b>		<b>1.7400e-003</b>	<b>1.7400e-003</b>		<b>1.6200e-003</b>	<b>1.6200e-003</b>	<b>0.0000</b>	<b>5.4963</b>	<b>5.4963</b>	<b>1.5800e-003</b>	<b>0.0000</b>	<b>5.5358</b>

#### 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	2.1000e-004	1.5000e-004	1.7400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4783	0.4783	1.0000e-005	0.0000	0.4787
<b>Total</b>	<b>2.1000e-004</b>	<b>1.5000e-004</b>	<b>1.7400e-003</b>	<b>1.0000e-005</b>	<b>5.5000e-004</b>	<b>0.0000</b>	<b>5.5000e-004</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>0.4783</b>	<b>0.4783</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.4787</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.7200e-003	0.0389	0.0309	6.0000e-005		1.7400e-003	1.7400e-003		1.6200e-003	1.6200e-003	0.0000	5.4963	5.4963	1.5800e-003	0.0000	5.5358
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.7200e-003</b>	<b>0.0389</b>	<b>0.0309</b>	<b>6.0000e-005</b>		<b>1.7400e-003</b>	<b>1.7400e-003</b>		<b>1.6200e-003</b>	<b>1.6200e-003</b>	<b>0.0000</b>	<b>5.4963</b>	<b>5.4963</b>	<b>1.5800e-003</b>	<b>0.0000</b>	<b>5.5358</b>



### 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	2.1000e-004	1.5000e-004	1.7400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4783	0.4783	1.0000e-005	0.0000	0.4787
<b>Total</b>	<b>2.1000e-004</b>	<b>1.5000e-004</b>	<b>1.7400e-003</b>	<b>1.0000e-005</b>	<b>5.5000e-004</b>	<b>0.0000</b>	<b>5.5000e-004</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>0.4783</b>	<b>0.4783</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.4787</b>

### 3.7 Site Preparation - 2018

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0177	0.2280	0.0687	2.4000e-004		7.5700e-003	7.5700e-003		6.9700e-003	6.9700e-003	0.0000	21.6821	21.6821	6.6600e-003	0.0000	21.8487
<b>Total</b>	<b>0.0177</b>	<b>0.2280</b>	<b>0.0687</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>7.5700e-003</b>	<b>7.5700e-003</b>	<b>0.0000</b>	<b>6.9700e-003</b>	<b>6.9700e-003</b>	<b>0.0000</b>	<b>21.6821</b>	<b>21.6821</b>	<b>6.6600e-003</b>	<b>0.0000</b>	<b>21.8487</b>

#### 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	7.6000e-004	6.3000e-004	6.7300e-003	2.0000e-005	1.5800e-003	1.0000e-005	1.5900e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.5170	1.5170	5.0000e-005	0.0000	1.5183
<b>Total</b>	<b>7.6000e-004</b>	<b>6.3000e-004</b>	<b>6.7300e-003</b>	<b>2.0000e-005</b>	<b>1.5800e-003</b>	<b>1.0000e-005</b>	<b>1.5900e-003</b>	<b>4.2000e-004</b>	<b>1.0000e-005</b>	<b>4.3000e-004</b>	<b>0.0000</b>	<b>1.5170</b>	<b>1.5170</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>1.5183</b>

### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0177	0.2280	0.0687	2.4000e-004		7.5700e-003	7.5700e-003		6.9700e-003	6.9700e-003	0.0000	21.6821	21.6821	6.6600e-003	0.0000	21.8486
<b>Total</b>	<b>0.0177</b>	<b>0.2280</b>	<b>0.0687</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>7.5700e-003</b>	<b>7.5700e-003</b>	<b>0.0000</b>	<b>6.9700e-003</b>	<b>6.9700e-003</b>	<b>0.0000</b>	<b>21.6821</b>	<b>21.6821</b>	<b>6.6600e-003</b>	<b>0.0000</b>	<b>21.8486</b>

### 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	7.6000e-004	6.3000e-004	6.7300e-003	2.0000e-005	1.5800e-003	1.0000e-005	1.5900e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.5170	1.5170	5.0000e-005	0.0000	1.5183
<b>Total</b>	<b>7.6000e-004</b>	<b>6.3000e-004</b>	<b>6.7300e-003</b>	<b>2.0000e-005</b>	<b>1.5800e-003</b>	<b>1.0000e-005</b>	<b>1.5900e-003</b>	<b>4.2000e-004</b>	<b>1.0000e-005</b>	<b>4.3000e-004</b>	<b>0.0000</b>	<b>1.5170</b>	<b>1.5170</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>1.5183</b>

## 3.7 Site Preparation - 2019

### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0232	7.3700e-003	3.0000e-005		7.6000e-004	7.6000e-004		7.0000e-004	7.0000e-004	0.0000	2.3685	2.3685	7.4000e-004	0.0000	2.3869
<b>Total</b>	<b>1.8400e-003</b>	<b>0.0232</b>	<b>7.3700e-003</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>7.6000e-004</b>	<b>7.6000e-004</b>	<b>0.0000</b>	<b>7.0000e-004</b>	<b>7.0000e-004</b>	<b>0.0000</b>	<b>2.3685</b>	<b>2.3685</b>	<b>7.4000e-004</b>	<b>0.0000</b>	<b>2.3869</b>

**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	8.0000e-005	6.0000e-005	6.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1632	0.1632	1.0000e-005	0.0000	0.1634
<b>Total</b>	<b>8.0000e-005</b>	<b>6.0000e-005</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>1.8000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.1632</b>	<b>0.1632</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1634</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0232	7.3700e-003	3.0000e-005		7.6000e-004	7.6000e-004		7.0000e-004	7.0000e-004	0.0000	2.3685	2.3685	7.4000e-004	0.0000	2.3869
<b>Total</b>	<b>1.8400e-003</b>	<b>0.0232</b>	<b>7.3700e-003</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>7.6000e-004</b>	<b>7.6000e-004</b>	<b>0.0000</b>	<b>7.0000e-004</b>	<b>7.0000e-004</b>	<b>0.0000</b>	<b>2.3685</b>	<b>2.3685</b>	<b>7.4000e-004</b>	<b>0.0000</b>	<b>2.3869</b>

**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	8.0000e-005	6.0000e-005	6.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1632	0.1632	1.0000e-005	0.0000	0.1634
<b>Total</b>	<b>8.0000e-005</b>	<b>6.0000e-005</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>1.8000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.1632</b>	<b>0.1632</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1634</b>

### 3.8 Drainage/Utilities/Sub-grade - 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	0.2056	2.3552	1.5542	3.3800e-003		0.0970	0.0970		0.0892	0.0892	0.0000	303.7964	303.7964	0.0961	0.0000	306.1993
<b>Total</b>	<b>0.2056</b>	<b>2.3552</b>	<b>1.5542</b>	<b>3.3800e-003</b>		<b>0.0970</b>	<b>0.0970</b>		<b>0.0892</b>	<b>0.0892</b>	<b>0.0000</b>	<b>303.7964</b>	<b>303.7964</b>	<b>0.0961</b>	<b>0.0000</b>	<b>306.1993</b>

#### 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	0.0101	8.0200e-003	0.0872	2.4000e-004	0.0229	1.8000e-004	0.0231	6.0800e-003	1.7000e-004	6.2500e-003	0.0000	21.3028	21.3028	6.7000e-004	0.0000	21.3195
<b>Total</b>	<b>0.0101</b>	<b>8.0200e-003</b>	<b>0.0872</b>	<b>2.4000e-004</b>	<b>0.0229</b>	<b>1.8000e-004</b>	<b>0.0231</b>	<b>6.0800e-003</b>	<b>1.7000e-004</b>	<b>6.2500e-003</b>	<b>0.0000</b>	<b>21.3028</b>	<b>21.3028</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>21.3195</b>

#### 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	0.2056	2.3552	1.5542	3.3800e-003		0.0970	0.0970		0.0892	0.0892	0.0000	303.7960	303.7960	0.0961	0.0000	306.1989
<b>Total</b>	<b>0.2056</b>	<b>2.3552</b>	<b>1.5542</b>	<b>3.3800e-003</b>		<b>0.0970</b>	<b>0.0970</b>		<b>0.0892</b>	<b>0.0892</b>	<b>0.0000</b>	<b>303.7960</b>	<b>303.7960</b>	<b>0.0961</b>	<b>0.0000</b>	<b>306.1989</b>

### 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	0.0101	8.0200e-003	0.0872	2.4000e-004	0.0229	1.8000e-004	0.0231	6.0800e-003	1.7000e-004	6.2500e-003	0.0000	21.3028	21.3028	6.7000e-004	0.0000	21.3195
<b>Total</b>	<b>0.0101</b>	<b>8.0200e-003</b>	<b>0.0872</b>	<b>2.4000e-004</b>	<b>0.0229</b>	<b>1.8000e-004</b>	<b>0.0231</b>	<b>6.0800e-003</b>	<b>1.7000e-004</b>	<b>6.2500e-003</b>	<b>0.0000</b>	<b>21.3028</b>	<b>21.3028</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>21.3195</b>

### 3.8 Drainage/Utilities/Sub-grade - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1032	1.1548	0.8266	1.8200e-003		0.0469	0.0469		0.0432	0.0432	0.0000	160.1158	160.1158	0.0518	0.0000	161.4104
<b>Total</b>	<b>0.1032</b>	<b>1.1548</b>	<b>0.8266</b>	<b>1.8200e-003</b>		<b>0.0469</b>	<b>0.0469</b>		<b>0.0432</b>	<b>0.0432</b>	<b>0.0000</b>	<b>160.1158</b>	<b>160.1158</b>	<b>0.0518</b>	<b>0.0000</b>	<b>161.4104</b>

#### 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	5.0100e-003	3.8600e-003	0.0427	1.2000e-004	0.0123	1.0000e-004	0.0124	3.2800e-003	9.0000e-005	3.3700e-003	0.0000	11.1221	11.1221	3.2000e-004	0.0000	11.1301
<b>Total</b>	<b>5.0100e-003</b>	<b>3.8600e-003</b>	<b>0.0427</b>	<b>1.2000e-004</b>	<b>0.0123</b>	<b>1.0000e-004</b>	<b>0.0124</b>	<b>3.2800e-003</b>	<b>9.0000e-005</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>11.1221</b>	<b>11.1221</b>	<b>3.2000e-004</b>	<b>0.0000</b>	<b>11.1301</b>

### 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	0.1032	1.1548	0.8266	1.8200e-003		0.0469	0.0469		0.0432	0.0432	0.0000	160.1156	160.1156	0.0518	0.0000	161.4102
<b>Total</b>	<b>0.1032</b>	<b>1.1548</b>	<b>0.8266</b>	<b>1.8200e-003</b>		<b>0.0469</b>	<b>0.0469</b>		<b>0.0432</b>	<b>0.0432</b>	<b>0.0000</b>	<b>160.1156</b>	<b>160.1156</b>	<b>0.0518</b>	<b>0.0000</b>	<b>161.4102</b>

### 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	5.0100e-003	3.8600e-003	0.0427	1.2000e-004	0.0123	1.0000e-004	0.0124	3.2800e-003	9.0000e-005	3.3700e-003	0.0000	11.1221	11.1221	3.2000e-004	0.0000	11.1301
<b>Total</b>	<b>5.0100e-003</b>	<b>3.8600e-003</b>	<b>0.0427</b>	<b>1.2000e-004</b>	<b>0.0123</b>	<b>1.0000e-004</b>	<b>0.0124</b>	<b>3.2800e-003</b>	<b>9.0000e-005</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>11.1221</b>	<b>11.1221</b>	<b>3.2000e-004</b>	<b>0.0000</b>	<b>11.1301</b>

OCSD Plant 2 Ocean Outfall System Rehabilitation - Operations - South Coast Air Basin, Annual

**OCSD Plant 2 Ocean Outfall System Rehabilitation - Operations**  
**South Coast Air Basin, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	10.94	1000sqft	0.25	10,935.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2019
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	702.44	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use -

Energy Use - Building would not be temperature controlled.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	NT24NG	6.86	0.00
tblEnergyUse	T24NG	14.11	0.00
tblProjectCharacteristics	OperationalYear	2018	2019

## 2.0 Emissions Summary

### 2.2 Overall Operational

#### Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0446	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.7000e-004	2.7000e-004	0.0000	0.0000	2.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	30.0332	30.0332	1.2400e-003	2.6000e-004	30.1406
Mobile	6.9600e-003	0.0394	0.1053	3.5000e-004	0.0276	4.0000e-004	0.0280	7.3900e-003	3.8000e-004	7.7700e-003	0.0000	31.9743	31.9743	1.6600e-003	0.0000	32.0159
Waste						0.0000	0.0000		0.0000	0.0000	2.7546	0.0000	2.7546	0.1628	0.0000	6.8244
Water						0.0000	0.0000		0.0000	0.0000	0.8026	10.4959	11.2985	0.0829	2.0400e-003	13.9770
<b>Total</b>	<b>0.0516</b>	<b>0.0394</b>	<b>0.1054</b>	<b>3.5000e-004</b>	<b>0.0276</b>	<b>4.0000e-004</b>	<b>0.0280</b>	<b>7.3900e-003</b>	<b>3.8000e-004</b>	<b>7.7700e-003</b>	<b>3.5572</b>	<b>72.5036</b>	<b>76.0608</b>	<b>0.2486</b>	<b>2.3000e-003</b>	<b>82.9581</b>

#### Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0446	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.7000e-004	2.7000e-004	0.0000	0.0000	2.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	30.0332	30.0332	1.2400e-003	2.6000e-004	30.1406
Mobile	6.9600e-003	0.0394	0.1053	3.5000e-004	0.0276	4.0000e-004	0.0280	7.3900e-003	3.8000e-004	7.7700e-003	0.0000	31.9743	31.9743	1.6600e-003	0.0000	32.0159
Waste						0.0000	0.0000		0.0000	0.0000	2.7546	0.0000	2.7546	0.1628	0.0000	6.8244
Water						0.0000	0.0000		0.0000	0.0000	0.8026	10.4959	11.2985	0.0829	2.0400e-003	13.9770
<b>Total</b>	<b>0.0516</b>	<b>0.0394</b>	<b>0.1054</b>	<b>3.5000e-004</b>	<b>0.0276</b>	<b>4.0000e-004</b>	<b>0.0280</b>	<b>7.3900e-003</b>	<b>3.8000e-004</b>	<b>7.7700e-003</b>	<b>3.5572</b>	<b>72.5036</b>	<b>76.0608</b>	<b>0.2486</b>	<b>2.3000e-003</b>	<b>82.9581</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.9600e-003	0.0394	0.1053	3.5000e-004	0.0276	4.0000e-004	0.0280	7.3900e-003	3.8000e-004	7.7700e-003	0.0000	31.9743	31.9743	1.6600e-003	0.0000	32.0159
Unmitigated	6.9600e-003	0.0394	0.1053	3.5000e-004	0.0276	4.0000e-004	0.0280	7.3900e-003	3.8000e-004	7.7700e-003	0.0000	31.9743	31.9743	1.6600e-003	0.0000	32.0159

### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	16.40	16.40	16.40	72,635	72,635
Total	16.40	16.40	16.40	72,635	72,635

### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.548893	0.044275	0.199565	0.124385	0.017503	0.005874	0.020174	0.028962	0.001990	0.002015	0.004673	0.000702	0.000989



**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	94259.7	30.0332	1.2400e-003	2.6000e-004	30.1406
<b>Total</b>		<b>30.0332</b>	<b>1.2400e-003</b>	<b>2.6000e-004</b>	<b>30.1406</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	94259.7	30.0332	1.2400e-003	2.6000e-004	30.1406
<b>Total</b>		<b>30.0332</b>	<b>1.2400e-003</b>	<b>2.6000e-004</b>	<b>30.1406</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0446	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.7000e-004	2.7000e-004	0.0000	0.0000	2.9000e-004
Unmitigated	0.0446	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.7000e-004	2.7000e-004	0.0000	0.0000	2.9000e-004

### 6.2 Area by SubCategory

#### Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.0700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0395					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.7000e-004	2.7000e-004	0.0000	0.0000	2.9000e-004
<b>Total</b>	<b>0.0446</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.9000e-004</b>

#### Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.0700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0395					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.7000e-004	2.7000e-004	0.0000	0.0000	2.9000e-004
<b>Total</b>	<b>0.0446</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.9000e-004</b>

## 7.0 Water Detail

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### 7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.2985	0.0829	2.0400e-003	13.9770
Unmitigated	11.2985	0.0829	2.0400e-003	13.9770

### 7.2 Water by Land Use

#### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	2.52988 / 0	11.2985	0.0829	2.0400e-003	13.9770
<b>Total</b>		<b>11.2985</b>	<b>0.0829</b>	<b>2.0400e-003</b>	<b>13.9770</b>

#### Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	2.52988 / 0	11.2985	0.0829	2.0400e-003	13.9770
<b>Total</b>		<b>11.2985</b>	<b>0.0829</b>	<b>2.0400e-003</b>	<b>13.9770</b>

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

#### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.7546	0.1628	0.0000	6.8244
Unmitigated	2.7546	0.1628	0.0000	6.8244

### 8.2 Waste by Land Use

#### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	13.57	2.7546	0.1628	0.0000	6.8244
<b>Total</b>		<b>2.7546</b>	<b>0.1628</b>	<b>0.0000</b>	<b>6.8244</b>

#### Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	13.57	2.7546	0.1628	0.0000	6.8244
<b>Total</b>		<b>2.7546</b>	<b>0.1628</b>	<b>0.0000</b>	<b>6.8244</b>