SUNNYVALE WATER POLLUTION CONTROL PLANT MASTER PLAN – SECONDARY TREATMENT AND DEWATERING FACILITIES PROJECT

Addendum to the Program Environmental Impact Report

Prepared for
City of Sunnyvale

December 2020

ESA

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CHAPTER 1
Background and Purpose of the Addendum

1.1 Background

The City of Sunnyvale (City) owns and operates the Donald M. Somers Water Pollution Control Plant (WPCP), located at 1444 Borregas Avenue in Sunnyvale, Santa Clara County (see **Figure 1**). The WPCP provides treatment of wastewater flows and loads from domestic, commercial, and industrial sources in Sunnyvale, Rancho Rinconada, and Moffett Field. The WPCP includes an approximately 16.6-acre main plant and two oxidation ponds[1] that occupy about 436 acres in total (see **Figure 2**). The WPCP was originally constructed in 1956. With the enactment of the Clean Water Act in 1972, more restrictive water quality standards were established, leading to expansion of and process upgrades to the WPCP. Currently, the WPCP processes about 13.5 million gallons per day (mgd) on an annual basis. The surrounding dry land area is primarily used for industrial and recreation purposes: the Sunnyvale Materials Recovery and Transfer Station (SMaRT Station) and the former Household Hazardous Waste Drop-off Site ("Recycle Yard") on Carl Road abut the main plant to the east and south, respectively; the closed Sunnyvale Landfill (traversed by numerous trails) borders these facilities. The Sunnyvale West Channel forms the main plant's western boundary; the Sunnyvale East Channel borders the landfill further east. Caribbean Drive runs east-west along the southern edge of the Sunnyvale Landfill. The San Francisco Bay Trail borders the WPCP to the west and north, and an existing entrance to the Bay Trail and a parking area are located at the west end of Carl Road.[2]

The City was the lead agency for the Sunnyvale Water Pollution Control Plant Master Plan Program Environmental Impact Report (PEIR) (State Clearinghouse No. 2015062037).[3] The City adopted the PEIR for the WPCP Master Plan and approved implementation of the WPCP Master Plan on August 23, 2016. The PEIR evaluated potential environmental impacts that could occur as a result of implementing the Master Plan, and provided applicable mitigation to reduce the intensity of potential environmental impacts. As part of Master Plan approval, the City adopted a Mitigation Monitoring and Reporting Program.

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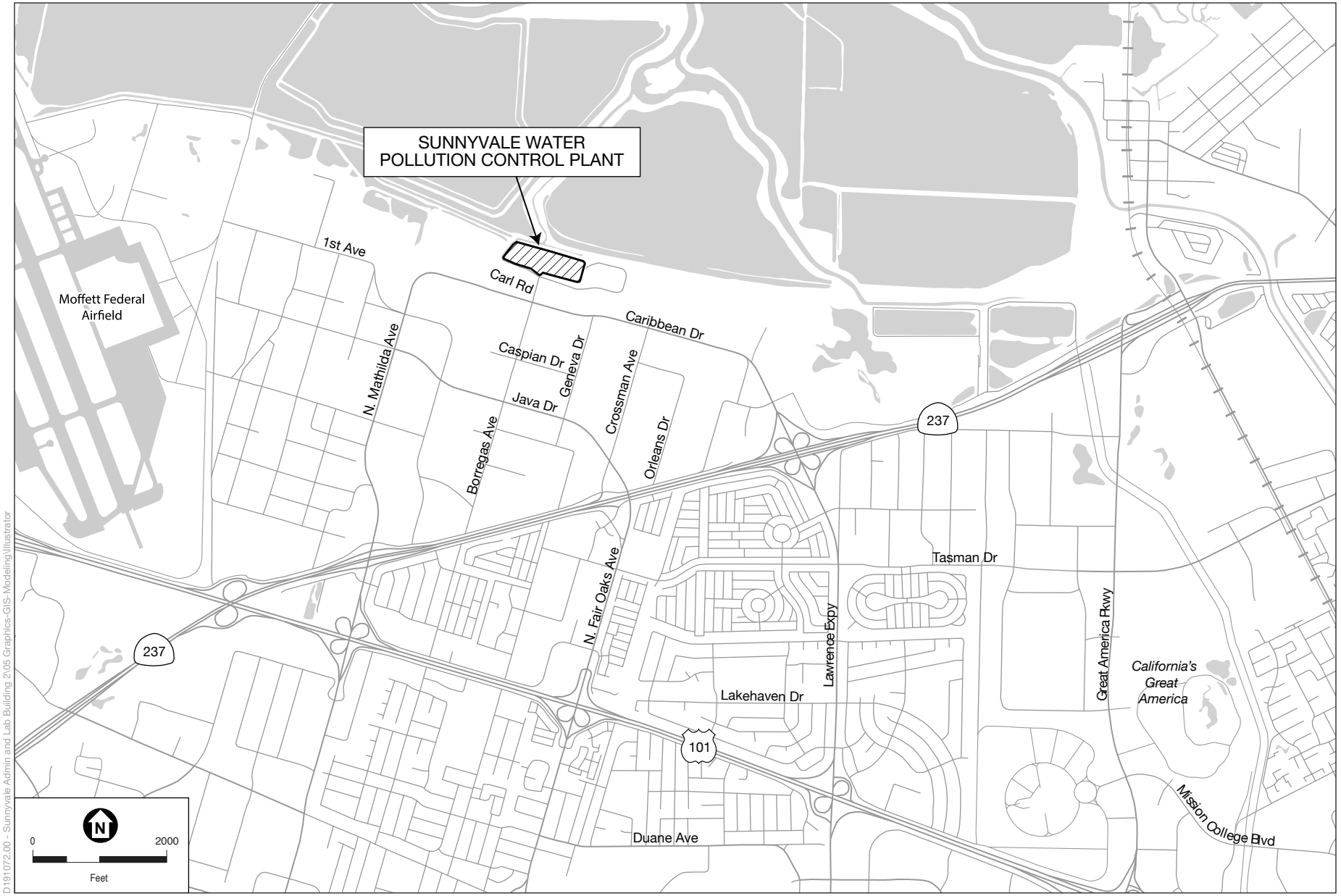
1 The oxidation ponds provide biological oxidation of soluble organic material and physical removal of suspended solids that remain in the wastewater after primary clarification. The ponds also play an important role in the conversion of ammonia to nitrate for 2-3 months during the summer. Their large storage capacity provides a means for equalizing the flow of wastewater to the downstream unit processes, and for storing water to allow reduced (or zero) flow rate to the downstream processes for maintenance or other purposes.

2 As part of a separate Master Plan project, the Bay Trail trailhead and parking will be relocated to Caribbean Drive.

3 City of Sunnyvale, Sunnyvale Water Pollution Control Plant Master Plan Program Environmental Impact Report, adopted August 23, 2016. The PEIR can be accessed online at http://www.sunnyvalecleanwater.com/program-environmental-impact-report.



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SOURCE: Thomas Brothers; ESA

Sunnyvale Secondary Treatment and Dewatering Facilities

Figure 1
Site Location Map

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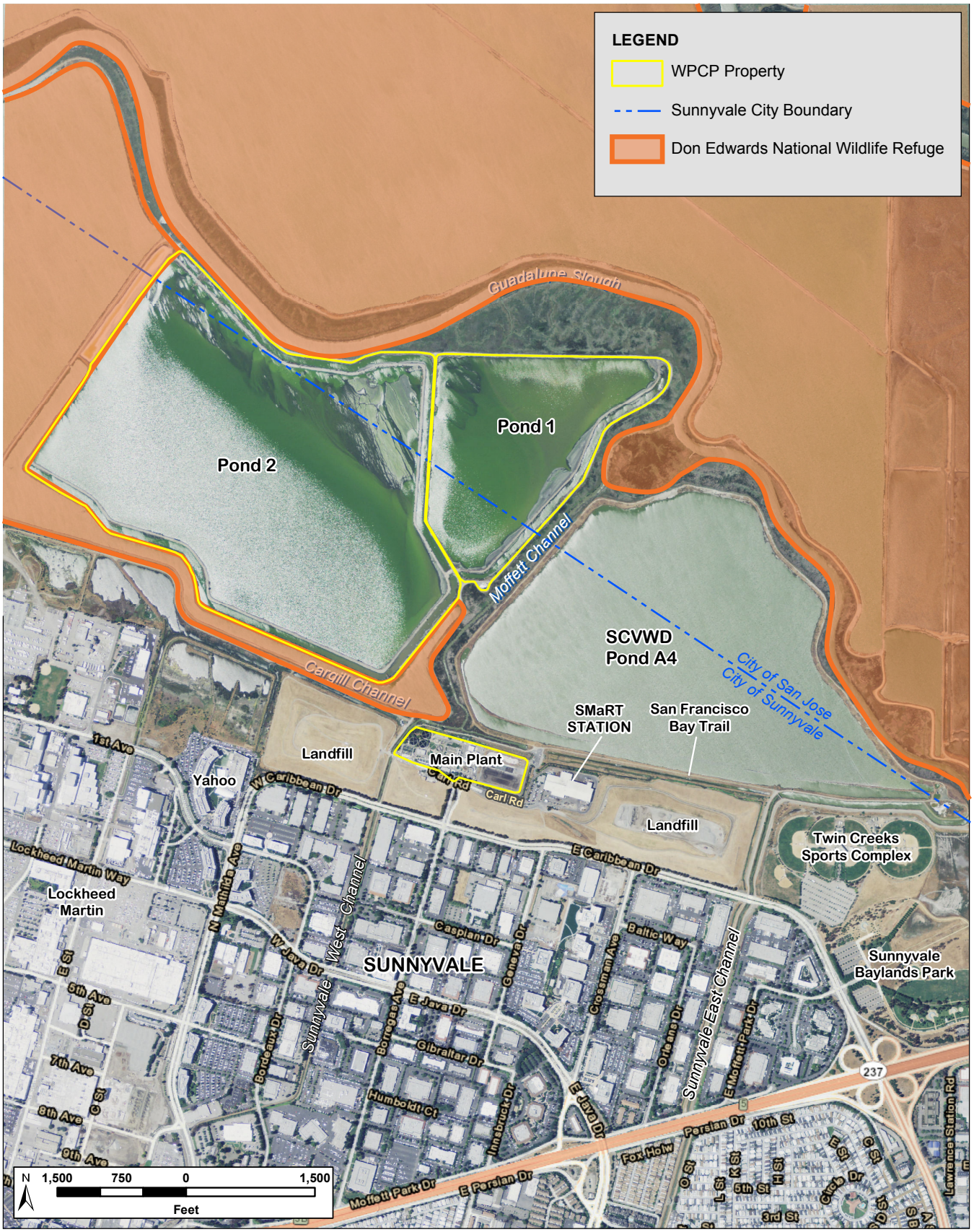

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SOURCE: H.T. Harvey & Associates; adapted by ESA

Sunnyvale Secondary Treatment and Dewatering Facilities

Figure 2
Sunnyvale Water Pollution Control Plant Area Map

ESA

Subsequent to adoption of the PEIR, projects included in the Master Plan have undergone further development. Chapter 2 of this document presents a description of the Secondary Treatment and Dewatering Facilities project (project). Chapter 3 presents an evaluation of the environmental impacts of the project as currently developed in comparison to the impacts disclosed in the PEIR. Chapter 4 summarizes the findings of the evaluation presented in Chapter 3. Chapter 5 contains mitigation measures from the approved Master Plan Mitigation Monitoring and Reporting Program.

1.2 Purpose of This Addendum

The CEQA Guidelines (Sections 15162 and 15164) allow that a lead agency may prepare an addendum to a previously certified EIR if some changes or additions to the environmental evaluation are necessary, but none of the following occurs:

1. Substantial changes are proposed in the project which will require major revisions to the EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was adopted, shows any of the following:
    a. The project will have one or more significant effects not discussed in the EIR;
    b. Significant effects previously examined will be substantially more severe than shown;
    c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
    d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

This Addendum documents that the Secondary Treatment and Dewatering Facilities project as modified subsequent to the Master Plan does not trigger any of the conditions described above.

CHAPTER 2
Project Description

2.1 Summary of Previously Approved Project

As part of the Master Plan process the City identified the need to replace the secondary treatment process to ensure continued reliable treatment and to help meet potential regulatory limits for nutrients (nitrogen and phosphorus). The Master Plan identified a conventional activated sludge[1] (CAS) process, to be phased in over multiple years, to eventually replace all existing secondary treatment facilities (including the oxidation ponds, fixed growth reactors, and air flotation tanks; shown in **Figure 3**). The City proposed to stage replacement of secondary treatment facilities by using a "Split Flow" configuration (Stage 1) prior to full conversion to conventional activated sludge treatment (Stage 2). During the first stage, the City would build a smaller conventional activated sludge facility (smaller than what would ultimately be needed to treat all flows through the plant) and continue to use the existing secondary treatment process to treat a portion of the flow, splitting the flow between the existing and new secondary treatment processes. These facilities as originally proposed were described on PEIR page 3-16.

Split Flow CAS Stage 1, as currently configured, is the project evaluated in this document.

2.2 Components of the Secondary Treatment and Dewatering Facilities

Following certification of the Master Plan PEIR and approval of the Master Plan, the City proceeded with design of the Secondary Treatment and Dewatering Facilities (the project). Further refinement of these facilities, which would be constructed within the plant fenceline, are summarized below in **Table 2-1**. Support facilities have been implemented in stages in concert with implementation of Master Plan projects; as a result, this project includes the second stages of the electrical and supervisory control and data acquisition (SCADA) systems. **Figure 4** illustrates the project site boundaries, the main plant fenceline, and construction staging outside of the main plant fenceline. Proposed facilities are shown on **Figure 5**. The capacity of the new facilities is consistent with the capacity described in the PEIR.

[1] Activated sludge treatment makes use of applied microbiology (using beneficial bacteria and protozoa) to degrade organic materials and remove nutrients from wastewater to produce a high-quality effluent. Blowers and pump stations are used to maintain mixed, aerobic conditions and to route flows where needed. At the end of the process, clarifiers are used to settle out the activated sludge microbes. Most settled sludge is recycled to sustain the process. Excess sludge is "wasted" and then anaerobically digested to produce methane-rich biogas and a biosolids product. The activated sludge process has been in use world-wide for over 100 years.

TABLE 2-1
SUMMARY OF SECONDARY TREATMENT AND DEWATERING FACILITIES PROJECT

Project Component	Master Plan Facilities Evaluated in PEIR	Proposed Facilities
Split Flow Conventional Activated Sludge Stage 1	• Two aeration basins	• Same, now called biological reactors or bioreactors, with sidestream ammonia treatment and similar footprint
	• Blower building and aeration blowers	• Same
	• Three secondary clarifiers located on west side of main plant site	• Four smaller secondary clarifiers on the east side of main plant site
	• Two combined return activated sludge/waste activated sludge pump stations	• One return activated sludge pump station and one waste activated sludge pump station
	• Primary effluent distribution structure	• Same
Thickening and Dewatering Facility	• Thickening and Dewatering Building and equipment, maximum height of 50 feet above grade	• Same, maximum height of 55 feet above grade
	• Digested sludge storage tank	• Same, with piping upgrades including sludge blend tank
	• Cake storage and truck loading facility (Cake Loading)	• Same
	• Odor control system (with bioscrubber)	• Same
	• Polymer storage and feed systems	• Same
12 kilovolt (kV) Electrical Distribution System (Stage 2)	Stage 2 to be implemented with secondary treatment improvements	Same
Digester Supernatant Pump Station and Drainage Piping	Repairs to these facilities were previously planned as a separate project in PEIR	Structural, piping, and related repairs to pump station and drainage piping
Standby Generator and Fuel Tank	Diesel powered (2.5 megawatt [MW])	Diesel powered (2 MW)

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SOURCE: ESA; Base Map Google Earth

Sunnyvale WPCP Secondary Treatment and Dewatering Facilities

Figure 3
Existing WPCP Process Areas

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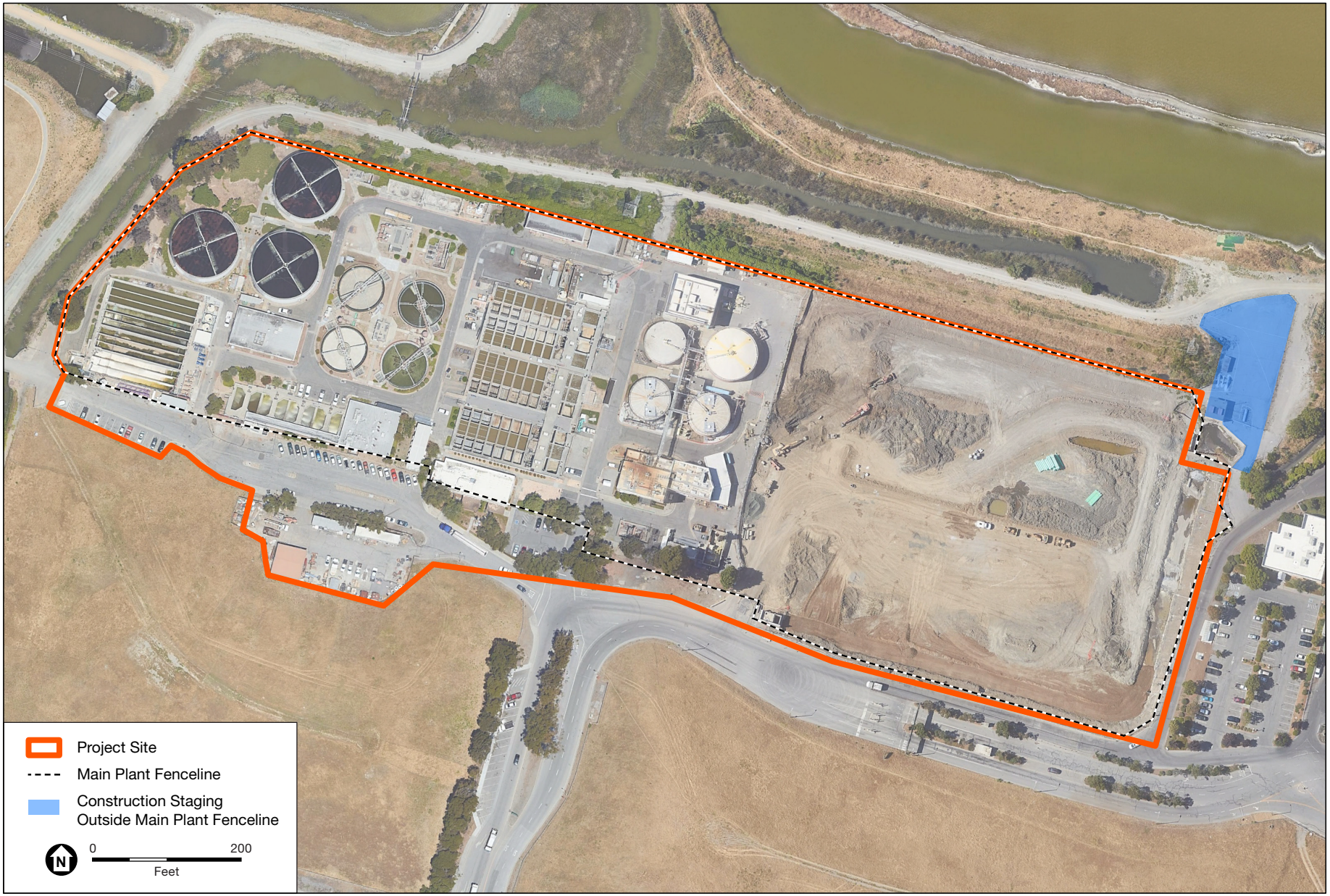

SOURCE: ESA, 2018; Base Map - Google Earth

Sunnyvale Secondary Treatment and Dewatering Facilities

Figure 4
Project Area

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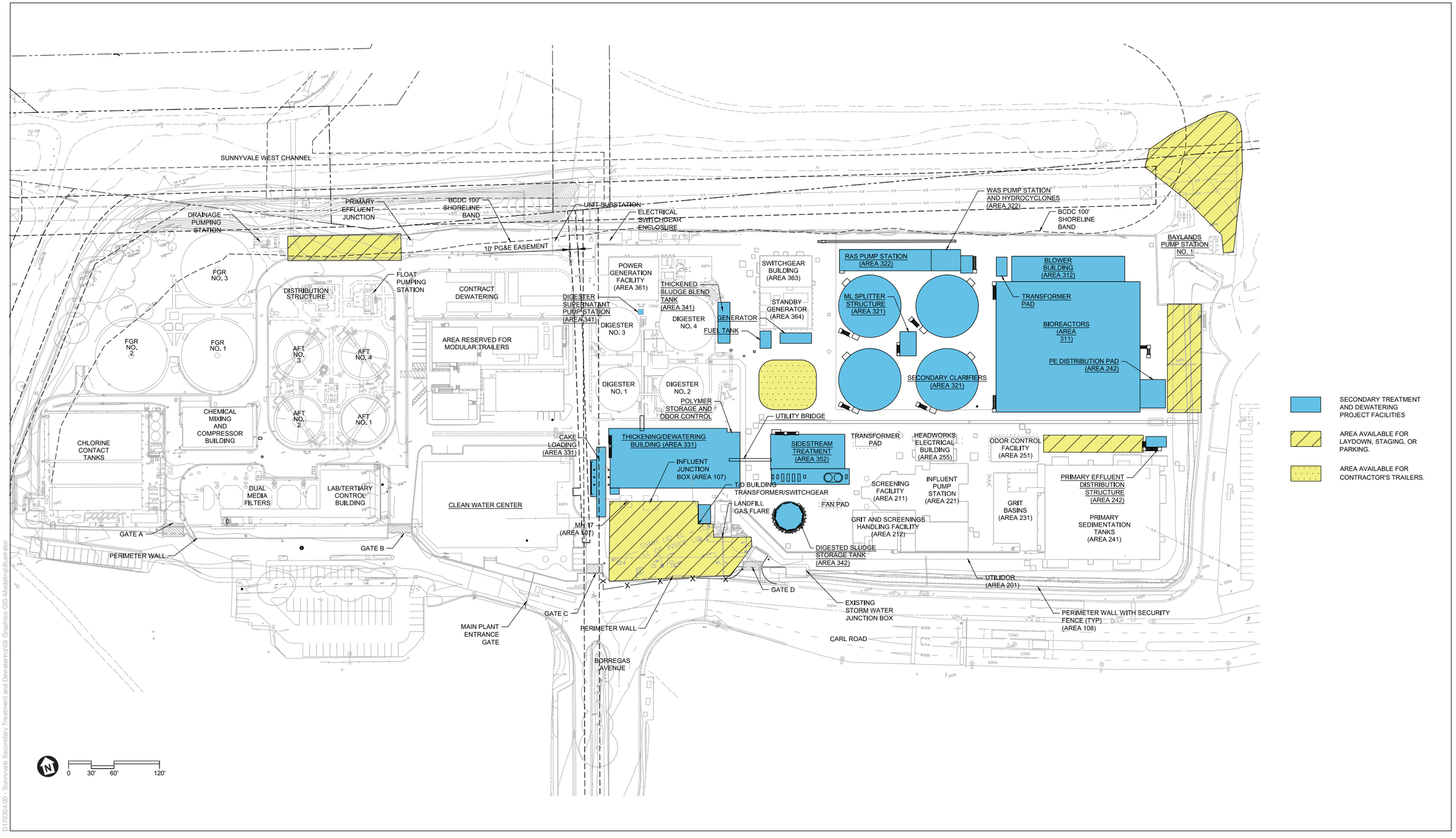

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SOURCE: Carollo, 2018

Sunnyvale Secondary Treatment and Dewatering Facilities

Figure 5
Proposed Secondary Treatment and Dewatering Project

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Split Flow Conventional Activated Sludge Stage 1

Flow would be split between the existing secondary treatment process at the WPCP (oxidation ponds, fixed growth reactors, and air flotation tanks) and the conventional activated sludge (CAS) system proposed in this project. These facilities would include the following components:

- Aeration basins (biological reactors)
- Sidestream nitrogen removal facilities
- Aeration blower building and blowers
- Secondary clarifiers
- Return activated sludge and waste activated sludge pumping
- Mixed liquor splitter structure and primary effluent distribution structure

As summarized in Table 2-1, the current project includes four smaller secondary clarifiers instead of three compared with the PEIR project. The CAS process will be configured as a Modified Ludzack Ettinger (MLE) process.[2] The project also includes deammonification[3] as a sidestream nitrogen removal process. The sidestream treatment facility would be located near the Thickening and Dewatering Facility. The aeration basins and secondary clarifiers would be uncovered and located on the eastern side of the main plant site. The tallest structure associated with these facilities would reach approximately 35 feet above ground elevation.

Thickening and Dewatering Facility Stage 1

The Thickening and Dewatering Facility would thicken the secondary sludge produced by the new secondary treatment improvements along with the existing primary sludge produced by the existing primary treatment facilities, and dewater digested biosolids produced by the anaerobic digestion process. The components of this facility would include:

- Building to house equipment
- Sludge feed tanks, mixing pumps, and thickening feed pumps
- Thickening equipment
- Thickened waste activated sludge pumps
- Thickening polymer storage and feed system
- Sludge blend tank, mixing pumps, and digester feed pumps
- Digester sludge feed piping upgrades
- Digested sludge storage tank and mixing pumps, and dewatering feed pumps
- Dewatering equipment
- Cake pumps

[2] The MLE process configuration is one of many activated sludge basin designs. This configuration was established in 1962 and includes an anoxic zone (unaerated but mixed) at the beginning end of the tank to optimize nitrogen removal.

[3] Deammonification is a two-step biological process where ammonia-oxidizing bacteria aerobically convert half of the ammonia present in the wastewater to nitrite. In the second step, anammox bacteria oxidize the ammonia using nitrite to produce nitrogen gas without the organic carbon substrate required for conventional heterotrophic denitrification. Deammonification requires significantly less oxygen and so less energy is needed for nitrogen removal.

- Thickening and dewatering filtrate return pump station and piping
- Dewatering polymer storage and feed system
- Cake storage hopper and truck loading facility (cake loading)
- Odor control system with bioscrubber

As summarized in Table 2-1, these facilities would generally be the same as the thickening and dewatering facilities described in the PEIR (PEIR pages 3-24 and 3-25). The maximum height of these structures would be 55 feet above grade, approximately five feet taller than the relevant structures evaluated in the PEIR. All components would be in the vicinity of the Thickening and Dewatering Building. Polymer storage, cake loading, and odor control facilities would be covered or contained and located adjacent to the thickening and dewatering building. Some of the thickening and dewatering feed and mixing pumps would be located next to the sidestream treatment facility. The sludge blend tank would be located next to the digesters and the digested sludge storage tank would be a separate covered structure. Yard piping would be upgraded to connect the new facilities to the existing WPCP facilities.

Support Facilities

Electrical Distribution System and Combined Heat and Power

Stage 2 of the 12 kV electrical distribution system would extend the 12kV primary power to all remaining facilities at the WPCP.

A 2 megawatt (MW) standby generator would be installed to provide full backup power for the anticipated electrical loads at the WPCP. This generator would run on diesel and would only be used in an emergency when utility power is not available, and during routine monthly maintenance (up to 50 hours per year). The generator would not be used in normal operations.

Advanced Control Systems Improvements – Stage 2

The WPCP fiber optic duct banks would be expanded to remaining facilities at the WPCP, including a 72 strand single-mode fiber optics cable installed in a loop and communications cabinets. Computer programming would be conducted to migrate network connectivity of the existing equipment over to the new controls system. No new structures would be constructed for these improvements.

Digester Supernatant Pump Station and Drainage Piping

Several components of the existing pump station and drainage piping would be rehabilitated. No new structures would be constructed for these improvements. The project includes repair of concrete within the supernatant pump station, replacement of the digester supernatant pumps, and repair of portions of drainage piping from the digesters to the supernatant pump station.

2.3 Construction

Schedule and Workforce

Project construction would last approximately 3 years. Initial construction activities include earthwork excavations, site work, and process yard piping, and would extend for approximately 1 year between July 2022 and July 2023. Subsequently, the facility construction, including foundations for structures, concrete work, process yard piping, mechanical, and electrical work, would occur from approximately July 2023 through July 2025.

On average, approximately 130 construction personnel would be onsite daily. At peak construction, up to 230 construction personnel may be onsite each day. Project construction would occur primarily within normal City working hours, weekdays between the hours of 7:00 a.m. and 6:00 p.m., and, as necessary, Saturdays between 8:00 a.m. and 5:00 p.m.[4]

Equipment

Heavy equipment that would be used for construction of this project includes the following. equipment (the estimated usage of which is documented in **Appendix A**).

- Excavator
- Grader
- Haul trucks
- Dozer/Loader
- Roller
- Paving equipment
- Concrete trucks
- Water trucks
- Crawler cranes and rough terrain cranes

Access and Staging

Construction activities would generally occur within the main plant. Construction staging areas include two areas outside of the Master Plan area identified on PEIR Figure 3-3. One area is within the main plant fenceline, west of the SMaRT Station. The other is an existing paved and fenced staging area currently used by the city for other staging activities to the northeast of the main plant fenceline, adjacent to the San Francisco Bay Trail. In this area no new ground disturbance or vegetation removal would be required. Construction vehicles would access the main plant via Borregas Avenue and Carl Road. Figure 5 illustrates potential construction staging areas and site access.

Earthwork and Site Work for Structures

Initial steps of site work include sheeting and shoring for the excavation of the main structures. The maximum depth of excavation during construction would be approximately 22 feet deep. Following placement of shoring, the areas for these structures would be excavated. Some of the excavated material would be stockpiled for backfill, while most would be offhauled. This phase

[4] Sunnyvale Municipal Code Section 16.08.030 normally limits construction activity to these hours.

also includes the import of stone base material for preparation of the foundations. Average daily construction truck trips would reach a peak of 140 one-way trips during these activities.

Facility Construction

After initial earthwork is complete, concrete slabs and walls for the major structures would be installed. Although it is anticipated that concrete slab foundations would be used for most structures, auger cast piles for structural foundation improvements would also be needed for some structures based on the results of geotechnical investigations. Auger cast piles would extend to approximately 90 feet below ground surface. Subsequent construction activities include construction of associated mechanical, structural, and electrical facilities. This phase includes excavation throughout the site for yard piping and electrical duct banks. Support utilities would also be installed. After structures and piping are complete, the site would be paved.

2.4 Operations

As described in PEIR Section 3.4.3, page 3-16, the proposed secondary treatment and dewatering facilities would operate in parallel with the existing secondary treatment system (e.g., Ponds 1 and 2, fixed growth reactors, and air flotation tanks). Primary effluent would be split between the project facilities and Ponds 1 and 2, using an operations approach called "split flow mode." WPCP operators would maintain flow to the oxidation ponds to meet the process needs of that system. Once the project is complete, the WPCP would operate under "split flow mode" for about 10 years. Eventually the City plans to fully replace the existing secondary treatment process by the end of the Master Plan period (approximately 2035). The City would determine the need for supplemental CEQA documentation on the full transition to CAS once conceptual design of CAS Stage 2 is complete.

The new facilities in this project would increase the power demands at the WPCP. Primary power for the proposed facilities would be supplied by the power generation facility[5] at the WPCP as well as Pacific Gas & Electric (PG&E) and Silicon Valley Clean Energy (SVCE)[6] via a new switchgear building being constructed as part of another project. Along with other projects at the WPCP, the overall WPCP's demand would exceed the capacity of the power generation facility once the project is operational. The project facilities would require an additional average load of approximately 1,000 kilowatts. All of the electrical demand for the facilities proposed in this project would be met by increased PG&E and SVCE supply.

No new staff would be needed to operate the new facilities. The work force would remain at 34 operations and maintenance staff. Operations of the project would require approximately 42 chemical deliveries per month and 19 residuals hauling trucks per week.

5 The power generation facility is an onsite cogeneration facility that runs on digester gas, landfill gas, and natural gas.

6 PG&E is responsible for delivering electricity, while SVCE is responsible for securing electricity supply and determining supply portfolio. Currently, the City's electricity accounts use SVCE's "GreenPrime" option, which provides 100% renewable energy.

2.5 Required Actions and Approvals

The following actions and approvals may be required in the future by agencies with discretionary authority over specific aspects of the proposed project:

- **Bay Area Air Quality Management District:** Authority to Construct and Permit to Operate

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CHAPTER 3
Evaluation of Environmental Impacts

The evaluations in the Program Environmental Impact Report (PEIR) were revisited to determine whether any changes to the analyses were warranted based on refinements to the Secondary Treatment and Dewatering Facilities project (project). This chapter describes any changes that have occurred in the existing environmental conditions within and near the project area as well as environmental impacts associated with the project. The analysis includes consideration of the mitigation measures adopted for the Master Plan as part of the Mitigation Monitoring and Reporting Program (MMRP). Chapter 5, *Mitigation Monitoring and Reporting Program,* contains all of the mitigation measures from the adopted MMRP that apply to the project.

The PEIR evaluated impacts of combinations of individual improvements as they were expected to progress at the time of PEIR preparation. The phasing for the Master Plan improvements has changed as design progressed for individual improvements. Project construction is expected to overlap with construction of the Cleanwater Center project and Existing WPCP Rehabilitation projects at the WPCP. Project construction may also overlap with the SCVWD East-West Channels Flood Protection Project (which would provide flood protection to homes, businesses, schools, and highways to avoid transportation shutdowns and prevent potential damages) and the Google Caribbean Campus Project (which would demolish existing buildings, surface parking lots, and vegetation and construct two new five-story office buildings in the same location). Where relevant, cumulative impacts of this scenario are discussed.

The topics listed below were sufficiently addressed in the PEIR and required no additional analysis because either the nature, scale, and timing of the project has not changed in ways relevant to the topic or there has not been a substantial change in the circumstances involving the topic on the project site, nor in the local environment surrounding the site.

- **Agriculture and Forestry Resources**. The state and local land use and zoning designations with respect to agricultural and forest resources have not changed for the site and surroundings, and agricultural or forest use of the site has not commenced since adoption of the PEIR. Thus there has not been a substantial change in the circumstances involving agricultural and forest resources at the site or surrounding areas.

- **Biological Resources.** Habitat in the project area has not changed since adoption of the PEIR. The locations of ground disturbance have not changed in ways relevant to biological resources. The project would use an existing construction staging area outside of the Master Plan area; however, no ground disturbance or vegetation removal would be required in order to use the construction staging area. The state and local plan designations relevant to biological resources within and surrounding the project site have not changed. Applicable mitigation measures are included in Chapter 5.

- **Cultural Resources.** The locations of ground disturbance have not changed in ways relevant to historical, archeological, and paleontological resources at the site or surrounding areas. Applicable mitigation measures are included in Chapter 5.

- **Energy Conservation**. The construction and operation equipment and activities proposed for the project would be similar to that evaluated in the PEIR. The increased electrical demand from PG&E and SCVE for this project is within the demand estimated for Master Plan projects in the PEIR (3,100 kW). Two other Master Plan projects, the Caribbean Drive Parking and Trail Access Enhancements Project and Site Preparation and Existing Plant Rehabilitation Project, have sufficiently progressed through design to establish whether they would increase electrical demand. The Caribbean Drive Parking and Trail Access Enhancements Project would not require electricity during operations, and the Site Preparation and Existing Plant Rehabilitation Project's electrical demand would be within the demand estimated for Master Plan projects in the PEIR.

- **Geology, Soils, Seismicity, and Mineral Resources**. The nature, scale, and timing of the project have not changed in a manner that would exacerbate existing geologic and seismic hazards at the project site. The state and local land use and zoning designations with respect to mineral resources have not changed for the site and surroundings.

- **Hazards and Hazardous Materials**. The locations of ground disturbance have not changed in ways relevant to hazards and hazardous materials at the site or surrounding areas. Applicable mitigation measures are included in Chapter 5.

- **Land Use and Recreation**. The state and local land use plans, policies, and regulations applicable at the site have not changed since adoption of the PEIR, and the character of the project would remain industrial.

- **Noise and Vibration**. As described in Chapter 2, the project would not involve construction activity outside of the hours of 7:00 a.m. to 6:00 p.m. The nearest residences to the project site are approximately 0.8 miles away and separated from the area by the intervening commercial and industrial land uses and State Route 237. No new receptors closer than those identified in the PEIR occur in the vicinity of the project site. The types of equipment and number of construction activities occurring concurrently would be similar to those evaluated in the PEIR for other Master Plan projects. The project does not include sources of noise during operations that were not evaluated in the PEIR.

- **Population and Housing**. The project does not alter the effect of the Master Plan on treatment capacity (indirectly inducing population growth) and the types of equipment and number of construction activities occurring concurrently would be similar to that evaluated in the PEIR.

- **Public Services and Facilities**. The nature of the project with respect to population growth and impairment of achieving service performance objectives has not changed.

- **Utilities and Service Systems**. The nature of the project with respect to wastewater collection and treatment, water use, and solid waste disposal has not changed.

- **Mandatory Findings of Significance**. For the reasons identified above, the cultural resources and hazardous materials effects of the project are adequately addressed in the PEIR. One additional project (resurfacing the San Francisco Bay Trail within the City of Sunnyvale

and neighboring areas) that was not identified in the PEIR occurred in the vicinity of the project, another project not identified in the PEIR may be under construction concurrently with the project, and the schedule of the Sunnyvale East-West Channels project has shifted into the future; these changes in the cumulative scenario would not alter the cumulative impact conclusions of the PEIR beyond the discussions included in this addendum. The effects of the project on human beings are adequately addressed in the PEIR except for Transportation, Air Quality, Greenhouse Gas Emissions, Hydrology and Water Quality, and Aesthetics impacts, which are discussed in this addendum.

Changes and additions to the PEIR discussion of the remaining topics are included below, pursuant to CEQA *Guidelines* Section 15164. The following discussion describes the environmental impacts of the project as compared to the impacts of the approved Master Plan as addressed in the PEIR adopted August 23, 2016. These additions do not reflect involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; for these reasons, a subsequent EIR was not prepared.

3.1 Transportation

Issues (and Supporting Information Sources):	*Potentially Significant Effects Not Identified in Prior EIR*	*Potentially Substantial Increase in Severity of Significant Impact Identified in Prior EIR*	*Sponsor Declines to Adopt Feasible Mitigation Measures or Alternatives*	*No New or More Severe Significant Effects*
TRANSPORTATION — Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Setting

The environmental setting relevant to Transportation for the project has not changed relative to the setting in the PEIR. Existing traffic patterns, the transit network, and alternative transportation facilities have not changed since adoption of the PEIR. Setting discussions from the adopted PEIR for this resource are therefore applicable to the entire project area.

With respect to Issue b), the PEIR did not evaluate consistency with CEQA Guidelines Section 15064.3, Subdivision (b), as that issue was introduced as part of the December 2018 update to the CEQA Guidelines, which occurred after the PEIR was certified. Pursuant to Section 15064.3, Subdivision (b) and SB 743, the City of Sunnyvale adopted Policy 1.2.8 (Transportation Analysis Policy) on June 30, 2020, transitioning from using delay and level-of-service (LOS) to measure transportation impacts to using vehicle miles traveled (VMT). For purposes of comparison with the PEIR, this addendum uses automobile delay for discussion and analysis though VMT remains the measure used to determine the significance of a traffic impact in accordance with the CEQA Guidelines.

Findings of Previously Adopted PEIR

The adopted PEIR determined that all project impacts related to transportation would be less than significant or less than significant with mitigation. Chapter 5, *Mitigation Monitoring and Reporting Program*, reproduces adopted mitigation measures applicable to transportation impacts from this project.

Discussion

Since certification of the PEIR, details of the project's use of the transportation system have changed. The following discussion evaluates whether project changes would result in any new or more severe significant environmental effects than identified in the PEIR.

Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities

Local and Regional Roadways

As described in the PEIR, the Master Plan would result in a peak of 564 one-way truck trips and 84 one-way construction worker vehicle trips per day during construction. The project would generate a maximum of 140 one-way truck trips per day during construction. The approximately 130 construction workers that would be onsite daily would likely commute to and from the work site during peak hours. Truck trips and construction worker trips that would coincide with peak-hour traffic could impede traffic flow on local roadways, a potentially significant impact. With implementation of adopted Mitigation Measures TR-1a and TR-1b, this impact would be reduced to less-than-significant levels, and the impact would not be more severe than that identified in the approved PEIR. No new staff would be needed to operate the new facilities, and there would therefore be no operational impacts.

Transit, Bicycle, and Pedestrian Facilities

The project would not directly or indirectly eliminate alternative transportation corridors or facilities, nor would it include changes in adopted policies, plans, or programs that support alternative transportation. No new or more severe environmental impacts related to alternative transportation facilities would result from project implementation.

Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)

As discussed above in *Setting*, the PEIR did not evaluate this issue, as the issue was introduced as part of the December 2018 update to the current CEQA *Guidelines*, which occurred after the PEIR was certified. Section 15064.3 of the CEQA *Guidelines* suggests that the analysis of VMT impacts applies mainly to land use and transportation projects. The City of Sunnyvale's Policy 1.2.8 (Transportation Analysis Policy) states that projects that generate or attract fewer than 110 operational trips per day would meet the Small Infill Projects exemption, meaning that the project would be exempt from further consideration with respect to VMT and impacts are assumed to be less than significant (City of Sunnyvale, 2020a). Furthermore, impacts due to construction activities would be temporary and would not result in any meaningful long-term or permanent change in VMT. Per this statewide and local guidance, since the project is neither a land use nor a transportation project and meets the Small Infill Projects exemption, it can be assumed to have a less than significant impact with respect to VMT.

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

During construction, while the number of haul trucks would be substantially lower than evaluated in the PEIR, traffic safety hazards could occur due to increased truck traffic with associated slower speeds and wider turning radii and where delivery and haul trucks share the roadway with other vehicles, the same impact as discussed in the PEIR. With implementation of adopted Mitigation Measure TR-1b, the impact of these potential construction traffic safety hazards would be less than significant with mitigation. There would be no change to lane or roadway configuration as part of the project; therefore, the operational effects of the project would be the same as those identified in the PEIR (less than significant). No new or more severe environmental impacts related to traffic safety would result from project implementation.

Result in inadequate emergency access

The project would not result in new or more severe adverse impacts related to emergency access because the project would not alter access to facilities served by emergency vehicles and personnel. The project does not include design features that would either impede or restrict emergency vehicle access. No new or more severe environmental impacts related to emergency access would result from project implementation.

Cumulative Transportation Impacts During Construction

At the time of PEIR preparation, details typically used to determine cumulative transportation effects were not known. The PEIR estimated cumulative transportation effects by assuming a worst-case scenario in which construction peak periods overlap for most of the projects identified in the PEIR cumulative scenario (listed in PEIR Table 6-1). Project construction would overlap with construction of the Cleanwater Center project and Existing WPCP Rehabilitation projects at the WPCP. Project construction may also overlap with construction of the SCVWD East-West Channels Flood Protection Project and the Google Caribbean Campus Project. It is possible that service levels along Caribbean Drive could be temporarily degraded by construction activity. With implementation of adopted Mitigation Measure C-TR-1, Implement Coordinated Transportation Management Plan, the project's contribution to a potential cumulative impact along Caribbean Drive would be less than cumulatively considerable.

Conclusion

The Project would not generate more construction vehicle trips than those identified in the previously approved PEIR and would not result in new or more severe significant impacts than identified in the previously approved PEIR during operations, and therefore would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, or conflict with an applicable congestion management program.

Implementation of adopted Mitigation Measures TR-1a and TR-1b would reduce possible impacts related to traffic safety hazards during construction of the Project to a less than significant level, and the Project would not result in any new or more significant impacts.

The Project would not result in new or more significant impacts to public transit, bicycle and pedestrian facilities, or emergency access than those identified in the previously approved PEIR.

With implementation of adopted Mitigation Measure C-TR-1 to reduce the Project's possible contribution to cumulative transportation impacts, the Project would not result in any new or more significant impacts than those identified in the previously adopted PEIR.

3.2 Air Quality

Issues (and Supporting Information Sources):	*Potentially Significant Effects Not Identified in Prior EIR*	*Potentially Substantial Increase in Severity of Significant Impact Identified in Prior EIR*	*Sponsor Declines to Adopt Feasible Mitigation Measures or Alternatives*	*No New or More Severe Significant Effects*
AIR QUALITY — Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) 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?	☐	☐	☐	☒
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

Setting

The air quality setting relevant to the project site, including applicable regulations and air quality conditions, has not appreciably changed since the adoption of the PEIR. The Bay Area Air Quality Management District (BAAQMD) maintains regional authority for air quality management in the project area and the entire San Francisco Bay Area Air Basin (Bay Area).

The Federal Clean Air Act and the California Clean Air Act both require the establishment of standards for ambient concentrations of air pollutants, called Ambient Air Quality Standards. The state and federal non-attainment status of the Bay Area has not changed since adoption of the PEIR. The Bay Area continues to experience occasional violations of ozone and particulate matter (PM_{10} and $PM_{2.5}$) standards. Therefore, the project area currently is designated as a non-attainment area for violation of the state 1-hour and 8-hour ozone standards, the federal ozone 8-hour standard, the state respirable particulate matter (PM_{10}) 24-hour and annual average standards, the state fine particulate matter ($PM_{2.5}$) annual average standard, and the federal $PM_{2.5}$ 24-hour standard. The Project area is designated as attainment for all other state and federal standards (BAAQMD, 2017a).

BAAQMD Air Quality Plan

Regional air quality planning has proceeded since adoption of the PEIR. On April 19, 2017, the BAAQMD adopted the most recent revision to the Clean Air Plan – the *2017 Clean Air Plan: Spare the Air Cool the Climate* (*2017 CAP*). The primary goals of the *2017 CAP* are to protect public health and protect the climate (BAAQMD, 2017b). The plan includes a wide range of control measures to reduce emissions from combustion-related activities, reduce fossil fuel combustion, improve energy efficiency, and decrease emissions of potent greenhouse gases (GHGs). Some measures focus on reducing individual pollutants such as potent GHGs like methane and black carbon, or harmful fine particles that affect public health. Many of the measures, however, reduce multiple pollutants and serve both to protect public health and to protect the climate.

The 2017 Plan updates the *2010 Clean Air Plan*, pursuant to air quality planning requirements defined in the California Health and Safety Code. It describes a multi-pollutant strategy to simultaneously reduce emissions and ambient concentrations of ozone, fine particulate matter, toxic air contaminants, as well as greenhouse gases that contribute to climate change. To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors—reactive organic gases (ROG) and nitrogen oxides (NOx)—and to reduce transport of ozone and its precursors to neighboring air basins. In addition, the Plan builds upon and enhances the Air District's efforts to reduce emissions of fine particulate matter and toxic air contaminants (BAAQMD, 2017b). In addition, the 2017 CAP includes the Bay Area's first-ever comprehensive Regional Climate Protection Strategy (RCPS), which will identify potential rules, control measures, and strategies that the BAAQMD can pursue to reduce greenhouse gases in the Bay Area and lay the groundwork to attain ambitious GHG reduction targets for 2030 and 2050.

BAAQMD Rules, Regulations, and CEQA Guidelines

Since adoption of the PEIR, the BAAQMD CEQA Air Quality Guidelines, which were used to evaluate the potential effects of the project on air quality, faced legal challenge in the State Supreme Court. While the significance thresholds originally adopted by BAAQMD in 2011 are not currently recommended by the BAAQMD, there is no court order preventing their use, and they are frequently employed by lead agencies when conducting CEQA reviews because the BAAQMD 2011 guidelines provides substantial evidence for the derivation of the thresholds and the approach to employing them in an air quality impact analysis (BAAQMD, 2009). The State Court of Appeals agreed with BAAQMD that there were scenarios in which the thresholds could be used to properly assess whether and in what amount a project would add pollution to the environment. Consequently, the approach implemented in the PEIR remains the latest state-of-the-art guidance and no changes to the approach used in the PEIR are warranted at this time. The most recent version of the BAAQMD CEQA Air Quality Guidelines contains the same significance thresholds from 2011 (BAAQMD, 2017c).

The BAAQMD is also the agency responsible for investigating and controlling odor complaints in the area. The BAAQMD enforces odor control by helping the public document a public nuisance. Upon receipt of a complaint, the BAAQMD sends an investigator to interview the complainant and to locate the odor source if possible. The BAAQMD typically brings a public nuisance court action when there are a substantial number of confirmed odor events within a 24-hour period. An odor source with five or more confirmed complaints per year averaged over three years is considered to have a substantial effect on receptors.

There are several BAAQMD regulations and rules that apply to odorous emissions that could be generated by the WPCP. Regulation 1, Rule 301 is the nuisance provision that states sources cannot emit air contaminants that cause nuisance to a considerable number of persons. Regulation 9, Rule 2 limits ground level concentration of H_2S.[1] Regulation 7 specifies limits for the discharge of odorous substances where the BAAQMD receives complaints from ten or more complainants within a 90-day period. Among other things, Regulation 7 precludes discharge of an odorous substance that causes

[1] BAAQMD, Rules & Regulations, Regulation 9 – Inorganic Gaseous Pollutants, Rule 2 – Hydrogen Sulfide, last amended October 6, 1999.

the ambient air at or beyond the property line to be odorous after dilution with four parts of odor-free air (i.e., 5 D/T), and specifies maximum limits on the emission of certain odorous compounds.[2]

The WPCP is currently subject to the Operating Permit requirements of Title V of the federal Clean Air Act. BAAQMD is responsible for issuing Title V permits. The most recent application for renewal of the permit for the WPCP (Facility #A0733) was submitted in November 2017.

Sensitive Receptors

No new residential buildings, schools, colleges or universities, daycare facilities, hospitals, or senior-care facilities have been constructed closer to the WPCP than the sensitive receptors identified in the PEIR (located immediately south of State Route 237, 0.8-mile from the project site).

Findings of the Previously Adopted PEIR

The PEIR identified significant and unavoidable impacts associated with the Master Plan related to the potential to conflict with the applicable air quality plan, the potential to violate any air quality standard or contribute to an air quality violation and the extent to which the Master Plan could result in a cumulatively considerable net increase of criteria air pollutant emissions. The PEIR identified less than significant impacts associated with exposure of sensitive receptors to pollutant concentrations and the potential of the project to create objectionable odors affecting a substantial number of people. One of the mitigation measures identified in the PEIR and subsequently adopted by the City (Mitigation Measure AQ-2a) is reproduced in Chapter 5, *Mitigation Monitoring and Reporting Program*.

Table 3-1 reproduces relevant portions of PEIR Table 4.5-4 (from PEIR page 4.5-17) for reference, and summarizes emissions estimated for construction of the stages equivalent to the proposed project. The proposed project evaluated in this document (Secondary Treatment and Dewatering Facilities) includes stages 2A, 2E, and 2F analyzed in the PEIR.

TABLE 3-1
CONSTRUCTION EMISSIONS FROM PEIR ANALYSIS

Master Plan Construction Stage[a]	Average Daily Emissions (pounds per day)			
	ROG	NO_x	Exhaust PM_{10}	Exhaust $PM_{2.5}$
2A – Split Flow Conventional Activated Sludge Milestone 1	0.8	4.4	0.3	0.2
2E - Split Flow Conventional Activated Sludge Milestone 2	1.8	10.6	0.6	0.6
2F - Split Flow Conventional Activated Sludge Milestone 3 (Thickening & Dewatering)	1.3	5.9	0.3	0.2
Total	3.9	20.9	1.2	1.0

NOTE: Refer to PEIR Appendix B for assumptions and emissions estimate calculations.

SOURCE: *Sunnyvale Water Pollution Control Plant Master Plan Program Environmental Impact Report*, City of Sunnyvale, August 2016.

[2] BAAQMD, Rules & Regulations, Regulation 7 – Odorous Substances, last amended March 17, 1982.

Discussion

Since certification of the PEIR, more information has been developed regarding construction equipment needed for the project. The following discussion evaluates whether project changes and changes in circumstances would result in any new or more severe significant environmental effects than identified in the PEIR.

Consistency with Air Quality Plan

As described in the PEIR, the BAAQMD recommends that a project's consistency with the current air quality plan be evaluated using the following three criteria:

a. The project supports the goals of the air quality plan

b. The project includes applicable control measures from the air quality plan, and

c. The project does not disrupt or hinder implementation of any control measures from the air quality plan.

If it can be concluded with substantial evidence that a project would be consistent with the above three criteria, then the BAAQMD considers it to be consistent with air quality plans prepared for the Bay Area (BAAQMD, 2017c).

Since approval of the PEIR, the air quality plan has been updated. The primary goals of the *2017 Clean Air Plan* are to protect public health and protect the climate. The BAAQMD-recommended method for determining if a project supports the goals of the current air quality plan is consistency with BAAQMD thresholds of significance. If project emissions would not exceed the thresholds of significance after the application of all feasible mitigation measures, the project would be consistent with the goals of the 2017 CAP. As indicated in the following discussion with regard to cumulative increase in pollutants, the project would not result in construction or operational emissions that would exceed the BAAQMD's significance thresholds with the implementation of adopted **Mitigation Measure AQ-2a, Implement BAAQMD Basic Construction Mitigation Measures**. Therefore, the project would not conflict with the primary goals of the 2017 CAP.

The 2017 CAP contains 85 control measures aimed at reducing air pollution in the Bay Area. Projects that incorporate all feasible control measures are considered consistent with the CAP. Two of the stationary source control measures are applicable to operation of water pollution control plants: WR1 (Limit GHGs from POTWs [Publicly-Owned Treatment Works]) and WR2 (Support Water Conservation). While both of these measures do not contain specific emissions control strategies, the project would not be inconsistent with these measures as the project would not affect methane capture at the WPCP, would not affect production of recycled water at the WPCP, and not install combustion engines. For these reasons, the project would not be inconsistent with nor hinder implementation of the 2017 CAP control measures.

In summary, as the project would be consistent with all three criteria listed above to evaluate consistency of the project with the 2017 CAP. Therefore, with the implementation of adopted Mitigation Measure AQ-2a, this would be a less than significant impact.

Project Contribution to Cumulative Air Quality

According to the BAAQMD, no single project will, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. The BAAQMD *CEQA Air Quality Guidelines* recommends using its quantitative thresholds of significance to determine if an individual project's emissions would considerably contribute to cumulative air quality impacts in the region. If a project's emissions exceed the identified significance thresholds, its contribution to cumulative air quality would be considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions (BAAQMD, 2017c). Alternatively, if a project does not exceed the identified significance thresholds, then the project would not be considered cumulatively considerable and would result in less-than-significant air quality impacts.

The PEIR disclosed significant and unavoidable impacts related to the potential to conflict with an applicable air quality plan and potential to violate air quality standards. Therefore, the contribution of the adopted PEIR to cumulative air quality was also described as being significant. However, the project's contribution to the cumulative air quality of the area has been evaluated by comparing project's construction and operational emissions to the applicable BAAQMD thresholds.

Construction

At the time of PEIR preparation, details typically used to calculate air pollutant emissions (such as the number of pieces of each type of off- and on-road equipment and daily equipment usage rates in terms of hours per day and total days of use) were not known. The PEIR estimated the anticipated air pollutant emissions of WPCP projects by estimating the relative magnitude of construction activity compared to other, better defined projects planned at the site. The City anticipated that when project-level CEQA review of Master Plan improvements is initiated, the PEIR analysis would be reviewed in light of updated construction information and analysis of air pollutant emissions would be revised accordingly.

Construction details of the project are sufficiently known currently to calculate conservative air pollutant emissions during construction. Air pollutant emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ that would be generated by off-road construction equipment (e.g., excavators, graders, loaders) were estimated using the CalEEMod emissions estimator model along with the Project-specific construction schedule and equipment data that would be used during the following construction phases of the project:

- Phase 1: Earthwork & site work for structures – July 2022 to July 2023
- Phase 2: Facility construction – July 2023 to July 2025

Project construction emissions were estimates assuming that construction would begin in July 2022 and would take approximately 756 workdays to complete over a period of approximately 36

months. Average daily construction emissions were estimated by dividing the total construction emissions by the number of workdays.

Emissions from construction equipment were estimated using project-specific information such as the types and number of construction equipment used, their horsepower rating, daily usage in terms of hours per day, and the number of days each piece of equipment is used within the construction period.

Emissions would also be generated from on-road motor vehicles related to worker commute as well as the transportation of equipment, construction materials and hauling of excavated soil during construction. These emissions were also estimated in CalEEMod based on number of vehicle trips provided by the applicant. Based on data from the applicant, the project is assumed to generate an average of 260 worker commute trips per day throughout the construction period. The number of material delivery, fill and off-haul trips varies by construction phase. During Phase 1 of construction which includes earthwork and site work for structures, there would be an average of 9 material delivery trips per day and 61 fill/off-haul trips per day. During facility construction, there would be an average of 17 material delivery trips per day and 9 fill/off-haul trips per day. The exact end points for the daily trips are not known at this time, so the on-road emission estimates were developed under the assumption that each worker trip would be 25 miles round trip, and each haul truck and material delivery trip would be 50 miles round trip.

All assumptions and calculations used to estimate the project-related construction emissions are provided in Appendix A. Estimated average daily emissions are shown in **Table 3-2** and are compared to the BAAQMD thresholds.

TABLE 3-2
AVERAGE DAILY CONSTRUCTION-RELATED POLLUTANT EMISSIONS FOR THE PROPOSED PROJECT (POUNDS/DAY)

Construction Phase	Number of workdays	ROG	NOx	Exhaust PM_{10}[a]	Exhaust $PM_{2.5}$[a]
2022	131	2.0	25.2	0.3	0.3
2023	251	1.3	13.1	0.2	0.2
2024	262	0.9	8.5	0.2	0.2
2025	112	0.9	7.8	0.2	0.2
Project Average	756	1.3	12.8	0.2	0.2
BAAQMD Construction Threshold	---	54	54	82	54
Significant Impact?	---	No	No	No	No

NOTES:
a BAAQMD's construction-related significance thresholds for PM_{10} and $PM_{2.5}$ apply to exhaust emissions only and not to fugitive dust.

SOURCE: Appendix A

In addition to exhaust emissions, the PEIR evaluated emissions of fugitive dust from construction activities. As described in the PEIR, for all projects, the BAAQMD recommends the implementation of its Basic Control Mitigation Measures whether or not construction-related

exhaust emissions exceed the applicable significance thresholds. The BAAQMD Basic Control Mitigation Measures were adopted by the City as Mitigation Measure AQ-2a (included in Chapter 5 of this document). As indicated in Table 3-2, the average daily construction exhaust emissions would not exceed the BAAQMD's significance thresholds. Therefore, impacts associated with the potential for construction-related exhaust emissions to result in or contribute to a violation of an air quality standard would be less than significant.

Table 3-1 includes construction emissions estimates from the proposed project as analyzed in the PEIR (construction of Master Plan stages 2A, 2E and 2F). **Table 3-3** compares the current emissions estimates for the proposed project shown in Table 3-2 with the total emissions for construction stages 2A, 2E and 2F from the PEIR analysis. As shown in Table 3-3, the project as proposed, would generate emissions less than what was previously analyzed in the PEIR.

TABLE 3-3
COMPARISON OF CURRENT ANALYSIS FOR CONSTRUCTION WITH PEIR ANALYSIS FOR THE PROJECT

	Average Daily Emissions (pounds per day)			
	ROG	NO_x	Exhaust PM_{10}	Exhaust $PM_{2.5}$
Proposed project	1.3	12.8	0.2	0.2
Master Plan Stages 2A, 2E, and 2F in PEIR	3.9	20.9	1.2	1.0

SOURCES: Appendix A; *Sunnyvale Water Pollution Control Plant Master Plan Program Environmental Impact Report*, City of Sunnyvale, August 2016.

Operation

No new staff would be required to operate the project, therefore there would be no increase in the employee commute trips to the facility. Criteria air pollutant emissions during project operation would result primarily from truck trips for delivery of chemicals and hauling of residuals. It is estimated that the project would result in 42 chemical deliveries per month and 19 residuals hauling trucks per week (same as buildout for PEIR). In addition, emissions would be generated from the testing and maintenance of the 2,000 kW emergency standby generator proposed as part of the project. Emissions from truck trips were estimated as part of the CalEEMod run assuming a one-way trip length of 25 miles. Emissions associated with the emergency generator were calculated using emission rates in California Air Resources Board (CARB) 2011 Final Regulation Order for the Air Toxic Control Measure for stationary engines, assuming a maximum operation of 50 hours per year and 1 hour per day for testing and maintenance, consistent with BAAQMD Regulation 9, Rule 8. As shown in **Table 3-4** below, operational emissions would be less than the BAAQMD significance thresholds. Therefore, the project's operational impact would be less than significant.

TABLE 3-4
PROJECT OPERATIONAL POLLUTANT EMISSIONS (POUNDS/DAY)

Construction Phase	ROG	NOx	PM_{10}	$PM_{2.5}$
Chemical delivery & Residual Haul Truck Trips	<0.1	1.3	0.2	<0.1
Emergency Generator	0.1	1.7	0.1	0.1
Project Total	0.1	3.0	0.3	0.1
BAAQMD Operational Threshold	54	54	82	54
Significant Impact?	No	No	No	No

SOURCE: Appendix A

The PEIR estimated operational emissions from the implementation of the Master Plan as a whole and operational emissions by project is not available. However, there are no changes to the project that would increase operational emissions over what was previously analyzed in the PEIR. The PEIR had previously analyzed a 2.5 MW emergency generator, but the project now proposes a smaller 2 MW generator. Increase in vehicle trips associated with operation of the project is consistent with the assumptions for the analysis in the PEIR. Therefore, it can be concluded the project as proposed would not increase operational emissions over what was previously analyzed in the PEIR.

The project's construction and operational emissions would be less than the respective BAAQMD significance thresholds and would therefore result in less than significant impacts. Fugitive dust impacts during construction would also be less than significant with the implementation of Mitigation Measure AQ-2a. Additionally, the project would generate construction and operational emissions less than what was previously analyzed in the PEIR. Therefore, the cumulative impact of the project would be considered less than significant.

Exposure of Sensitive Receptors

Toxic Air Contaminants

The PEIR identified less than significant impacts with respect to exposure of sensitive receptors to toxic air contaminants (TACs) primarily in the form of diesel particulate matter (DPM). During construction, DPM emissions would be generated from off-road construction equipment and diesel-fueled construction trucks delivering materials and equipment to the project area. Once operational, DPM emissions would be generated from the truck trips delivering chemicals and hauling away residuals. Routine testing and maintenance of the emergency generator would also generate minimal DPM emissions. However, as noted above, no new sensitive receptors are located closer to the project area than those identified in the PEIR. The BAAQMD recommends that health risk impacts be considered when sensitive receptors are located within 1,000 feet of TAC sources. In addition, as part of the BAAQMD's permitting process, the emergency generator would be subject to a health risk assessment to ensure that it would not result in significant health risks. For these reasons, the project's impacts associated with exposure of sensitive receptors to pollutants during construction and operation would be no greater than those identified in the PEIR and would be less than significant.

Criteria Air Pollutants

The project would generate criteria pollutant emissions of ROG, NOx, and PM, as discussed under *Project Contribution to Cumulative Air Quality* above; however, the health risk impacts of these emissions on sensitive receptors are harder to quantify. ROG and NOx, the precursors of ozone, react through a series of complex photo-chemical reactions in the presence of sunlight to form ozone in the atmosphere. Many factors affect the formation of ozone including the presence of sunlight, dispersion from wind, and topography that affects wind patterns. Therefore, the impacts of ozone are typically considered on a basin-wide or regional basis instead of a localized basis. The health-based ambient air quality standards for ozone therefore are as concentrations of ozone and not as tonnages of their precursor pollutants (i.e., NO_X and ROG). It is not necessarily the amount of precursor pollutants emitted that causes human health effects, but the concentration of resulting ozone or particulate matter. Because of the complexity of ozone formation and the non-linear relationship of ozone concentration with its precursor pollutants, and given the state of environmental science modeling in use at this time, it is infeasible to convert specific project level emissions of NO_X or ROG emitted in a particular area to concentration of ozone in that area. Meteorology, the presence of sunlight, seasonal impacts, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone (SCAQMD, 2014; SJVAPCD, 2014). Notwithstanding these scientific constraints, the disconnect between project level NO_X emissions and ozone-related health impact cannot be bridged at this time.

Odorous Emissions

Odors can be generated and released from many wastewater treatment processes. Most odor-producing compounds found in domestic wastewater result from biological activity that consumes organic material, sulfur, and nitrogen found in wastewater. These odor-producing compounds can be organic or inorganic molecules; the two primary odorous inorganic gases are hydrogen sulfide (H_2S) and ammonia.[3]

The BAAQMD has developed a list of recommended odor screening distances for specific odor-generating facilities such as wastewater treatment plants. If a proposed project would include the operation of an odor source, the screening distances should be used to evaluate the potential impact to existing sensitive receptors. The BAAQMD recommends that the screening distances be used as indicators of how much additional analysis would be required rather than the sole indicator of impact significance. The BAAQMD odor screening distance for wastewater treatment plants is 2 miles. The closest residences to the WPCP are single-family residences immediately south of SR 237, which are approximately 0.8 miles from the WPCP's boundary. In addition, winds in the area tend to be southeasterly. In response, additional analysis, including a review of existing odor complaint data, is presented in this addendum.

The BAAQMD considers an existing source to have a substantial number of odor complaints and an associated significant odor impact if the complaint history for the facility includes five or more confirmed complaints per year averaged over a 3-year period. A review of BAAQMD odor

[3] H_2S is regulated as a nuisance based on its odor detection level. If the standard were based on adverse health effects, it would be set at a much higher level. The H2S standard was adopted for the purpose of odor control. The current standard, 0.03 ppm for a one-hour average, was adopted by ARB in 1969.

complaint data compiled for the Sunnyvale WPCP indicates that there has been one confirmed odor complaint south of the WPCP in the January 2009 through May 2017 period (BAAQMD, 2017d), and the BAAQMD has not notified the WPCP of any more recent complaints as of November 2020. Although BAAQMD records do not identify the specific source of the confirmed odor incident, which occurred in 2009, WPCP staff investigating the incident detected a slight H_2S odor along the south boundary of Pond 2, took measurements of dissolved oxygen levels in the ponds, and sampled for H_2S around the ponds. Plant operators were unable to confirm that the source of the odor that led to the complaint was one of the ponds (as opposed to Bay muds). Because there has only been the one confirmed odor complaint identified by BAAQMD during the time period referenced above, in accordance with BAAQMD standards, the WPCP would not be considered to have a substantial number of odor complaints nor constitute an existing significant source of odors.

Under existing conditions, the ponds are not covered and sludge dewatering occurs in mechanized dewatering units, where emissions of potentially odorous compounds may escape directly to the atmosphere. Prior to construction activities associated with the Primary Treatment Facility, digested sludge was dewatered on open-air tile beds. The proposed aeration basins, which would treat a portion of wastewater that would otherwise be treated in the ponds, would also be uncovered.

Based on data from the BAAQMD, the ponds as currently used, while a potential source of odorous emissions such as H_2S and ammonia, have not been the subject of odor complaints. Similarly, though the proposed aeration basins are uncovered, due to the distance separating them from the nearest receptors that could be potentially affected, emissions of odorous compounds are unlikely to result in potential odor complaints. Once the new Thickening and Dewatering Building is operational, solids dewatering would occur within the building and would include odor abatement technology, such as a bioscrubber or biotrickling filter to treat ventilated air from the building before it is released to the atmosphere. With implementation of the project, the dewatering facilities, a process with greater odor potential than the proposed aeration basins, are more likely to have lower emissions of odorous gases such as H_2S compared to existing conditions and the project as a whole is likely to have a decreased potential for odor complaints. Health impacts associated with odorous compounds like H_2S that may be potentially emitted after the implementation of the project are also likely to be lower than under the existing conditions and will be further addressed, as required, as part of the BAAQMD permitting process. Since the nearest sensitive receptors have not changed, the overall treatment capacity of the WPCP would remain unchanged, the current WPCP operations do not have a history of odor complaints, and the project would reduce emissions of odorous gases from dewatering of sludge, it is likely that odors emitted from the project would be reduced compared to the current operation and impacts would be less than significant.

Conclusion

Construction emissions associated with the Secondary Treatment and Dewatering Facilities project would be less than the estimates presented in the PEIR and below BAAQMD thresholds with the implementation of adopted Mitigation Measure AQ-2a. Operational emissions would also be less than the respective BAAQMD thresholds. In addition, the project would not conflict

with or hinder implementation of any measures in the *2017 CAP*. Therefore, the project would be consistent with the *2017 CAP* and would not 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. These impacts would be less than significant.

The project would not result in additional exposure of sensitive receptors to substantial pollutant concentrations, or create additional objectionable odors affecting a substantial number of people and thus would not result in any new or more significant impacts than those identified in the previously adopted PEIR.

3.3 Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Effects Not Identified in Prior EIR*	*Potentially Substantial Increase in Severity of Significant Impact Identified in Prior EIR*	*Sponsor Declines to Adopt Feasible Mitigation Measures or Alternatives*	*No New or More Severe Significant Effects*
GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Setting

As a climate action leader, California has continued to demonstrate its commitment to early and aggressive action on climate change. The State Legislature and Governor have adopted ambitious targets to encourage bolder climate action, including statewide GHG emissions reduction targets of reaching:

- 1990 levels by 2020 (Assembly Bill [AB] 32 in 2006)
- 40 percent below 1990 levels by 2030 (SB 32 in 2016)
- 80 percent below 1990 levels by 2050 (Executive Order S-3- 05 in 2005)

In September 2018, Governor Brown signed SB 100 into law, setting a state target of 100 percent carbon-free electricity by 2045. SB 100 also sets interim requirements for 50 percent renewable electricity by 2026 and 60 percent by 2030, superseding previously established targets. Also in September 2018, Governor Brown signed Executive Order B-55-18, which establishes a new statewide goal to "achieve carbon neutrality as soon as possible, no later than 2045, and achieve and maintain net negative emissions thereafter."

The three planning documents identified in the PEIR– the Sunnyvale Climate Action Plan, the *2017 CAP*, and California Air Resources Board's (CARB) Climate Change Scoping Plan (CARB, 2017) – have all been updated since PEIR approval. As discussed above in Air Quality, the *2017 CAP* (BAAQMD, 2017b) was released after approval of the PEIR. The City of Sunnyvale Climate Action Plan was updated in 2019 as the Climate Action Playbook (City of Sunnyvale, 2019) to include the City's strategies to reach the state's GHG reduction goals for 2030 and 2050. CARB's Climate Change Scoping Plan was most recently updated in 2017 to incorporate the 2030 target established by SB 32. The 2017 Scoping Plan Update takes into account the key programs associated with implementation of the AB 32 Scoping Plan—such as GHG reduction programs for cars, trucks, fuels, industry, and electrical generation—and builds upon, in particular, existing programs related to the cap-and-trade regulation; the low carbon fuel standard; much cleaner cars, trucks, and freight movement; power generation for the state using cleaner

renewable energy; and strategies to reduce methane emissions from agricultural and other waste by using it to meet the state's energy needs.

Findings of the Previously Adopted PEIR

The PEIR identified less than significant impacts associated with the project related to conflict with plans adopted regarding GHG emissions and generation of GHG emissions.

Discussion

Since certification of the PEIR, more information has been developed regarding construction equipment needed for the project. The following discussion evaluates whether project changes and changes in circumstances would result in any new or more severe significant environmental effects than identified in the PEIR.

GHG Emissions

Construction

At the time of PEIR preparation, details typically used to calculate GHG emissions (such as the number of pieces of each type of off- and on-road equipment and daily equipment usage rates in terms of hours per day and total days of use) were not known. The PEIR estimated the anticipated GHG emissions of Master Plan by estimating the relative magnitude of construction activity compared to other, better defined projects planned at the site. The City anticipated that when project-level CEQA review of Master Plan improvements is initiated, the PEIR analysis would be reviewed in light of updated construction information and analysis of GHG emissions would be revised accordingly.

The combustion of diesel fuel to provide power for the operation of various construction equipment results in the generation of GHGs. Construction emissions that would be associated with the project were estimated using project-specific information such as the types and number of construction equipment used, their horsepower rating, daily usage in terms of hours per day, and the number of days each piece of equipment is used within the construction period. Appendix A contains the data and assumptions used to estimate the construction-phase GHG emissions that would be associated with the project.

GHG emissions, primarily carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) emissions for the project were derived from the CalEEMod run conducted for the analysis of air quality impacts. The GHG emissions estimate from CalEEMod includes emissions from both construction and operation. Construction emissions include emissions from off-road construction equipment as well as on-road motor vehicles used during construction for worker commute and transport of materials and equipment. N_2O and CH_4 emissions were multiplied by their respective global warming potentials (GWP) and added to the CO_2 emissions to obtain carbon dioxide equivalent (CO_2e) emissions. GWPs of 25 and 298 for CH_4 and N_2O emissions, respectively were used based on the IPCC Fourth Assessment Report (AR4), also used by the CARB to prepare the 2000 – 2017 GHG inventories for the state. (CARB, 2020).

The project is assumed to generate an average of 260 worker commute trips per day throughout the construction period. The number of material delivery and off-haul trips varies by construction phase and are detailed in Appendix A. The exact end points for the daily trips are not known at this time, so the on-road emission estimates were developed under the assumption that each worker trip would be 25 miles round trip, and each haul truck and material delivery trip would be 50 miles round trip.

Table 3-5 shows the GHG emissions estimated to be generated by construction activities that would be associated with the project. As shown in the table, project construction would generate a total of approximately 2014 metric tons (MT) carbon dioxide equivalent (CO_2e). Based on a minimum life span of 30 years for project facilities, the project's annualized construction-related GHG emissions would average 67 MT CO_2e per year. Refer to Appendix A for details on the calculations and assumptions used to estimate construction GHG emissions.

TABLE 3-5
TOTAL ESTIMATED GHG EMISSIONS FROM CONSTRUCTION

Construction Year	GHG Emissions (metric tons)			
	CO_2	CH_4	N_2O	CO_2e
2022	608.0	0.04	<0.01	609
2023	765.7	0.07	<0.01	768
2024	445.5	0.06	<0.01	447
2025	189.3	0.03	<0.01	190
Total Project Construction Emissions				2,014
Project Life (years)				30
Total Project Construction Emissions				67

SOURCE: Appendix A.

Table 3-6 compares the GHG emissions from construction of the proposed project to emissions from the project's equivalent stages 2A, 2E and 2F in the PEIR analysis. The BAAQMD does not identify a significance threshold for construction-related GHG emissions. Therefore, the total annualized emissions are combined with the operational emissions of the identified concurrent projects for comparison with the BAAQMD's operational threshold.

Table 3-6 shows that the project as proposed, would generate more GHG emissions during construction than what was previously analyzed in the PEIR. However, as detailed below under the analysis of operational impacts, when considered with the operational emissions for comparison with the significance threshold, this increase in construction GHG emissions would not change the significance determination of the impact.

TABLE 3-6
COMPARISON OF CURRENT CONSTRUCTION GHG ANALYSIS WITH PEIR ANALYSIS FOR THE PROJECT

	Construction Emissions
	MT of CO_2e
Proposed project	2,014
Master Plan Stages 2A, 2E, and 2F in PEIR	778

SOURCES: Appendix A; *Sunnyvale Water Pollution Control Plant Master Plan Program Environmental Impact Report*, City of Sunnyvale, August 2016.

Operation

Once operational, the project would generate long-term GHG emissions from direct and indirect sources. Direct GHG emissions would result primarily from the 42 truck trips per month associated with chemical deliveries and 76 truck trips per month (19 per week) associated with hauling residuals. In addition, the emergency generator will be routinely operated for testing and maintenance purposes but such activities would be limited to a maximum of 50 hours per year consistent with BAAQMD Regulation 9, Rule 8. Indirect GHG emissions would be generated from the increase in power demands at the WPCP due to the project. After the Primary Treatment Facility project is complete, the WPCP's demand will exceed the capacity of the cogeneration facility. The additional power demand for the project would be approximately 1,000 kW. All the electrical demand for the facilities proposed in this project will be met by increased PG&E and SVCE supply, the generation of which will generate indirect GHG emissions. Currently, the City's electricity accounts use SVCE's "Green Prime" option, which comes from 100 percent renewable energy and would therefore not generate any indirect GHG emissions. However, for this analysis, PG&E's energy portfolio was used to generate conservative GHG estimates. Indirect GHG emissions generated by the Project's use of electricity from Pacific Gas & Electricity's (PG&E) electrical grid were estimated using an emission factor of 210 pounds of CO_2 per MWh of delivered electricity based on data for 2017 (PG&E, 2019). N_2O and CH_4 emission factors for electricity were obtained from the U.S. Environmental Protection Agency (U.S. EPA, 2020). **Table 3-7** shows GHG emissions associated with project operation.

TABLE 3-7
ANNUAL GHG EMISSIONS FROM PROJECT OPERATION

Source	GHG Emissions (MT of CO_2e/year)
Chemical delivery & Residual Haul Truck Trips	121.6
Emergency Generator	72.1
Electricity Generation	0.1
Total Operational GHG Emissions	192.9

SOURCE: Appendix A.

The PEIR estimated operational emissions from the implementation of the Master Plan as a whole and operational emissions by project is not available. However, there are no changes to the project that would increase operational emissions over what was previously analyzed in the PEIR. The PEIR had previously analyzed a 2.5 MW emergency generator, but the project now proposes a smaller 2 MW generator. Vehicle trips and increase in electricity use associated with operation of the project are consistent with the assumptions for the analysis in the PEIR. In addition, PG&E emission factors are currently 27.5 percent lower than the emission rates used in the PEIR analysis. Even with the lower PG&E emission factors, this analysis is conservative because if power is supplied entirely by SVCE, there would be no GHG emissions associated with its generation. Therefore, it can be concluded the project as proposed would not increase operational emissions over what was previously analyzed in the PEIR.

Table 3-8 shows the combined annual operational and construction emissions of the project.

TABLE 3-8
COMBINED ANNUAL GHG EMISSIONS FROM PROJECT CONSTRUCTION AND OPERATION

	GHG Emissions expressed as CO_2e (metric tons per year)
Project operational emissions	192.9
Project construction emissions amortized over a project life of 30 years	67.0
Project Total	259.9
BAAQMD Operational Significance Threshold	10,000
Significant?	No

SOURCE: Appendix A,

The total annual operational GHG emissions combined with the total annual construction emissions from the project and other concurrent Master Plan projects would be less than the BAAQMD's annual operational threshold for stationary sources of 10,000 metric tons CO_2e. Therefore, this impact would be considered less than significant.

Consistency with GHG Plans, Policies, or Regulations

The 2017 Clean Air Plan does not include any stationary source measures applicable to the project. The project would not disrupt or hinder implementation of any of the GHG-related 2017 Clean Air Plan control measures.

The BAAQMD GHG thresholds referenced in the discussion above were designed to meet the AB32 goal of reducing GHG emissions to 1990 levels by 2020. As discussed above, the project would not result in any temporary or new permanent sources of GHG emissions that would exceed the BAAQMD's CO_2e significance threshold of 10,000 metric tons per year. Since the BAAQMD GHG significance threshold would not be exceeded, the project would not result in a cumulatively considerable increase in GHG emissions that would impair the State's ability to implement AB32.

This City of Sunnyvale Climate Action Plan adopted in 2014 included strategies to reduce GHG emissions in Sunnyvale to achieve the state-recommended GHG emission reduction target of 15 percent below 2008 levels by the year 2020. It was also intended to streamline future environmental review of development projects in Sunnyvale by following the CEQA Guidelines and meet BAAQMD's expectations for a Qualified GHG Reduction Strategy. The Climate Action Plan was updated as a Climate Action Playbook in 2019 which builds upon the City's past success and integrates new ideas to pave the path for meeting or exceeding the state's emissions targets of 40 percent reduction in GHG emissions by 2030 and 80 percent reduction by 2050. The City surpassed the 2014 Climate Action Plan's goal of reaching 1990 levels of emissions by 2020 and is well-positioned to meet the state's 2030 target. However, to meet the 2050 goal, the City must achieve an interim target of a 56 percent reduction below 1990 levels by 2030, exceeding the state's 2030 target.

The 2019 Climate Action Playbook identifies six key strategies and 18 plays associated with these strategies to achieve these reductions. Of the six strategies, only one would apply to the project. Project consistency with this measure is discussed below.

Strategy 1: Promoting clean energy

The project's energy needs would be served by PG&E and SVCE. Electricity-related emissions in the City have already reduced approximately 76 percent by moving from conventional PG&E electricity to SVCE's carbon-free electricity. The remaining emissions are associated with electricity procured from other electricity providers and from conventional (not carbon-free) sources. The project would benefit from the City's ongoing efforts to shift these remaining emissions to carbon-free sources by working with large purchasers of electricity that buy electricity from wholesale markets. Supply of clean electricity is also a critical foundation for Strategies 2 (Decarbonizing Buildings) and 3 (Decarbonizing Transportation & Sustainable Land Use). As such, the City plans to continue supporting and expanding Sunnyvale's participation to transition all electricity accounts to SVCE's clean electricity by 2030.

Strategy 2 addresses decarbonization of buildings by including measures to optimize energy efficiency into the deign that reduce GHG emissions associated with heating and lighting. The project does not include any habitable structures; therefore, this strategy would not apply. Strategy 3 addresses the largest source of GHG emissions in the City by decarbonizing transportation and sustainable land use. One way the City implements this Strategy is by requiring projects to encourage the use of zero emission vehicles by providing electric vehicle charging stations to encourage employees to use electric vehicles and reduce GHG emissions. However, the project would not increase the number of employees at the WPCP and would therefore not increase vehicle trips associated with employee commute. Operational truck traffic would increase by approximately 236 per month from trucks delivering residuals and hauling chemicals, but current zero emission technology is primarily available only for light duty vehicles. The other three strategies aim to manage resources sustainably, empower the community and adapt to a changing climate do not contain any project level strategies and will be implemented on a Citywide basis.

In summary, the project would not result in any temporary or new permanent sources of GHG emissions that would exceed the BAAQMD's CO_2e significance threshold of 10,000 MT per

year. In addition, the project would not conflict any of the GHG reduction measures either in the *2017 CAP* or the City of Sunnyvale Climate Action Playbook. Therefore, the project would not result in a cumulatively considerable increase in GHG emissions that would impair the State's ability to implement AB 32 and SB 32 goals.

For these reasons, the project would not result in any new or more severe environmental effects related to GHG emissions beyond those identified in the PEIR.

Conclusion

The project would not result in any new or more severe environmental effects related to GHG emissions, or conflicts with plans, policies, and regulations adopted regarding GHG emissions, than those identified in the previously adopted PEIR.

3.4 Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Effects Not Identified in Prior EIR*	*Potentially Substantial Increase in Severity of Significant Impact Identified in Prior EIR*	*Sponsor Declines to Adopt Feasible Mitigation Measures or Alternatives*	*No New or More Severe Significant Effects*
HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☐	☒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through addition of impervious surfaces, in a manner which would:	☐	☐	☐	☒
i) Result in substantial erosion or siltation on- or off-site;	☐	☐	☐	☒
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☒
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) Impede or redirect flood flow?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Setting

The environmental setting relevant to hydrology and water quality for the project site has not changed since adoption of the PEIR, with the exception of two National Pollutant Discharge Elimination System (NPDES) permits under which the Sunnyvale WPCP is permittee or co-permittee (described below). Setting discussions from the adopted PEIR for water quality standards, groundwater, surface water drainage patterns, and flood and inundation hazards are applicable to the project.

Effective April 1, 2020, Order No. R2-2014-0035 (Waste Discharge Requirements for Sunnyvale Water Pollution Control Plant and wastewater collection system) issued by the San Francisco Bay Regional Water Quality Control Board (RWQCB) was rescinded and replaced by Order No. R2-2020-0002 (RWQCB, 2020). This order sets effluent limitations and discharge specifications for

water discharged to Moffett Channel and San Francisco Bay from the Sunnyvale WPCP. The effluent limitations in the order are the same as shown in PEIR Table 4.10-7 with the exception of enterococcus bacteria, nickel, cyanide, and bis (2-Ethylhexyl) phthalate. The revised numeric effluent limitations are listed in **Table 3-9**, below.

TABLE 3-9
SELECT REVISED NUMERIC EFFLUENT LIMITATIONS FOR THE WPCP

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Other
Previous Order					
Enterococcus bacteria	Not Applicable	-	-	-	30-day mean not to exceed 35 colonies/100 mL
Nickel[b]	µg/L	24	-	35	-
Cyanide, Total[b]	µg/L	7.5	-	17	-
Bis (2-Ethylhexyl) Phthalate[b]	µg/L	5.9	-	12	-
Turbidity	NTU	-	-	-	Instantaneous maximum limit of 10 NTU
Revised Order					
Enterococcus bacteria	Not Applicable	-	-	-	Six-week mean not to exceed 30 colonies/100 mL No more than 10% samples > 110 CFU/100 mL
Nickel[b]	µg/L	24	-	33	-
Cyanide, Total[b]	µg/L	7.0	-	17	-
Bis (2-Ethylhexyl) Phthalate[b]		n/a	n/a	n/a	n/a
Turbidity	NTU				Instantaneous Maximum Limit of 10 NTU From October 1 through May 31, only applies when total suspended solids exceeds 20 mg/L

NOTES:
a Unit Abbreviations: mL = milliliters; mg/L = milligrams per liter; µg/L = micrograms per liter; NTU = nephelometric turbidity units; CFU = colony forming units.
b Limitations apply to the average concentration of all samples collected during the averaging period (daily ~ 24-hour period; monthly ~ calendar month)

SOURCE: RWQCB, 2020

Effective January 1, 2018, Order No. R2-2012-0096 (Mercury and PCBs [Polychlorinated Biphenyls] Watershed Permit, NPDES No. CA0038849) issued by the San Francisco Bay RWQCB was rescinded and replaced by Order No. R2-2017-0041. The Sunnyvale WPCP is co-permittee to this order, which sets requirements for mercury and PCB concentrations in the WPCP effluent. The effluent limitations for average monthly and maximum daily PCB concentrations are the same as those specified for the Sunnyvale WPCP in the previous order and

shown in PEIR Table 4.10-7. Similarly, the effluent limitations for average weekly and monthly mercury concentrations are the same as shown in PEIR Table 4.10-7.

Findings of Previously Adopted PEIR

The adopted PEIR determined that all project impacts related to hydrology and water quality would be less than significant or less than significant with mitigation. Chapter 5, *Mitigation Monitoring and Reporting Program*, reproduces adopted mitigation measures applicable to hydrology and water quality impacts from this project.

Discussion

The nature, scale, and timing of project construction have not changed in a manner that would deplete additional groundwater, further affect drainage patterns or systems, or further affect flooding because the facilities would be located at the same site evaluated in the PEIR with the exception of the new construction staging area. The project would not change the wastewater treatment technologies beyond what was evaluated in the PEIR with the exception of the addition of deammonification as a sidestream nitrogen removal process. The following discussion focuses on stormwater drainage and quality at the new construction staging area, differences in effluent quality during operations, and impacts on groundwater during construction and operations compared with the analysis conducted in the adopted PEIR.

Stormwater

In addition to staging within the main plant site, the project would use an existing construction staging area outside of the main plant site. The existing construction staging area is surrounded by a curb and would not be expanded by the proposed project. No ground disturbance is proposed at the construction staging area, and all staging activities would occur within the curbed area. Runoff from the curbed area is collected in a nearby stormwater pump station forebay before being pumped to Moffett Channel. The project would not alter the volume of stormwater generated from the construction staging area.

Water Quality

While no ground disturbance is proposed at the construction staging area outside of the main plant site, runoff from the curbed area is collected in a nearby stormwater pump station forebay before being pumped into Moffett Channel. If equipment maintenance or storage activities require the use of fuels and related chemicals in the construction staging area, or stockpile soils, these pollutants could be released into Moffett Channel, a potentially significant impact. Implementation of **Mitigation Measure BIO-2b, Minimization of Impacts on Water Quality**, would reduce potential impacts on water quality in Moffett Channel by requiring implementation of a fuel spill containment plan and good housekeeping measures, along with stockpile management measures.

As discussed in PEIR Impact HYD-1, stormwater from the site is routed to the preliminary treatment facility, treated, and released in compliance with the WPCP's individual NPDES permit; this would continue during project operations. Additionally, the potential for hazardous materials releases would be minimized by adherence to an updated Hazardous Materials Business

Plan, which would be required under state law, and which would be updated to include project facilities.

The PEIR evaluated conversion of secondary treatment to conventional activated sludge. As discussed in PEIR Section 4.10, Water Quality, through the upgraded and new secondary treatment process, reliability and effectiveness of the secondary treatment process would be improved, and the effectiveness of subsequent treatment processes would also be improved. The use of deammonification as a sidestream nitrogen removal process was not evaluated in the PEIR. Treatment of the sidestream (the internal wastewater stream generated during treatment processes at the WPCP) would reduce the ammonia and total nitrogen in the WPCP effluent. The deammonification process proposed would not require additional treatment chemicals beyond those identified in the PEIR and any sludge generated would be treated in the digesters similar to the existing secondary treatment process. The upgraded treatment process would allow for more reliable ammonia and total nitrogen removal throughout the year than is currently achieved using Ponds 1 and 2.

The project would result in enhancements and increased reliability of the wastewater treatment process at the WPCP and would continue to comply with the water quality requirements in the NPDES Permit, which would be reissued or modified to reflect the changes in the treatment processes. The NPDES Permit incorporates the water quality objectives from the Basin Plan that are protective and the beneficial uses of the receiving waters and the receiving water quality and the effluent resulting from the wastewater treatment at the WPCP would be subject to and required to comply with the NPDES permit.

Groundwater

As discussed in PEIR Impact HYD-4 (beginning on PEIR page 4.9-36), shallow groundwater beneath the landfill is influenced by surface water ponds, channels, ditches, storm drain pipelines, and sanitary sewers, which result in a generally radial flow of groundwater toward the center of the landfill (San Francisco Bay Regional Water Quality Control Board [RWQCB], 2004). An aquitard separates the shallow aquifer from the deeper aquifer and prevents leachate and groundwater impacted by landfill waste from moving downward (RWQCB, 2004). A Corrective Action Program is in place to monitor and control the flow of leachate and impacted groundwater from the landfill (Order No. R2-2004-0030). The Correct Action Program is based on the hydraulic capture of groundwater by flow toward existing groundwater sinks (areas of relatively low groundwater pressure, toward which groundwater will preferentially flow), primarily stormwater and sanitary sewer pipelines that discharge to the headworks of the main plant site. Project construction activities, such as excavation and associated dewatering, may affect these general groundwater flow patterns and may require the relocation of the monitoring components of the existing Correct Action Program.

As discussed in Chapter 2, *Project Description*, excavation would extend to approximately 32 feet below ground surface. Procedures for containment, handling, and disposal of groundwater generated from construction dewatering, and the method used to analyze groundwater for hazardous materials likely to be encountered at specific locations and appropriate treatment and/or disposal methods, would be specified for the project as part of adopted **Mitigation Measure HAZ-2c**, **Soil**

and Groundwater Management Plan. Extended groundwater dewatering may affect the groundwater flow and alter efficacy of the Corrective Action Program. The City is preparing a technical report describing components of construction activities affecting groundwater flow at the WPCP, including effects of the proposed project (City of Sunnyvale, 2018). The report also includes modeling conducted in efforts to predict potential changes to groundwater flow patterns and associated groundwater monitoring and control system changes deemed necessary to maintain the integrity of the landfill Corrective Action Program. The project report would be submitted to the RWQCB and project work could not proceed until the RWQCB concurs with the findings and the proposed methods to ensure efficacy of the Corrective Action Program. Compliance with these requirements would limit impacts related to changes in groundwater flow patterns and water quality to less-than-significant levels.

Conclusion

The project would improve effluent quality and continue to comply with existing waste discharge requirements applicable to the WPCP, would comply with postclosure maintenance requirements applicable to the closed landfill, implement Mitigation Measures BIO-1b and HAZ-2c during construction, and would not otherwise degrade water quality.

3.5 Aesthetics

Issues (and Supporting Information Sources):	*Potentially Significant Effects Not Identified in Prior EIR*	*Potentially Substantial Increase in Severity of Significant Impact Identified in Prior EIR*	*Sponsor Declines to Adopt Feasible Mitigation Measures or Alternatives*	*No New or More Severe Significant Effects*
AESTHETICS — Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Setting

The environmental setting relevant to Aesthetics for the project site has not changed since adoption of the PEIR. Setting discussions from the adopted PEIR for scenic vistas, scenic resources, existing visual character or quality, and light and glare are applicable to the project.

Findings of Previously Adopted PEIR

The adopted PEIR found that Master Plan components outside the main plant site (in Ponds 1 and 2) would alter the visual quality of Moffett Channel and Cargill Channel, a significant impact that could be reduced with mitigation. The Secondary Treatment and Dewatering project would not construct facilities outside of the main plant site, and would not affect the high quality views near Ponds 1 and 2 identified in the PEIR.

The adopted PEIR determined that within the main plant the Thickening and Dewatering Facility would exceed the current heights of existing structures, and that landscaping planted along the fenceline would partially screen views of these structures from Borregas Avenue and Carl Road. In addition, the PEIR found that these new facilities would be consistent with the existing industrial nature of the main plant site and these facilities would not be visible to motorists on nearby Caribbean Drive due to the intervening landfill topography.

The adopted PEIR found that given (a) the limited publicly accessible viewpoints of the main plant, (b) the existing visual character of the site (see PEIR Figure 4.15-7, Photo 12), and (c) the anticipated future appearance of proposed facilities, implementation of the Master Plan would not substantially degrade the visual character of the main plant.

Discussion

Since certification of the PEIR, more information has been developed regarding proposed building heights. The following discussion evaluates whether project changes and changes in circumstances would result in any new or more severe significant environmental effects than identified in the PEIR.

Scenic Vistas, Resources, and Highways

There are no state- or locally-designated scenic vistas in the vicinity of the WPCP, nor is the project site visible from a state scenic highway (Caltrans, 2020; City of Sunnyvale, 2011). Given the absence of designated scenic vistas in the area, construction and operation of the project with modifications would not result in a substantial adverse effect on a scenic vista, highway, or other scenic resource, and no mitigation is required.

Visual Character

The WPCP has an industrial character and is in an urbanized area zoned as "Public Facilities" (City of Sunnyvale, 2020b). The Thickening and Dewatering Facility would be approximately 55 feet tall, instead of 50 feet as evaluated in the PEIR. While the Thickening and Dewatering Facility would be the tallest building included in the project and would exceed the height of existing structures at the site (the tallest structure at the WPCP main plant is approximately 31 feet tall, excluding appurtenant features), the facility along with the other project facilities would be consistent with the existing industrial character of the WPCP main plant site and would not be visible to motorists on nearby Caribbean Drive due to the intervening landfill topography. Intervening landfill topography would also limit the visibility of the Thickening and Dewatering Facility from nearby trails. As part of the Master Plan, Carl Road west of Borregas Avenue would be closed to the public. Consequently, views of the Thickening and Dewatering Facility from public roadways would be limited to westbound Carl Road (views of the lower portion of the building would be blocked by topography). Additionally, construction of the facility at the WPCP would be consistent with current uses at the WPCP, and would not conflict with the City of Sunnyvale's zoning ordinance. The increased height of the Thickening and Dewatering Facility would thus not substantially degrade the existing visual character of the site and surroundings, and the impact would not be more significant than that identified in the previously approved PEIR.

Light and Glare

The project would install the same lighting as described in the PEIR; thus, the impact would be the same as that identified in the previously approved PEIR.

Conclusion

No new or more significant impacts related to a scenic vista, highway, or other scenic resource would result from the project with modifications compared to the impacts identified in the previously adopted PEIR.

The project with modifications would not result in additional new or more significant impacts related to the visual character of the project site and its surroundings than those identified in the previously adopted PEIR.

The project with modifications would not result in new or more significant impacts related to the effects of light and glare on daytime or nighttime views than those identified in the previously adopted PEIR.

3.6 References

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CHAPTER 4
Conclusion

The modifications to the Secondary Treatment and Dewatering Facilities project would not result in new or more severe significant impacts than those attributable to the project described in the Sunnyvale Water Pollution Control Plant (WPCP) Master Plan Program Environmental Impact Report (PEIR).

The analyses and discussion in Chapter 3 do not reflect involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. There have been no changes in circumstances under which the project is undertaken that would result in new significant environmental impacts or substantially more severe impacts, and no new information has become available that would indicate the potential for new significant impacts or substantially more severe impacts than were discussed in the PEIR. Therefore, no further evaluation is required, and no Subsequent EIR is needed pursuant to CEQA Guidelines Section 15162.

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CHAPTER 5

Mitigation Monitoring and Reporting Program – Secondary Treatment and Dewatering Facilities

Table 5-1 presents mitigation measures and City actions to implement, monitor and report on these measures that apply to the Secondary Treatment and Dewatering Facilities project. These measures were adopted by the City Council on August 23, 2016. **Table 5-2** presents other mitigation measures contained within the Sunnyvale Water Pollution Control Plant Master Plan Mitigation Monitoring and Reporting Program that do not apply to the project, and the reasons that they do not apply.

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TABLE 5-1
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY TREATMENT AND DEWATERING FACILITIES PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Transportation					
Mitigation Measure TR-1a: Truck Route Plan. As part of pre-construction submittals, the contractor(s) shall submit a truck route plan to the City of Sunnyvale Public Works Department for review and approval to help minimize impacts to adjacent roadways.	Contractor(s) shall obtain approval of truck route plan and implement plan during construction	City of Sunnyvale Public Works Department	Verify, review and approve truck route plan.	Prior to construction	*Verified by:* *Date:*
Mitigation Measure TR-1b: Implement a Temporary Traffic Control Plan. The City contractor(s) shall prepare and implement a traffic control plan using the City's Temporary Traffic Control guidelines to reduce traffic impacts on the roadways at and near the work site, as well as to reduce potential traffic safety hazards and ensure adequate access for emergency responders. The City shall coordinate development and implementation of this plan with City departments (e.g., Emergency Services, Fire, Police, Transportation), as appropriate. To the extent applicable, the traffic control plan shall conform to the Caltrans' *California Manual on Uniform Traffic Control Devices*, Part 6 (Temporary Traffic Control; Caltrans, 2014). The traffic control plan shall include, but not be limited to, the following elements: • Circulation and detour plans to minimize impacts on local road circulation during road and lane closures. Flaggers and/or signage shall be used to guide vehicles through and/or around the construction zone. • Controlling and monitoring construction vehicle movement through the enforcement of standard construction specifications by onsite inspectors. • Sufficient staging areas for trucks accessing construction zones to minimize disruption of access to adjacent public rights-of-way. • Scheduling truck trips outside the peak morning and evening commute hours to the extent possible. • Maintaining pedestrian and bicycle access and circulation during project construction where safe to do so. If construction activities encroach on bicycle routes or multi-use paths, advance warning signs (e.g., "Bicyclists Allowed Use of Full Lane" and/or "Share the Road") shall be posted that indicate the presence of such users. • Identifying detours for bicycles and pedestrians, where applicable, in all areas affected by project construction. • Implementing roadside safety protocols. Advance "Road Work Ahead" warning and speed control signs (including those informing drivers of State legislated double fines for speed infractions in a construction zone) shall be posted to reduce speeds and provide safe traffic flow through the work zone. • Coordinating construction with administrators of police and fire stations (including all fire protection agencies), and recreational facility managers. Operators shall be notified in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures, where applicable. • Storing all equipment and materials in designated contractor staging areas on or adjacent to the worksite, such that traffic obstruction is minimized.	Contractor(s) shall prepare plan that adheres to all measures listed Contractor(s) shall implement plan	City of Sunnyvale Public Works Department	Verify inclusion of plan in contract specifications	Prior to construction	*Verified by:* *Date:*
Mitigation Measure C-TR-1: Implement Coordinated Transportation Management Plan. Prior to construction, the City's respective contractor(s) shall develop a Coordinated Transportation Management Plan, and the City and its contractor(s) shall work with other projects' contractors and appropriate County and/or City departments (e.g., Emergency Services, Fire, Police, Transportation) as needed to prepare and implement a transportation management plan for roadways adjacent to and directly affected by the Master Plan improvements or the WPF, and to address the transportation impact of the overlapping construction projects within the vicinity of the Master Plan or the WPF in the region. The transportation management plan shall include, but not be limited to, the following requirements: • Coordination of individual traffic control plans for the Master Plan or WPF with nearby projects. • Coordination between the contractor and other project contractors in developing circulation and detour plans that include safety features (e.g., signage and flaggers). The circulation and detour plans shall address: – Full and partial roadways closures – Circulation and detour plans to include the use of signage and flagging to guide vehicles through and/or around the construction zone, as well as any temporary traffic control devices – Bicycle/Pedestrian detour plans, where applicable – Parking along public roadways – Haul routes for construction trucks and staging areas for instances when multiple trucks arrive at the work sites – Protocols for updating the transportation management plan to account for delays or changes in the schedules of individual projects.	City's contractor(s) shall develop a plan that adheres to all measures listed. The City and its contractor(s) shall work with other project contractors, if necessary, and appropriate County and/or City departments for preparation and implementation of this plan.	City of Sunnyvale Public Works Department	Verify inclusion of this plan in the contract specifications.	Prior to construction	*Verified by:* *Date:*

TABLE 5-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY TREATMENT AND DEWATERING FACILITIES PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Air Quality					
Mitigation Measure AQ-2a: Implement BAAQMD Basic Construction Mitigation Measures. The City shall implement the following applicable BAAQMD Basic Construction Mitigation Measures to reduce emissions of fugitive dust and equipment exhaust: • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material offsite shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 mph. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator. • Post a publicly visible sign with the telephone number and person to contact at the City or City's contractor regarding dust complaints. This person shall respond and the contractor shall take corrective action within 48 hours.	City or its contractor(s) implement BAAQMD Basic Construction Measures	City of Sunnyvale Public Works Department	Verify inclusion of measures in contract specifications and construction plans. Inspect construction site to confirm compliance by the contractor, report non-compliance and ensure corrective action.	Prior to construction During construction	*Verified by:* *Date:*
Biological Resources					
Mitigation Measure BIO-2b: Minimization of Impacts on Water Quality. The following measures will be incorporated into the construction stormwater pollution prevention plan and implemented during construction of Master Plan improvements to avoid or minimize impacts on water quality: • Earth-moving in areas draining directly to wetlands and aquatic habitats will not occur during days when rain is occurring or predicted to occur (i.e., greater than 40 percent chance) during the work period. This measure applies to all Project areas with potential to drain directly to wetlands or aquatic habitats, particularly in or adjacent to the Southeast Channel, the Sunnyvale West Channel, the Cargill Channel, Ponds 1 and 2, and SCVWD Pond A4. • All permit conditions, legal requirements, and appropriate dredging and engineering practices shall be followed to avoid and minimize water quality impacts associated with Master Plan activities. Suitable erosion control, sediment control, source control, treatment control, material management, and stormwater management BMPs will be implemented consistent with the latest edition of the California Stormwater Quality Association "Stormwater Best Management Practices Handbook," available at www.capmphandbooks.com. • Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations). Feasible measures shall be implemented to ensure that hazardous materials are properly handled and the quality of aquatic resources is protected by all reasonable means when removing vegetation and sediments from the channels. • No fueling shall be done in areas immediately adjacent to (i.e., within 50 feet of) channels, ponds, or wetlands. For stationary equipment that must be fueled on site, containment shall be provided in such a manner that any accidental spill of fuel shall not be able to enter the water or contaminate sediments that may come in contact with water. Any equipment that is readily moved out of the channels, ponds, or wetlands shall not be fueled in these sensitive habitat areas or the immediate floodplains surrounding them. • A hazardous materials management/fuel spill containment plan will be developed and implemented by the construction contractor and given to all contractors and biological monitors working on the Master Plan, with at least one copy of the plan located onsite at all times. The purpose of the plan is to provide onsite construction managers, environmental compliance monitors, and regulatory agencies with a detailed description of hazardous materials management, spill prevention, and spill response/cleanup measures associated with the construction of Master Plan elements. The primary objective of the plan is to prevent a spill of hazardous materials. Elements of the plan will include, but are not limited to the following: – A discussion of hazardous materials management, including delineation of hazardous material and hazardous waste storage area, access and egress routes, waterways, emergency assembly areas, and temporary hazardous waste storage areas; – Materials Safety Data Sheets for all chemicals used and stored on site; – An inventory list of emergency equipment; – Spill control and countermeasures including employee spill prevention/response training; – Notification and documentation procedures; and – A monthly reporting plan.	City or contractor(s) to retain a qualified water quality specialist to prepare a stormwater pollution prevention plan that adheres to all measures Contractor(s) to include plan in construction plans	City of Sunnyvale Public Works Department	Verify inclusion of plan in contract specifications Review monthly hazardous materials management/fuel spill containment plan reports for compliance with measure Document dredging volumes in compliance with measure	Prior to construction During construction	*Verified by:* *Date:*

TABLE 5-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY TREATMENT AND DEWATERING FACILITIES PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Biological Resources (cont.)					
• Vehicles will be checked daily for oil or fuel leaks and will be washed only at an approved area as described above for Mitigation Measure BIO-1b. No washing of vehicles will occur in Master Plan areas located outside of the main plant fenceline. • The work site, areas adjacent to the site, and access areas will be maintained in an orderly condition, free and clear from debris and discarded materials. This measure includes all Master Plan areas located outside of the main plant fenceline. Personnel will not sweep, grade, or flush surplus materials, rubbish, debris, or dust onto adjacent areas or waterways. Upon completion of work, all building materials, debris, unused materials, concrete forms, and other construction-related materials will be removed from the Master Plan areas located outside of the main plant fenceline. • Stockpiled materials outside of the main plant fenceline will be covered by plastic sheeting, tarps, or similar material that can be secured during wind and rain. A sediment fence or berm will be installed around stockpiled dredged material to prevent runoff from transporting sediment into sensitive habitats (such as the channels, ponds, and wetlands). Heavy equipment will not be operated in the active channels or within wetland habitats, but instead from existing hardscape, access roads, and levees. • Water conservation methods will ensure that water used in the Master Plan area does not create surface flows capable of carrying pollutants to the nearby creek channel. All personnel, including sub-contractors will be instructed on the practical methods of preventing leaks or over-use of watering, and will be required to adhere to the practices in the detail sheets provided. Woody debris from tree trimming and other activities will not be left in the active channels or in wetland habitats. • In-channel vegetation removal may result in increased local erosion in the channels due to increased flow velocity. To minimize such erosion, the toe of the bank will be protected by leaving vegetation within the channel to the maximum extent practicable. Cofferdams or silt fencing will be used to the extent feasible during construction and maintenance activities that could potentially result in substantial siltation of open water. For any work within aquatic or wetland habitats, such as Ponds 1 and 2 or the Cargill Channel, silt curtains will be installed to prevent suspended sediments from migrating out of the immediate work area, and dredging will be conducted on incoming tides to the extent feasible to further reduce the potential for sediment mobilization outside the Master Plan area. Dredging within aquatic or wetland habitats will be conducted with a closed clamshell-style dredge to reduce the amount of suspended sediment produced. Dredge volumes will be documented to ensure compliance with and adequate performance of these measures.					
Mitigation Measure BIO-2h: Nesting Bird Measures. The following measures will be implemented throughout the Master Plan area to minimize impacts on nesting San Francisco common yellowthroat, Alameda song sparrow, and other native bird species: • Nesting deterrence can be implemented to minimize the potential for nesting birds to constrain project activities or to be adversely affected by those activities. The most effective nesting deterrence in non-developed portions of the main plant is vegetation removal to remove nesting substrate. Vegetation that is to be affected by the project should be removed during the nonbreeding season (i.e., September 1 through January 31) if feasible. If necessary, removal of nest-starts (incomplete nests that do not yet contain eggs or young) by qualified biologists may occur during the breeding season. Such nest-start removal may begin early in the breeding season (e.g., February) and continue regularly until vegetation can be removed and construction commences. Some species, such as barn swallows or black phoebes, may establish nests on buildings or other structures. To deter birds from nesting on structures, netting or other deterrence devices may be installed to preclude birds from constructing nests. Such nesting deterrence should be implemented under the supervision of qualified biologists in order to prevent death or injury of birds as a result of improperly installed deterrence devices, and such devices will require regular maintenance to ensure that they are functioning properly. • Prior to commencement of new activities (i.e., activities that are not currently ongoing in any given area) during the breeding season (February 1 through August 31), preconstruction surveys will be conducted by a qualified biologist no more than 7 days prior to the initiation of new disturbance in any given area to ensure that no active nests of species protected by the Migratory Bird Treaty Act or California Fish and Game Code will be disturbed during Master Plan implementation. During this survey, the biologist will inspect all potential nesting habitats (e.g., trees, shrubs, buildings, and various substrates on the ground) in the project area for nests. This survey will include suitable nesting substrates both within and outside the main plant fenceline. Surveys will be conducted within search radii corresponding to disturbance-free buffer zones described below for raptors (300 feet) and non-raptors (100 feet), including offsite areas adjacent to the Master Plan area (where such areas are accessible and are contained in the buffer zones). • If an active nest is found, a qualified biologist will determine the extent of a disturbance-free buffer zone to be established around the nest until nesting has been completed. Disturbance-free buffer zones are typically 300 feet for raptors and 100 feet for non-raptors, although factors such as existing disturbance and vegetation or structures that screen construction activities from a nest will be considered in determining the appropriate buffer. Nests will be considered active until surveys conducted by a qualified ornithologist confirm nesting is complete. However, construction within these radii may proceed if, based on monitoring of the birds behavior, a qualified biologist determines that such activities are not likely to result in the abandonment of the nest. Per CDFW recommendations, monitoring will be conducted as follows: – A qualified biologist will monitor activity at each nest for three days prior to the onset of construction activities to develop a baseline of the normal behavior of the birds attending the nest. If the behavior observed at the nest is consistent on Days 1 and 2 of monitoring, Day 3 of monitoring may be skipped.	Contractor(s) to prepare construction plans that include schedule of vegetation removal, nest deterrence, preconstruction surveys, and buffer zones Contractor to identify qualified biologist to conduct nesting deterrence measures Contractor to remove vegetation within non-breeding season Biologist to implement nesting deterrence measures	City of Sunnyvale Public Works Department	Review qualifications of Contractor-nominated biologist and either approve or recommend identification of additional candidates. Verify inclusion of measures in contract specifications and construction plans	Prior to construction	*Verified by:* *Date:*

TABLE 5-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY TREATMENT AND DEWATERING FACILITIES PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Biological Resources (cont.)					
– A qualified biologist will monitor activity at each nest for 8 hours on the first day that construction occurs within the standard buffer (e.g., within 100 feet of a non-raptor nest). If the biologist determines that the birds' behavior is not adversely affected, Master Plan activities may continue. The biologist should continue to monitor the nests for 1 hour/day on any day when construction activities occur within the standard buffer around an active nest. – If at any time the biologist determines that Master Plan activities within the standard buffer is adversely affecting the behavior of the birds such that the nest is in jeopardy of failing, construction activities should retreat to honor the standard buffer until the nest is no longer active (i.e., the young have fledged)					
Hazards and Hazardous Materials					
Mitigation Measure HAZ-2b: Health and Safety Plan. For each Master Plan improvement involving ground disturbing activities, the City or its contractor will prepare a Health and Safety Plan in accordance with federal OSHA regulations (29 CFR 1910.120) and Cal/OSHA regulations (8 CCR Title 8, Section 5192). Each Plan will be based on all activities proposed as part of the specific project and include designated personnel responsible for implementation of the Plan. The City will require each contractor for each individual construction contract to implement a Plan. Each Plan will include all required measures to protect construction workers and the general public potentially exposed to hazardous materials or wastes by including engineering controls, monitoring, and security measures to prevent dangerous levels of exposure and unauthorized entry to the construction area, and to reduce hazards outside of any construction area. If prescribed contaminant exposure levels are exceeded, personal protective equipment shall be required for workers in accordance with state and federal regulations. Compliance with the Health and Safety Plan will not be construed as approval of the adequacy of the contractor's health and safety professional's qualifications or any safety measure taken in or near the construction site. The contractor will be solely and fully responsible for compliance with all laws, rules, and regulations applicable to health and safety during the performance of the construction work.	Contractor(s) to prepare Health and Safety Plan and incorporate Plan in construction plans Contractor(s) to implement Plan	City of Sunnyvale Public Works Department	Review each Health and Safety Plan Verify inclusion of Plan in contract specifications for each individual construction contract	Prior to ground disturbance	*Verified by:* *Date:*
Mitigation Measure HAZ-2c: Soil and Groundwater Management Plan. For any elements involving ground disturbing activities, the City will require the construction contractor to implement a Soil and Groundwater Management Plan, subject to review by the City that specifies the method for handling and disposal of contaminated soil and groundwater prior to demolition, excavation, and construction activities. The plan will include all necessary procedures to ensure that any excavated materials and fluids from throughout the Master Plan area generated during construction are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations. The plan will include the following information. • Step-by-step procedures for evaluation, handling, stockpiling, storage, testing, and disposal of excavated material, including criteria for reuse and offsite disposal. All excavated materials shall be inspected prior to initial stockpiling, and spoils that are visibly stained and/or have a noticeable odor shall be stockpiled separately to minimize the amount of material that may require special handling. • Procedures to be implemented if unknown subsurface conditions or contamination are encountered, such as previously unreported tanks, wells, or contaminated soils. • Detailed control measures for use and storage of hazardous materials to prevent the release of pollutants to the environment, and emergency procedures for the containment and cleanup of accidental releases of hazardous materials to minimize the impacts of any such release. These procedures shall also include reporting requirements in the event of a reportable spill or other emergency incident. At a minimum, the City or its contractor shall notify applicable agencies in accordance with guidance from the California Office of Emergency Services as well as the Santa Clara County Environmental Health Department. • Procedures for containment, handling and disposal of groundwater generated from construction dewatering, the method used to analyze groundwater for hazardous materials likely to be encountered at specific locations and the appropriate treatment and/or disposal methods.	Contractor to prepare Soil and Groundwater Management Plan Contractor to implement Plan	City of Sunnyvale Public Works Department	Review Soil and Groundwater Management Plan Verify inclusion of Plan in contract specifications	Prior to ground disturbance	*Verified by:* *Date:*
Cultural Resources					
Mitigation Measure CUL-2: Unanticipated Discovery of Archaeological Resources. If prehistoric or historic-period archaeological resources are encountered, all construction activities within 100 feet will halt and the City of Sunnyvale will be notified. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking 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-era materials might include deposits of metal, glass, and/or ceramic refuse. A Secretary of the Interior-qualified archaeologist will inspect the findings within 24 hours of discovery. If it is determined that the project could damage a historical resource or a unique archaeological resource (as defined pursuant to the CEQA Guidelines), mitigation will be implemented in accordance with PRC Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. Consistent with Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance is not feasible, a qualified archaeologist will prepare and implement a detailed treatment plan in consultation with City of Sunnyvale and, for prehistoric resources, the appropriate Native American representative. Treatment of unique archaeological resources will follow the applicable requirements of PRC Section 21083.2. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by	City or Contractor to retain cultural resources expert to conduct preconstruction worker environmental awareness training on recognition of archaeological resources Contractor to notify City of Sunnyvale if resources encountered Secretary of the Interior-qualified archaeologist will inspect the findings within 24 hours of discovery Archaeologist, City, and contractor to implement mitigation as determined by archaeologist	City of Sunnyvale Public Works Department	Verify inclusion of requirements in contract specifications	Prior to ground disturbance	*Verified by:* *Date:*

TABLE 5-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY TREATMENT AND DEWATERING FACILITIES PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Cultural Resources (cont.)					
the project. The treatment plan will include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and state repositories, libraries, and interested professionals.					
Mitigation Measure CUL-3: Unanticipated Discovery of Paleontological Resources. If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a qualified paleontologist can assess the nature and importance of the find and, if necessary, develop appropriate treatment measures in conformance with Society of Vertebrate Paleontology standards, and in consultation with the City of Sunnyvale.	City or Contractor to retain cultural resources expert to conduct preconstruction worker environmental awareness training on recognition of archaeological resources Contractor to notify City of Sunnyvale if resources encountered	City of Sunnyvale Public Works Department	Verify inclusion of requirements in contract specifications	Prior to ground disturbance	*Verified by:* *Date:*
Mitigation Measure CUL-4: Unanticipated Discovery of Human Remains. In the event of discovery or recognition of any human remains during construction activities, such activities within 100 feet of the find will cease until the Santa Clara County Coroner has been contacted to determine that no investigation of the cause of death is required. The NAHC will be contacted within 24 hours if it is determined that the remains are Native American. The NAHC will then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to the City of Sunnyvale for the appropriate means of treating the human remains and any grave goods.	Contractor(s) shall monitor worker activities Contractor(s) shall halt work and notify the County Coroner, if necessary. If appropriate, Coroner shall notify NAHC. NAHC shall notify Most Likely Descendant (MLD).	City of Sunnyvale Public Works Department	Verify inclusion of requirements in contract specifications	Prior to ground disturbance	*Verified by:* *Date:*

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TABLE 5-2
ADOPTED MITIGATION MEASURES THAT DO NOT APPLY TO THE PROJECT

Adopted Mitigation Measures		Reason Measure Does Not Apply to Administration and Laboratory Building Project
Mitigation Measure NOI-1:	Develop and Implement Construction Noise Logistics Plan	Does not apply due to construction hours
Mitigation Measure AQ-2b:	Implement BAAQMD Additional Construction Mitigation Measures	Does not apply due to nature of project activities.
Mitigation Measure BIO-1a:	Reduce Impacts on Congden's Tarplant	Does not apply due to location and nature of project activities.
Mitigation Measure BIO-1b:	Prevent the Introduction and Spread of Non-native, Invasive Species	Does not apply due to location.
Mitigation Measure BIO-2a:	Worker Environmental Awareness Training	Does not apply due to location and nature of project activities.
Mitigation Measure BIO-2c:	Special-Status Fish Measures	Does not apply due to location.
Mitigation Measure BIO-2d:	Western Pond Turtle Measures	Does not apply due to location.
Mitigation Measure BIO-2e:	Burrowing Owl Measures	Does not apply due to location and nature of project activities.
Mitigation Measure BIO-2f:	California Ridgway's Rail and California Black Rail Measures	Does not apply due to location.
Mitigation Measure BIO-2g:	Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew Measures	Does not apply due to location.
Mitigation Measure BIO-3a:	Avoidance of Open Water and Wetland Habitats	Does not apply due to location.
Mitigation Measure BIO-3b:	Compensatory Mitigation for Aquatic and Wetland Habitats	Does not apply due to nature of project activities.
Mitigation Measure BIO-4a:	Avoidance and Preservation of Trees	Does not apply due to location.
Mitigation Measure BIO-4b:	Master Plan Compensation for Impacts on Protected Trees	Does not apply due to location.
Mitigation Measure HYD-2:	Hydraulic Analysis of Levee Widening	Does not apply due to nature of project activities.
Mitigation Measure HYD-3a:	Flood Hazard Assessment and Design For Diurnal Equalization Tanks, Pump Station, and Pipeline	Does not apply due to nature of project activities.
Mitigation Measure HYD-3b:	Restoration Plan for Ponds 1 and 2	Does not apply due to nature of project activities.
Mitigation Measure HYD-3c:	Flood Protection Prior to Levee Breaching	Does not apply due to nature of project activities.
Mitigation Measure WQ-4:	Water Quality Evaluation and Control Plan for Oxidation Pond Breaching and Restoration	Does not apply due to nature of project activities.
Mitigation Measure HAZ-2a:	Hazardous Building Materials Abatement	Does not apply due to nature of project activities.
Mitigation Measure CUL-1.	Assessment of Effects to Cargill Channel	Does not apply due to nature of project and location.
Mitigation Measure AES-1:	Levee Plantings and Visual Screening	Does not apply due to nature of project and location.
Mitigation Measure GI-1:	Update Projections	Does not apply due to nature of project activities.

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APPENDIX A

Air Quality Supporting Information

CalEEMod INPUTS FOR CONSTRUCTION AND OPERATION

Construction Schedule

	Schedule Provided			Schedule Used in CalEEMod		
Construction Phase	**Start**	**End**	**Number of Workdays**	**Start**	**End**	**Number of Workdays**
Phase 1: Earthwork and Site Work for Structures	Jul-22	Jul-23	252	7/1/2022	6/19/2023	252
Phase 2: Facility Construction	Jul-23	Jul-25	504	7/1/2023	6/5/2025	504

Construction Vehicle Trips

Construction Phase	**Workdays**	**Workers/day**	**Worker trips/day**	**Material delivery trips/day**	**Off-haul trips/day**	**Fill trips/day**	**Haul trips/phase**
Phase 1: Earthwork and Site Work for Structures	252	130	260	9	53	8	15320
Phase 2: Facility Construction	504	130	260	17	9	0	4400

Construction Trip Lengths

Trip Type	**miles/one-way trip**
Worker commute	12.5
Fill/Off-haul trips	25
Material delivery trips	25

Operational Trips	**one-way trips/month**	**miles/one-way trip**
Chemical Deliveries	84	25
Residuals Hauling	152	25
Total	236	

CONSTRUCTION EQUIPMENT AND ACTIVITY LEVEL

Equipment	Number	Avg Operation, Hrs/Day	Total Work Days	Assumption (hp)	Adjusted hrs/day
Phase 1: Earthwork and Site Work for Structures					
Excavator	4	6	29	188	0.7
Dozer/Loader	4	6	22	105	0.5
Roller	2	6	3	95	0.1
Hauling On Site	1	6	32	350	0.8
Hauling Off Site	1	6	223	350	5.3
Crawler Crane/RT Crane	1	6	126	350	3.0
Pile Drivers	1	6	80	250	1.9
Water Truck	1	8	255	189	8.1
Phase 2: Facility Construction					
Dozer/Loader	1	6	79	105	0.9
Grader	1	6	10	173	0.1
Roller	1	6	38	95	0.5
Hauling On Site	2	6	81	350	1.0
Hauling Off Site	2	6	43	350	0.5
Concrete Truck	2	6	121	300	1.4
Paving Equipment	1	6	3	174	0.0
Crawler Crane/RT Crane	3	6	98	350	1.2
Water Truck	1	8	210	189	3.3

EMISSIONS SUMMARIES

CONSTRUCTION EMISSIONS - Criteria Air Pollutants

Construction Year	No. of Construction Days	Tons over Construction Period				Average Pounds per day			
		ROG	NOx	Exhaust PM-10	Exhaust PM-2.5	ROG	NOx	Exhaust PM-10	Exhaust PM-2.5
2022	131	0.13	1.65	0.02	0.02	2.0	25.2	0.3	0.3
2023	251	0.17	1.65	0.03	0.03	1.3	13.1	0.2	0.2
2024	262	0.12	1.11	0.03	0.02	0.9	8.5	0.2	0.2
2025	112	0.05	0.44	0.01	0.01	0.9	7.8	0.2	0.2
Project Total	756	0.47	4.85	0.08	0.07	1.3	12.8	0.2	0.2

CONSTRUCTION EMISSIONS - GHG (metric tons)

Construction Year	CO_2	CH_4	N_2O	CO_2e
2022	608.0	0.04	0.0	609.1
2023	765.7	0.07	0.0	767.5
2024	445.5	0.06	0.0	447.0
2025	189.3	0.03	0.0	189.9
Project Total	2008.5	0.20	0.0	2013.5
Life of project (years)				30
Ave. annual emissions (tons/year)				67.0

OPERATIONAL EMISSIONS - Criteria Air Pollutants

Source	Annual (tons/year)				Average Pounds per day			
	ROG	NOx	Total PM-10	Total PM-2.5	ROG	NOx	Total PM-10	Total PM-2.5
Truck Trips	0.01	0.24	0.03	0.01	0.05	1.3	0.2	0.05
Generator	0.02	0.31	0.02	0.02	0.1	1.7	0.1	0.1
Project Total	0.02	0.56	0.05	0.02	0.1	3.0	0.3	0.1

OPERATIONAL EMISSIONS - GHG (metric tons per year)

Source	CO_2	CH_4	N_2O	CO_2e
Delivery trucks	121.5	0.005	0.000	121.6
Generator				71.2
Increased energy demand				0.1
Project Operational Total				192.9
Amortized construction emissions				67.0
PROJECT TOTAL				259.8

Operational GHG emissions from increased energy use

	CO_2	CH_4	N_2O
Emission Factor[1] (lb/MWh)	210	0.034	0.004
Project annual energy demand (MWh/year)	1	1	1
Conversion from lbs to metric tons	0.000453592	0.000453592	0.000453592
GHG emissions (metric tons/year)	0.1	0.0000	0.0000
GWP[2]	1	25	298
GHG emissions as CO_2e (metric tons/year)	0.1	0.0	0.0
Total GHG emissions as CO_2e (metric tons/year)	0.1		

NOTES:

1. Source for GHG emission factors: https://www.epa.gov/sites/production/files/2020-01/documents/egrid2018_summary_tables.pdf, http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf

2. Source for GWP: https://www.arb.ca.gov/cc/inventory/background/gwp.htm

EMERGENCY GENERATOR EMISSIONS

Conversion Factors

HP/kW	1.3410	
lb/g	0.0022	
lb/ton	2,000	
Metric ton/ton	0.90719	
PM_{10} Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
$PM_{2.5}$ Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO_2 kg/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH_4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N_2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH_4	25	IPCC AR4, https://ww2.arb.ca.gov/ghg-gwps
GWP N_2O	298	IPCC AR4, https://ww2.arb.ca.gov/ghg-gwps
CO_2e g/gal	10,302	
CO_2 g/gal	10,210	
CO_2/CO_2e	0.9911	

Generator Rating:	2,000	kW	*(Source: Project Description)*
	2,682	HP	*(based on conservative engineering assumptions; conversion from kW to hp)*
Load Factor:	0.74		*(based on CalEEMod Generator Set Load Factor)*
Engine Emissions Tier:			*(compliance with CARB diesel regulations)*
Operating Hours per Unit:	50	hours/year	
	1.00	hours/day - maximum	
	0.14	hours/day - average	

Units	Criteria Pollutants [1, 2]					Greenhouse Gases [3]	
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$	CO_2	CO_2e
g/kW-hr	—	—	3.50	—	—	—	—
g/HP-hr	0.15	2.85	2.61	0.1440	0.1406	526.17	530.91
lbs/hr	0.66	12.47	11.42	0.63	0.61	3111.12	3,139.15
lbs/day(maximum daily)	0.66	12.47	11.42	0.63	0.61	3111.12	3139.15
lbs/day (average daily)	**0.09**	**1.71**	**1.56**	**0.09**	**0.08**	**426.18**	430.02
lbs/yr	32.82	623.50	570.99	31.50	30.75	155,556.00	156,957.38
tons/yr	0.02	0.31	0.29	0.016	0.015	77.78	78.48
metric tons/yr	—	—	—	—	—	**70.56**	**71.19**

Notes:

1. Emission factors for VOC and NOX: ARB 2011 Final Regulation Order for the ATCM for stationary engines, Table 1, Model year 2008+: https://www.arb.ca.gov/regact/2010/atcm2010/finalregorder.pdf; Policy: CARB Emission Factors for CI Diesel Engines – Percent HC in Relation to NMHC + NOx: http://www.baaqmd.gov/~/media/Files/Engineering/policy_and_procedures/Engines/EmissionFactorsforDieselEngines.ashx
2. Emission factors for CO, PM_{10}, and $PM_{2.5}$: ARB 2011 Final Regulation Order for the ATCM for stationary engines, Table 1, Model year 2008+: https://www.arb.ca.gov/regact/2010/atcm2010/finalregorder.pdf
3. Emission factor for CO_2: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1. Emissions of GHGs assume 99.11% of the CO_2e emissions occur as CO_2, based on Climate Registry emission factors as referenced above.

Sunnyvale Secondary Project - Santa Clara County, Annual

Sunnyvale Secondary Project

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	1.00	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	3			**Operational Year**	2026
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - <http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf>

Land Use - Unit areas assumed

Construction Phase - Project schedule

Off-road Equipment - Phase not used

Off-road Equipment - Phase not used

Off-road Equipment - Phase not used

Off-road Equipment - Project data

Off-road Equipment - Project data

Off-road Equipment - Phase not used

Trips and VMT - Project data

Vehicle Trips - Operational data. Trip length of operational truck trips assumed to be 25 miles.

Energy Use -

Fleet Mix - All truck trips assumed to be heavy duty trucks

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	2.00	252.00
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	100.00	504.00
tblFleetMix	HHD	0.02	1.00
tblFleetMix	LDA	0.62	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	5.0300e-003	0.00
tblFleetMix	MCY	5.2040e-003	0.00
tblFleetMix	MDV	0.10	0.00
tblFleetMix	MH	6.8100e-004	0.00
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	2.1950e-003	0.00
tblFleetMix	SBUS	6.3800e-004	0.00
tblFleetMix	UBUS	1.5020e-003	0.00

tblGrading	AcresOfGrading	0.00	0.75
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.02	1.00
tblOffRoadEquipment	HorsePower	231.00	350.00
tblOffRoadEquipment	HorsePower	97.00	105.00
tblOffRoadEquipment	HorsePower	97.00	105.00
tblOffRoadEquipment	HorsePower	231.00	350.00
tblOffRoadEquipment	HorsePower	158.00	188.00
tblOffRoadEquipment	HorsePower	187.00	173.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	189.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	300.00
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tblOffRoadEquipment	HorsePower	132.00	174.00
tblOffRoadEquipment	HorsePower	80.00	95.00
tblOffRoadEquipment	HorsePower	80.00	95.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	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	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	1.20
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.90
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.50

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripNumber	0.00	15,320.00
tblTripsAndVMT	HaulingTripNumber	0.00	4,400.00
tblTripsAndVMT	VendorTripLength	6.60	7.30
tblTripsAndVMT	VendorTripLength	6.60	25.00
tblTripsAndVMT	VendorTripLength	6.60	7.30
tblTripsAndVMT	VendorTripLength	6.60	7.30
tblTripsAndVMT	VendorTripLength	6.60	7.30
tblTripsAndVMT	VendorTripLength	6.60	25.00
tblTripsAndVMT	VendorTripNumber	0.00	9.00
tblTripsAndVMT	VendorTripNumber	0.00	17.00
tblTripsAndVMT	WorkerTripLength	10.80	12.50
tblTripsAndVMT	WorkerTripLength	10.80	1.25
tblTripsAndVMT	WorkerTripNumber	35.00	260.00
tblTripsAndVMT	WorkerTripNumber	0.00	260.00
tblVehicleTrips	CC_TL	6.60	7.30
tblVehicleTrips	CC_TTP	28.00	0.00
tblVehicleTrips	CNW_TL	6.60	7.30
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CW_TL	14.70	25.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.32	7.87
tblVehicleTrips	SU_TR	0.68	7.87
tblVehicleTrips	WD_TR	6.97	7.87

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					
2022	0.1342	1.6479	1.006	6.45E-03	0.3127	0.0192	0.3319	0.083	0.0178	0.1008	0	607.9993	607.9993	0.0449	0	609.1215
2023	0.1694	1.6482	1.3254	8.16E-03	0.3766	0.0275	0.404	0.0999	0.0253	0.1253	0	765.7384	765.7384	0.0694	0	767.4728
2024	0.121	1.111	0.8993	4.80E-03	0.1226	0.0251	0.1477	0.0337	0.0231	0.0568	0	445.5049	445.5049	0.0594	0	446.9911
2025	0.049	0.4391	0.3704	2.04E-03	0.0724	9.41E-03	0.0818	0.0193	8.67E-03	0.028	0	189.2598	189.2598	0.0254	0	189.8937
Maximum	**0.1694**	**1.6482**	**1.3254**	**8.16E-03**	**0.3766**	**0.0275**	**0.404**	**0.0999**	**0.0253**	**0.1253**	**0**	**765.7384**	**765.7384**	**0.0694**	**0**	**767.4728**

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					
2022	0.1342	1.6479	1.006	6.45E-03	0.3127	0.0192	0.3319	0.083	0.0178	0.1008	0	607.9992	607.9992	0.0449	0	609.1214

2023	0.1694	1.6482	1.3254	8.16E-03	0.3766	0.0275	0.404	0.0999	0.0253	0.1253	0	765.7382	765.7382	0.0694	0	767.4726
2024	0.121	1.111	0.8993	4.80E-03	0.1226	0.0251	0.1477	0.0337	0.0231	0.0568	0	445.5047	445.5047	0.0594	0	446.9909
2025	0.049	0.4391	0.3704	2.04E-03	0.0724	9.41E-03	0.0818	0.0193	8.67E-03	0.028	0	189.2597	189.2597	0.0254	0	189.8936
Maximum	**0.1694**	**1.6482**	**1.3254**	**8.16E-03**	**0.3766**	**0.0275**	**0.404**	**0.0999**	**0.0253**	**0.1253**	**0**	**765.7382**	**765.7382**	**0.0694**	**0**	**767.4726**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-1-2022	9-30-2022	0.8793	0.8793
2	10-1-2022	12-31-2022	0.9024	0.9024
3	1-1-2023	3-31-2023	0.6328	0.6328
4	4-1-2023	6-30-2023	0.5498	0.5498
5	7-1-2023	9-30-2023	0.3212	0.3212
6	10-1-2023	12-31-2023	0.3235	0.3235
7	1-1-2024	3-31-2024	0.3066	0.3066
8	4-1-2024	6-30-2024	0.3044	0.3044
9	7-1-2024	9-30-2024	0.3077	0.3077
10	10-1-2024	12-31-2024	0.3100	0.3100
11	1-1-2025	3-31-2025	0.2810	0.2810
12	4-1-2025	6-30-2025	0.2045	0.2045
		Highest	0.9024	0.9024

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	4.43E-03	0	1.00E-05	0		0	0		0	0	0	2.00E-05	2.00E-05	0	0	2.00E-05
Energy	1.10E-04	1.02E-03	8.60E-04	1.00E-05		8.00E-05	8.00E-05		8.00E-05	8.00E-05	0	1.9539	1.9539	1.40E-04	4.00E-05	1.9705
Mobile	8.31E-03	0.2442	0.0901	1.25E-03	0.0303	4.90E-04	0.0308	8.34E-03	4.70E-04	8.81E-03	0	121.4517	121.4517	5.04E-03	0	121.5778
Waste						0	0		0	0	0.2517	0	0.2517	0.0149	0	0.6236
Water						0	0		0	0	0.0734	0.1192	0.1926	7.55E-03	1.80E-04	0.4354
Total	**0.0129**	**0.2452**	**0.091**	**1.26E-03**	**0.0303**	**5.70E-04**	**0.0309**	**8.34E-03**	**5.50E-04**	**8.89E-03**	**0.3251**	**123.5248**	**123.8499**	**0.0276**	**2.20E-04**	**124.6074**

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	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.1000e-004	1.0200e-003	8.6000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.9539	1.9539	1.4000e-004	4.0000e-005	1.9705
Mobile	8.3100e-003	0.2442	0.0901	1.2500e-003	0.0303	4.9000e-004	0.0308	8.3400e-003	4.7000e-004	8.8100e-003	0.0000	121.4517	121.4517	5.0400e-003	0.0000	121.5778
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.6236
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1192	0.1926	7.5500e-003	1.8000e-004	0.4354
Total	**0.0129**	**0.2452**	**0.0910**	**1.2600e-003**	**0.0303**	**5.7000e-004**	**0.0309**	**8.3400e-003**	**5.5000e-004**	**8.8900e-003**	**0.3251**	**123.5248**	**123.8499**	**0.0276**	**2.2000e-004**	**124.6074**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2022	6/30/2022	5	0	
2	Phase 1 - Earthwork and Sitework for Structures	Grading	7/1/2022	6/19/2023	5	252	
3	Site Preparation	Site Preparation	7/15/2022	7/14/2022	5	0	
4	Paving	Paving	12/7/2022	12/6/2022	5	0	
5	Architectural Coating	Architectural Coating	12/14/2022	12/13/2022	5	0	
6	Phase 2 - Facility Construction	Building Construction	7/1/2023	6/5/2025	5	504	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Phase 1 - Earthwork and Sitework for Structures	Cranes	1	3.00	350	0.29
Phase 1 - Earthwork and Sitework for Structures	Excavators	4	0.70	188	0.38
Phase 1 - Earthwork and Sitework for Structures	Graders	0	0.00	187	0.41
Phase 1 - Earthwork and Sitework for Structures	Off-Highway Trucks	1	0.80	350	0.38
Phase 1 - Earthwork and Sitework for Structures	Off-Highway Trucks	1	8.10	189	0.38
Phase 1 - Earthwork and Sitework for Structures	Other Construction Equipment	1	1.90	250	0.42
Phase 1 - Earthwork and Sitework for Structures	Rollers	2	0.10	95	0.38
Phase 1 - Earthwork and Sitework for Structures	Rubber Tired Dozers	0	0.00	247	0.40
Phase 1 - Earthwork and Sitework for Structures	Tractors/Loaders/Backhoes	4	0.50	105	0.37
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	0	0.00	130	0.42
Paving	Paving Equipment	0	0.00	132	0.36
Paving	Rollers	0	0.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Architectural Coating	Air Compressors	0	0.00	78	0.48
Phase 2 - Facility Construction	Cranes	3	1.20	350	0.29
Phase 2 - Facility Construction	Forklifts	0	0.00	89	0.20
Phase 2 - Facility Construction	Generator Sets	0	0.00	84	0.74
Phase 2 - Facility Construction	Graders	1	0.10	173	0.41
Phase 2 - Facility Construction	Off-Highway Trucks	2	1.00	350	0.38
Phase 2 - Facility Construction	Off-Highway Trucks	2	1.40	300	0.38
Phase 2 - Facility Construction	Off-Highway Trucks	1	3.30	189	0.38
Phase 2 - Facility Construction	Paving Equipment	1	0.10	174	0.36
Phase 2 - Facility Construction	Rollers	1	0.50	95	0.38
Phase 2 - Facility Construction	Tractors/Loaders/Backhoes	1	0.90	105	0.37
Phase 2 - Facility Construction	Welders	0	0.00	46	0.45

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
Demolition	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 - Earthwork and Sitework for Structures	14	260.00	9.00	15,320.00	12.50	25.00	25.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 - Facility Construction	12	260.00	17.00	4,400.00	1.25	25.00	25.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Phase not used

3.3 Phase 1 - Earthwork and Sitework for Structures - 2022

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					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0400	0.3591	0.2986	9.0000e-004		0.0144	0.0144		0.0132	0.0132	0.0000	78.9021	78.9021	0.0255	0.0000	79.5400
Total	**0.0400**	**0.3591**	**0.2986**	**9.0000e-004**	**4.0000e-004**	**0.0144**	**0.0148**	**4.0000e-005**	**0.0132**	**0.0133**	**0.0000**	**78.9021**	**78.9021**	**0.0255**	**0.0000**	**79.5400**

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	0.0352	1.1354	0.2716	3.7200e-003	0.1428	3.5200e-003	0.1463	0.0375	3.3700e-003	0.0409	0.0000	360.3322	360.3322	0.0155	0.0000	360.7197
Vendor	4.2500e-003	0.1163	0.0314	4.6000e-004	0.0132	3.7000e-004	0.0136	3.8300e-003	3.5000e-004	4.1800e-003	0.0000	44.5643	44.5643	1.2700e-003	0.0000	44.5961
Worker	0.0547	0.0371	0.4044	1.3700e-003	0.1563	9.5000e-004	0.1573	0.0416	8.7000e-004	0.0424	0.0000	124.2007	124.2007	2.6000e-003	0.0000	124.2656
Total	**0.0941**	**1.2887**	**0.7074**	**5.5500e-003**	**0.3123**	**4.8400e-003**	**0.3171**	**0.0829**	**4.5900e-003**	**0.0875**	**0.0000**	**529.0972**	**529.0972**	**0.0194**	**0.0000**	**529.5814**

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-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0400	0.3591	0.2986	9.0000e-004		0.0144	0.0144		0.0132	0.0132	0.0000	78.9020	78.9020	0.0255	0.0000	79.5399
Total	**0.0400**	**0.3591**	**0.2986**	**9.0000e-004**	**4.0000e-004**	**0.0144**	**0.0148**	**4.0000e-005**	**0.0132**	**0.0133**	**0.0000**	**78.9020**	**78.9020**	**0.0255**	**0.0000**	**79.5399**

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	0.0352	1.1354	0.2716	3.7200e-003	0.1428	3.5200e-003	0.1463	0.0375	3.3700e-003	0.0409	0.0000	360.3322	360.3322	0.0155	0.0000	360.7197
Vendor	4.2500e-003	0.1163	0.0314	4.6000e-004	0.0132	3.7000e-004	0.0136	3.8300e-003	3.5000e-004	4.1800e-003	0.0000	44.5643	44.5643	1.2700e-003	0.0000	44.5961
Worker	0.0547	0.0371	0.4044	1.3700e-003	0.1563	9.5000e-004	0.1573	0.0416	8.7000e-004	0.0424	0.0000	124.2007	124.2007	2.6000e-003	0.0000	124.2656

Total	**0.0941**	**1.2887**	**0.7074**	**5.5500e-003**	**0.3123**	**4.8400e-003**	**0.3171**	**0.0829**	**4.5900e-003**	**0.0875**	**0.0000**	**529.0972**	**529.0972**	**0.0194**	**0.0000**	**529.5814**

3.3 Phase 1 - Earthwork and Sitework for Structures - 2023

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					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0349	0.2940	0.2667	8.3000e-004		0.0118	0.0118		0.0109	0.0109	0.0000	72.8848	72.8848	0.0236	0.0000	73.4741
Total	**0.0349**	**0.2940**	**0.2667**	**8.3000e-004**	**4.0000e-004**	**0.0118**	**0.0122**	**4.0000e-005**	**0.0109**	**0.0109**	**0.0000**	**72.8848**	**72.8848**	**0.0236**	**0.0000**	**73.4741**

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	0.0222	0.6746	0.2285	3.3000e-003	0.1411	1.3300e-003	0.1425	0.0369	1.2700e-003	0.0382	0.0000	320.0075	320.0075	0.0130	0.0000	320.3333
Vendor	2.8900e-003	0.0729	0.0261	4.2000e-004	0.0122	1.5000e-004	0.0124	3.5300e-003	1.4000e-004	3.6700e-003	0.0000	40.0538	40.0538	1.0600e-003	0.0000	40.0804
Worker	0.0474	0.0308	0.3438	1.2200e-003	0.1444	8.6000e-004	0.1452	0.0384	7.9000e-004	0.0392	0.0000	110.3609	110.3609	2.1500e-003	0.0000	110.4146
Total	**0.0724**	**0.7784**	**0.5984**	**4.9400e-003**	**0.2977**	**2.3400e-003**	**0.3001**	**0.0789**	**2.2000e-003**	**0.0811**	**0.0000**	**470.4222**	**470.4222**	**0.0162**	**0.0000**	**470.8283**

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-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0349	0.2940	0.2667	8.3000e-004		0.0118	0.0118		0.0109	0.0109	0.0000	72.8847	72.8847	0.0236	0.0000	73.4740
Total	**0.0349**	**0.2940**	**0.2667**	**8.3000e-004**	**4.0000e-004**	**0.0118**	**0.0122**	**4.0000e-005**	**0.0109**	**0.0109**	**0.0000**	**72.8847**	**72.8847**	**0.0236**	**0.0000**	**73.4740**

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	0.0222	0.6746	0.2285	3.3000e-003	0.1411	1.3300e-003	0.1425	0.0369	1.2700e-003	0.0382	0.0000	320.0075	320.0075	0.0130	0.0000	320.3333
Vendor	2.8900e-003	0.0729	0.0261	4.2000e-004	0.0122	1.5000e-004	0.0124	3.5300e-003	1.4000e-004	3.6700e-003	0.0000	40.0538	40.0538	1.0600e-003	0.0000	40.0804
Worker	0.0474	0.0308	0.3438	1.2200e-003	0.1444	8.6000e-004	0.1452	0.0384	7.9000e-004	0.0392	0.0000	110.3609	110.3609	2.1500e-003	0.0000	110.4146
Total	**0.0724**	**0.7784**	**0.5984**	**4.9400e-003**	**0.2977**	**2.3400e-003**	**0.3001**	**0.0789**	**2.2000e-003**	**0.0811**	**0.0000**	**470.4222**	**470.4222**	**0.0162**	**0.0000**	**470.8283**

3.4 Site Preparation - 2022

Phase not used

3.5 Paving - 2022

Phase not used

3.6 Architectural Coating - 2022

Phase not used

3.7 Phase 2 - Facility Construction - 2023

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	0.0376	0.3172	0.2837	8.8000e-004		0.0127	0.0127		0.0116	0.0116	0.0000	77.1409	77.1409	0.0250	0.0000	77.7646
Total	**0.0376**	**0.3172**	**0.2837**	**8.8000e-004**		**0.0127**	**0.0127**		**0.0116**	**0.0116**	**0.0000**	**77.1409**	**77.1409**	**0.0250**	**0.0000**	**77.7646**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.4200e-003	0.1041	0.0353	5.1000e-004	0.0379	2.0000e-004	0.0381	9.6700e-003	2.0000e-004	9.8600e-003	0.0000	49.3722	49.3722	2.0100e-003	0.0000	49.4224
Vendor	5.8700e-003	0.1480	0.0529	8.5000e-004	0.0248	3.0000e-004	0.0251	7.1700e-003	2.8000e-004	7.4500e-003	0.0000	81.2847	81.2847	2.1500e-003	0.0000	81.3385
Worker	0.0152	6.5400e-003	0.0884	1.6000e-004	0.0157	1.8000e-004	0.0158	4.1800e-003	1.6000e-004	4.3500e-003	0.0000	14.6337	14.6337	4.5000e-004	0.0000	14.6450
Total	**0.0245**	**0.2586**	**0.1766**	**1.5200e-003**	**0.0784**	**6.8000e-004**	**0.0791**	**0.0210**	**6.4000e-004**	**0.0217**	**0.0000**	**145.2905**	**145.2905**	**4.6100e-003**	**0.0000**	**145.4059**

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	0.0376	0.3172	0.2837	8.8000e-004		0.0127	0.0127		0.0116	0.0116	0.0000	77.1408	77.1408	0.0250	0.0000	77.7645
Total	**0.0376**	**0.3172**	**0.2837**	**8.8000e-004**		**0.0127**	**0.0127**		**0.0116**	**0.0116**	**0.0000**	**77.1408**	**77.1408**	**0.0250**	**0.0000**	**77.7645**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.4200e-003	0.1041	0.0353	5.1000e-004	0.0379	2.0000e-004	0.0381	9.6700e-003	2.0000e-004	9.8600e-003	0.0000	49.3722	49.3722	2.0100e-003	0.0000	49.4224
Vendor	5.8700e-003	0.1480	0.0529	8.5000e-004	0.0248	3.0000e-004	0.0251	7.1700e-003	2.8000e-004	7.4500e-003	0.0000	81.2847	81.2847	2.1500e-003	0.0000	81.3385
Worker	0.0152	6.5400e-003	0.0884	1.6000e-004	0.0157	1.8000e-004	0.0158	4.1800e-003	1.6000e-004	4.3500e-003	0.0000	14.6337	14.6337	4.5000e-004	0.0000	14.6450
Total	**0.0245**	**0.2586**	**0.1766**	**1.5200e-003**	**0.0784**	**6.8000e-004**	**0.0791**	**0.0210**	**6.4000e-004**	**0.0217**	**0.0000**	**145.2905**	**145.2905**	**4.6100e-003**	**0.0000**	**145.4059**

3.7 Phase 2 - Facility Construction - 2024

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	0.0741	0.6007	0.5603	1.7700e-003		0.0238	0.0238		0.0219	0.0219	0.0000	155.4555	155.4555	0.0503	0.0000	156.7124
Total	**0.0741**	**0.6007**	**0.5603**	**1.7700e-003**		**0.0238**	**0.0238**		**0.0219**	**0.0219**	**0.0000**	**155.4555**	**155.4555**	**0.0503**	**0.0000**	**156.7124**

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	6.8200e-003	0.2051	0.0714	1.0200e-003	0.0410	4.1000e-004	0.0414	0.0108	3.9000e-004	0.0112	0.0000	98.7832	98.7832	4.0500e-003	0.0000	98.8844
Vendor	0.0116	0.2934	0.1041	1.7000e-003	0.0500	5.9000e-004	0.0506	0.0145	5.6000e-004	0.0150	0.0000	162.9197	162.9197	4.3000e-003	0.0000	163.0273
Worker	0.0284	0.0118	0.1635	3.1000e-004	0.0316	3.6000e-004	0.0319	8.4300e-003	3.3000e-004	8.7600e-003	0.0000	28.3467	28.3467	8.1000e-004	0.0000	28.3670

Total	**0.0468**	**0.5103**	**0.3390**	**3.0300e-003**	**0.1226**	**1.3600e-003**	**0.1240**	**0.0337**	**1.2800e-003**	**0.0350**	**0.0000**	**290.0495**	**290.0495**	**9.1600e-003**	**0.0000**	**290.2787**

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	0.0741	0.6007	0.5603	1.7700e-003		0.0238	0.0238		0.0219	0.0219	0.0000	155.4553	155.4553	0.0503	0.0000	156.7122
Total	**0.0741**	**0.6007**	**0.5603**	**1.7700e-003**		**0.0238**	**0.0238**		**0.0219**	**0.0219**	**0.0000**	**155.4553**	**155.4553**	**0.0503**	**0.0000**	**156.7122**

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	6.8200e-003	0.2051	0.0714	1.0200e-003	0.0410	4.1000e-004	0.0414	0.0108	3.9000e-004	0.0112	0.0000	98.7832	98.7832	4.0500e-003	0.0000	98.8844
Vendor	0.0116	0.2934	0.1041	1.7000e-003	0.0500	5.9000e-004	0.0506	0.0145	5.6000e-004	0.0150	0.0000	162.9197	162.9197	4.3000e-003	0.0000	163.0273
Worker	0.0284	0.0118	0.1635	3.1000e-004	0.0316	3.6000e-004	0.0319	8.4300e-003	3.3000e-004	8.7600e-003	0.0000	28.3467	28.3467	8.1000e-004	0.0000	28.3670
Total	**0.0468**	**0.5103**	**0.3390**	**3.0300e-003**	**0.1226**	**1.3600e-003**	**0.1240**	**0.0337**	**1.2800e-003**	**0.0350**	**0.0000**	**290.0495**	**290.0495**	**9.1600e-003**	**0.0000**	**290.2787**

3.7 Phase 2 - Facility Construction - 2025

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	0.0300	0.2258	0.2319	7.6000e-004		8.8400e-003	8.8400e-003		8.1300e-003	8.1300e-003	0.0000	66.4355	66.4355	0.0215	0.0000	66.9726
Total	**0.0300**	**0.2258**	**0.2319**	**7.6000e-004**		**8.8400e-003**	**8.8400e-003**		**8.1300e-003**	**8.1300e-003**	**0.0000**	**66.4355**	**66.4355**	**0.0215**	**0.0000**	**66.9726**

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	2.8900e-003	0.0856	0.0307	4.3000e-004	0.0375	1.7000e-004	0.0377	9.5200e-003	1.6000e-004	9.6800e-003	0.0000	41.9276	41.9276	1.7300e-003	0.0000	41.9709
Vendor	4.8400e-003	0.1232	0.0437	7.2000e-004	0.0214	2.5000e-004	0.0216	6.1800e-003	2.4000e-004	6.4200e-003	0.0000	69.2644	69.2644	1.8300e-003	0.0000	69.3101
Worker	0.0113	4.5400e-003	0.0642	1.3000e-004	0.0135	1.5000e-004	0.0136	3.6000e-003	1.4000e-004	3.7400e-003	0.0000	11.6323	11.6323	3.1000e-004	0.0000	11.6401
Total	**0.0191**	**0.2133**	**0.1386**	**1.2800e-003**	**0.0724**	**5.7000e-004**	**0.0730**	**0.0193**	**5.4000e-004**	**0.0198**	**0.0000**	**122.8243**	**122.8243**	**3.8700e-003**	**0.0000**	**122.9211**

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	0.0300	0.2258	0.2319	7.6000e-004		8.8400e-003	8.8400e-003		8.1300e-003	8.1300e-003	0.0000	66.4354	66.4354	0.0215	0.0000	66.9725
Total	**0.0300**	**0.2258**	**0.2319**	**7.6000e-004**		**8.8400e-003**	**8.8400e-003**		**8.1300e-003**	**8.1300e-003**	**0.0000**	**66.4354**	**66.4354**	**0.0215**	**0.0000**	**66.9725**

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	2.8900e-003	0.0856	0.0307	4.3000e-004	0.0375	1.7000e-004	0.0377	9.5200e-003	1.6000e-004	9.6800e-003	0.0000	41.9276	41.9276	1.7300e-003	0.0000	41.9709

Vendor	4.8400e-003	0.1232	0.0437	7.2000e-004	0.0214	2.5000e-004	0.0216	6.1800e-003	2.4000e-004	6.4200e-003	0.0000	69.2644	69.2644	1.8300e-003	0.0000	69.3101
Worker	0.0113	4.5400e-003	0.0642	1.3000e-004	0.0135	1.5000e-004	0.0136	3.6000e-003	1.4000e-004	3.7400e-003	0.0000	11.6323	11.6323	3.1000e-004	0.0000	11.6401
Total	**0.0191**	**0.2133**	**0.1386**	**1.2800e-003**	**0.0724**	**5.7000e-004**	**0.0730**	**0.0193**	**5.4000e-004**	**0.0198**	**0.0000**	**122.8243**	**122.8243**	**3.8700e-003**	**0.0000**	**122.9211**

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	8.3100e-003	0.2442	0.0901	1.2500e-003	0.0303	4.9000e-004	0.0308	8.3400e-003	4.7000e-004	8.8100e-003	0.0000	121.4517	121.4517	5.0400e-003	0.0000	121.5778
Unmitigated	8.3100e-003	0.2442	0.0901	1.2500e-003	0.0303	4.9000e-004	0.0308	8.3400e-003	4.7000e-004	8.8100e-003	0.0000	121.4517	121.4517	5.0400e-003	0.0000	121.5778

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	7.87	7.87	7.87	71,617	71,617
Total	7.87	7.87	7.87	71,617	71,617

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	25.00	7.30	7.30	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Operational energy use estimated separately

5.2 Energy by Land Use - NaturalGas

No operational natural gas use

5.3 Energy by Land Use - Electricity

Operational electricity use estimated separately

6.0 Area Detail

No area sources

6.1 Mitigation Measures Area

No area sources

6.2 Area by SubCategory

No area sources

7.0 Water Detail

No operational water use

7.1 Mitigation Measures Water

No operational water use

7.2 Water by Land Use

No operational water use

8.0 Waste Detail

No operational waste generated

8.1 Mitigation Measures Waste

No operational waste generated

8.2 Waste by Land Use

No operational waste generated

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Emissions from emergency generator estimated separately

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod INPUTS FOR CONSTRUCTION AND OPERATION

Construction Schedule

	Schedule Provided			Schedule Used in CalEEMod		
Construction Phase	**Start**	**End**	**Number of Workdays**	**Start**	**End**	**Number of Workdays**
Phase 1: Earthwork and Site Work for Structures	Jul-22	Jul-23	252	7/1/2022	6/19/2023	252
Phase 2: Facility Construction	Jul-23	Jul-25	504	7/1/2023	6/5/2025	504

Construction Vehicle Trips

Construction Phase	**Workdays**	**Workers/day**	**Worker trips/day**	**Material delivery trips/day**	**Off-haul trips/day**	**Fill trips/day**	**Haul trips/phase**
Phase 1: Earthwork and Site Work for Structures	252	130	260	9	53	8	15320
Phase 2: Facility Construction	504	130	260	17	9	0	4400

Construction Trip Lengths

Trip Type	**miles/one-way trip**
Worker commute	12.5
Fill/Off-haul trips	25
Material delivery trips	25

Operational Trips	**one-way trips/month**	**miles/one-way trip**
Chemical Deliveries	84	25
Residuals Hauling	152	25
Total	236	

CONSTRUCTION EQUIPMENT AND ACTIVITY LEVEL

Equipment	Number	Avg Operation, Hrs/Day	Total Work Days	Assumption (hp)	Adjusted hrs/day
Phase 1: Earthwork and Site Work for Structures					
Excavator	4	6	29	188	0.7
Dozer/Loader	4	6	22	105	0.5
Roller	2	6	3	95	0.1
Hauling On Site	1	6	32	350	0.8
Hauling Off Site	1	6	223	350	5.3
Crawler Crane/RT Crane	1	6	126	350	3.0
Pile Drivers	1	6	80	250	1.9
Water Truck	1	8	255	189	8.1
Phase 2: Facility Construction					
Dozer/Loader	1	6	79	105	0.9
Grader	1	6	10	173	0.1
Roller	1	6	38	95	0.5
Hauling On Site	2	6	81	350	1.0
Hauling Off Site	2	6	43	350	0.5
Concrete Truck	2	6	121	300	1.4
Paving Equipment	1	6	3	174	0.0
Crawler Crane/RT Crane	3	6	98	350	1.2
Water Truck	1	8	210	189	3.3

EMISSIONS SUMMARIES

CONSTRUCTION EMISSIONS - Criteria Air Pollutants

Construction Year	No. of Construction Days	Tons over Construction Period				Average Pounds per day			
		ROG	NOx	Exhaust PM-10	Exhaust PM-2.5	ROG	NOx	Exhaust PM-10	Exhaust PM-2.5
2022	131	0.13	1.65	0.02	0.02	2.0	25.2	0.3	0.3
2023	251	0.17	1.65	0.03	0.03	1.3	13.1	0.2	0.2
2024	262	0.12	1.11	0.03	0.02	0.9	8.5	0.2	0.2
2025	112	0.05	0.44	0.01	0.01	0.9	7.8	0.2	0.2
Project Total	756	0.47	4.85	0.08	0.07	1.3	12.8	0.2	0.2

CONSTRUCTION EMISSIONS - GHG (metric tons)

Construction Year	CO_2	CH_4	N_2O	CO_2e
2022	608.0	0.04	0.0	609.1
2023	765.7	0.07	0.0	767.5
2024	445.5	0.06	0.0	447.0
2025	189.3	0.03	0.0	189.9
Project Total	2008.5	0.20	0.0	2013.5
Life of project (years)				30
Ave. annual emissions (tons/year)				67.0

OPERATIONAL EMISSIONS - Criteria Air Pollutants

Source	Annual (tons/year)				Average Pounds per day			
	ROG	NOx	Total PM-10	Total PM-2.5	ROG	NOx	Total PM-10	Total PM-2.5
Truck Trips	0.01	0.24	0.03	0.01	0.05	1.3	0.2	0.05
Generator	0.02	0.31	0.02	0.02	0.1	1.7	0.1	0.1
Project Total	0.02	0.56	0.05	0.02	0.1	3.0	0.3	0.1

OPERATIONAL EMISSIONS - GHG (metric tons per year)

Source	CO_2	CH_4	N_2O	CO_2e
Delivery trucks	121.5	0.005	0.000	121.6
Generator				71.2
Increased energy demand				0.1
Project Operational Total				192.9
Amortized construction emissions				67.0
PROJECT TOTAL				259.8

Operational GHG emissions from increased energy use

	CO_2	CH_4	N_2O
Emission Factor[1] (lb/MWh)	210	0.034	0.004
Project annual energy demand (MWh/year)	1	1	1
Conversion from lbs to metric tons	0.000453592	0.000453592	0.000453592
GHG emissions (metric tons/year)	0.1	0.0000	0.0000
GWP[2]	1	25	298
GHG emissions as CO_2e (metric tons/year)	0.1	0.0	0.0
Total GHG emissions as CO_2e (metric tons/year)	0.1		

NOTES:

1. Source for GHG emission factors: https://www.epa.gov/sites/production/files/2020-01/documents/egrid2018_summary_tables.pdf, http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf

2. Source for GWP: https://www.arb.ca.gov/cc/inventory/background/gwp.htm

EMERGENCY GENERATOR EMISSIONS

Conversion Factors

HP/kW	1.3410	
lb/g	0.0022	
lb/ton	2,000	
Metric ton/ton	0.90719	
PM_{10} Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
$PM_{2.5}$ Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO_2 kg/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH_4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N_2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH_4	25	IPCC AR4, https://ww2.arb.ca.gov/ghg-gwps
GWP N_2O	298	IPCC AR4, https://ww2.arb.ca.gov/ghg-gwps
CO_2e g/gal	10,302	
CO_2 g/gal	10,210	
CO_2/CO_2e	0.9911	

Generator Rating:	2,000	kW	*(Source: Project Description)*
	2,682	HP	*(based on conservative engineering assumptions; conversion from kW to hp)*
Load Factor:	0.74		*(based on CalEEMod Generator Set Load Factor)*
Engine Emissions Tier:			*(compliance with CARB diesel regulations)*
Operating Hours per Unit:	50	hours/year	
	1.00	hours/day - maximum	
	0.14	hours/day - average	

Units	Criteria Pollutants [1, 2]					Greenhouse Gases [3]	
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$	CO_2	CO_2e
g/kW-hr	—	—	3.50	—	—	—	—
g/HP-hr	0.15	2.85	2.61	0.1440	0.1406	526.17	530.91
lbs/hr	0.66	12.47	11.42	0.63	0.61	3111.12	3,139.15
lbs/day(maximum daily)	0.66	12.47	11.42	0.63	0.61	3111.12	3139.15
lbs/day (average daily)	**0.09**	**1.71**	**1.56**	**0.09**	**0.08**	**426.18**	430.02
lbs/yr	32.82	623.50	570.99	31.50	30.75	155,556.00	156,957.38
tons/yr	0.02	0.31	0.29	0.016	0.015	77.78	78.48
metric tons/yr	—	—	—	—	—	**70.56**	**71.19**

Notes:

1. Emission factors for VOC and NOX: ARB 2011 Final Regulation Order for the ATCM for stationary engines, Table 1, Model year 2008+: https://www.arb.ca.gov/regact/2010/atcm2010/finalregorder.pdf; Policy: CARB Emission Factors for CI Diesel Engines – Percent HC in Relation to NMHC + NOx: http://www.baaqmd.gov/~/media/Files/Engineering/policy_and_procedures/Engines/EmissionFactorsforDieselEngines.ashx
2. Emission factors for CO, PM_{10}, and $PM_{2.5}$: ARB 2011 Final Regulation Order for the ATCM for stationary engines, Table 1, Model year 2008+: https://www.arb.ca.gov/regact/2010/atcm2010/finalregorder.pdf
3. Emission factor for CO_2: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1. Emissions of GHGs assume 99.11% of the CO_2e emissions occur as CO_2, based on Climate Registry emission factors as referenced above.

Sunnyvale Secondary Project

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	1.00	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	3			**Operational Year**	2026
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - <http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf>

Land Use - Unit areas assumed

Construction Phase - Project schedule

Off-road Equipment - Phase not used

Off-road Equipment - Phase not used

Off-road Equipment - Phase not used

Off-road Equipment - Project data

Off-road Equipment - Project data

Off-road Equipment - Phase not used

Trips and VMT - Project data

Vehicle Trips - Operational data. Trip length of operational truck trips assumed to be 25 miles.

Energy Use -

Fleet Mix - All truck trips assumed to be heavy duty trucks

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	2.00	252.00
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	100.00	504.00
tblFleetMix	HHD	0.02	1.00
tblFleetMix	LDA	0.62	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	5.0300e-003	0.00
tblFleetMix	MCY	5.2040e-003	0.00
tblFleetMix	MDV	0.10	0.00
tblFleetMix	MH	6.8100e-004	0.00
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	2.1950e-003	0.00
tblFleetMix	SBUS	6.3800e-004	0.00
tblFleetMix	UBUS	1.5020e-003	0.00

tblGrading	AcresOfGrading	0.00	0.75
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.02	1.00
tblOffRoadEquipment	HorsePower	231.00	350.00
tblOffRoadEquipment	HorsePower	97.00	105.00
tblOffRoadEquipment	HorsePower	97.00	105.00
tblOffRoadEquipment	HorsePower	231.00	350.00
tblOffRoadEquipment	HorsePower	158.00	188.00
tblOffRoadEquipment	HorsePower	187.00	173.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	189.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	300.00
tblOffRoadEquipment	HorsePower	402.00	189.00
tblOffRoadEquipment	HorsePower	172.00	250.00
tblOffRoadEquipment	HorsePower	132.00	174.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	1.20
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tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
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tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.90
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.50

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripNumber	0.00	15,320.00
tblTripsAndVMT	HaulingTripNumber	0.00	4,400.00
tblTripsAndVMT	VendorTripLength	6.60	7.30
tblTripsAndVMT	VendorTripLength	6.60	25.00
tblTripsAndVMT	VendorTripLength	6.60	7.30
tblTripsAndVMT	VendorTripLength	6.60	7.30
tblTripsAndVMT	VendorTripLength	6.60	7.30
tblTripsAndVMT	VendorTripLength	6.60	25.00
tblTripsAndVMT	VendorTripNumber	0.00	9.00
tblTripsAndVMT	VendorTripNumber	0.00	17.00
tblTripsAndVMT	WorkerTripLength	10.80	12.50
tblTripsAndVMT	WorkerTripLength	10.80	1.25
tblTripsAndVMT	WorkerTripNumber	35.00	260.00
tblTripsAndVMT	WorkerTripNumber	0.00	260.00
tblVehicleTrips	CC_TL	6.60	7.30
tblVehicleTrips	CC_TTP	28.00	0.00
tblVehicleTrips	CNW_TL	6.60	7.30
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CW_TL	14.70	25.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.32	7.87
tblVehicleTrips	SU_TR	0.68	7.87
tblVehicleTrips	WD_TR	6.97	7.87

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					
2022	0.1342	1.6479	1.006	6.45E-03	0.3127	0.0192	0.3319	0.083	0.0178	0.1008	0	607.9993	607.9993	0.0449	0	609.1215
2023	0.1694	1.6482	1.3254	8.16E-03	0.3766	0.0275	0.404	0.0999	0.0253	0.1253	0	765.7384	765.7384	0.0694	0	767.4728
2024	0.121	1.111	0.8993	4.80E-03	0.1226	0.0251	0.1477	0.0337	0.0231	0.0568	0	445.5049	445.5049	0.0594	0	446.9911
2025	0.049	0.4391	0.3704	2.04E-03	0.0724	9.41E-03	0.0818	0.0193	8.67E-03	0.028	0	189.2598	189.2598	0.0254	0	189.8937
Maximum	**0.1694**	**1.6482**	**1.3254**	**8.16E-03**	**0.3766**	**0.0275**	**0.404**	**0.0999**	**0.0253**	**0.1253**	**0**	**765.7384**	**765.7384**	**0.0694**	**0**	**767.4728**

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					
2022	0.1342	1.6479	1.006	6.45E-03	0.3127	0.0192	0.3319	0.083	0.0178	0.1008	0	607.9992	607.9992	0.0449	0	609.1214

2023	0.1694	1.6482	1.3254	8.16E-03	0.3766	0.0275	0.404	0.0999	0.0253	0.1253	0	765.7382	765.7382	0.0694	0	767.4726
2024	0.121	1.111	0.8993	4.80E-03	0.1226	0.0251	0.1477	0.0337	0.0231	0.0568	0	445.5047	445.5047	0.0594	0	446.9909
2025	0.049	0.4391	0.3704	2.04E-03	0.0724	9.41E-03	0.0818	0.0193	8.67E-03	0.028	0	189.2597	189.2597	0.0254	0	189.8936
Maximum	**0.1694**	**1.6482**	**1.3254**	**8.16E-03**	**0.3766**	**0.0275**	**0.404**	**0.0999**	**0.0253**	**0.1253**	**0**	**765.7382**	**765.7382**	**0.0694**	**0**	**767.4726**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-1-2022	9-30-2022	0.8793	0.8793
2	10-1-2022	12-31-2022	0.9024	0.9024
3	1-1-2023	3-31-2023	0.6328	0.6328
4	4-1-2023	6-30-2023	0.5498	0.5498
5	7-1-2023	9-30-2023	0.3212	0.3212
6	10-1-2023	12-31-2023	0.3235	0.3235
7	1-1-2024	3-31-2024	0.3066	0.3066
8	4-1-2024	6-30-2024	0.3044	0.3044
9	7-1-2024	9-30-2024	0.3077	0.3077
10	10-1-2024	12-31-2024	0.3100	0.3100
11	1-1-2025	3-31-2025	0.2810	0.2810
12	4-1-2025	6-30-2025	0.2045	0.2045
		Highest	0.9024	0.9024

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	4.43E-03	0	1.00E-05	0		0	0		0	0	0	2.00E-05	2.00E-05	0	0	2.00E-05
Energy	1.10E-04	1.02E-03	8.60E-04	1.00E-05		8.00E-05	8.00E-05		8.00E-05	8.00E-05	0	1.9539	1.9539	1.40E-04	4.00E-05	1.9705
Mobile	8.31E-03	0.2442	0.0901	1.25E-03	0.0303	4.90E-04	0.0308	8.34E-03	4.70E-04	8.81E-03	0	121.4517	121.4517	5.04E-03	0	121.5778
Waste						0	0		0	0	0.2517	0	0.2517	0.0149	0	0.6236
Water						0	0		0	0	0.0734	0.1192	0.1926	7.55E-03	1.80E-04	0.4354
Total	**0.0129**	**0.2452**	**0.091**	**1.26E-03**	**0.0303**	**5.70E-04**	**0.0309**	**8.34E-03**	**5.50E-04**	**8.89E-03**	**0.3251**	**123.5248**	**123.8499**	**0.0276**	**2.20E-04**	**124.6074**

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	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.1000e-004	1.0200e-003	8.6000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.9539	1.9539	1.4000e-004	4.0000e-005	1.9705
Mobile	8.3100e-003	0.2442	0.0901	1.2500e-003	0.0303	4.9000e-004	0.0308	8.3400e-003	4.7000e-004	8.8100e-003	0.0000	121.4517	121.4517	5.0400e-003	0.0000	121.5778
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.6236
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1192	0.1926	7.5500e-003	1.8000e-004	0.4354
Total	**0.0129**	**0.2452**	**0.0910**	**1.2600e-003**	**0.0303**	**5.7000e-004**	**0.0309**	**8.3400e-003**	**5.5000e-004**	**8.8900e-003**	**0.3251**	**123.5248**	**123.8499**	**0.0276**	**2.2000e-004**	**124.6074**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2022	6/30/2022	5	0	
2	Phase 1 - Earthwork and Sitework for Structures	Grading	7/1/2022	6/19/2023	5	252	
3	Site Preparation	Site Preparation	7/15/2022	7/14/2022	5	0	
4	Paving	Paving	12/7/2022	12/6/2022	5	0	
5	Architectural Coating	Architectural Coating	12/14/2022	12/13/2022	5	0	
6	Phase 2 - Facility Construction	Building Construction	7/1/2023	6/5/2025	5	504	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Phase 1 - Earthwork and Sitework for Structures	Cranes	1	3.00	350	0.29
Phase 1 - Earthwork and Sitework for Structures	Excavators	4	0.70	188	0.38
Phase 1 - Earthwork and Sitework for Structures	Graders	0	0.00	187	0.41
Phase 1 - Earthwork and Sitework for Structures	Off-Highway Trucks	1	0.80	350	0.38
Phase 1 - Earthwork and Sitework for Structures	Off-Highway Trucks	1	8.10	189	0.38
Phase 1 - Earthwork and Sitework for Structures	Other Construction Equipment	1	1.90	250	0.42
Phase 1 - Earthwork and Sitework for Structures	Rollers	2	0.10	95	0.38
Phase 1 - Earthwork and Sitework for Structures	Rubber Tired Dozers	0	0.00	247	0.40
Phase 1 - Earthwork and Sitework for Structures	Tractors/Loaders/Backhoes	4	0.50	105	0.37
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	0	0.00	130	0.42
Paving	Paving Equipment	0	0.00	132	0.36
Paving	Rollers	0	0.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Architectural Coating	Air Compressors	0	0.00	78	0.48
Phase 2 - Facility Construction	Cranes	3	1.20	350	0.29
Phase 2 - Facility Construction	Forklifts	0	0.00	89	0.20
Phase 2 - Facility Construction	Generator Sets	0	0.00	84	0.74
Phase 2 - Facility Construction	Graders	1	0.10	173	0.41
Phase 2 - Facility Construction	Off-Highway Trucks	2	1.00	350	0.38
Phase 2 - Facility Construction	Off-Highway Trucks	2	1.40	300	0.38
Phase 2 - Facility Construction	Off-Highway Trucks	1	3.30	189	0.38
Phase 2 - Facility Construction	Paving Equipment	1	0.10	174	0.36
Phase 2 - Facility Construction	Rollers	1	0.50	95	0.38
Phase 2 - Facility Construction	Tractors/Loaders/Backhoes	1	0.90	105	0.37
Phase 2 - Facility Construction	Welders	0	0.00	46	0.45

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
Demolition	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 - Earthwork and Sitework for Structures	14	260.00	9.00	15,320.00	12.50	25.00	25.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 - Facility Construction	12	260.00	17.00	4,400.00	1.25	25.00	25.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Phase not used

3.3 Phase 1 - Earthwork and Sitework for Structures - 2022

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					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0400	0.3591	0.2986	9.0000e-004		0.0144	0.0144		0.0132	0.0132	0.0000	78.9021	78.9021	0.0255	0.0000	79.5400
Total	**0.0400**	**0.3591**	**0.2986**	**9.0000e-004**	**4.0000e-004**	**0.0144**	**0.0148**	**4.0000e-005**	**0.0132**	**0.0133**	**0.0000**	**78.9021**	**78.9021**	**0.0255**	**0.0000**	**79.5400**

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	0.0352	1.1354	0.2716	3.7200e-003	0.1428	3.5200e-003	0.1463	0.0375	3.3700e-003	0.0409	0.0000	360.3322	360.3322	0.0155	0.0000	360.7197
Vendor	4.2500e-003	0.1163	0.0314	4.6000e-004	0.0132	3.7000e-004	0.0136	3.8300e-003	3.5000e-004	4.1800e-003	0.0000	44.5643	44.5643	1.2700e-003	0.0000	44.5961
Worker	0.0547	0.0371	0.4044	1.3700e-003	0.1563	9.5000e-004	0.1573	0.0416	8.7000e-004	0.0424	0.0000	124.2007	124.2007	2.6000e-003	0.0000	124.2656
Total	**0.0941**	**1.2887**	**0.7074**	**5.5500e-003**	**0.3123**	**4.8400e-003**	**0.3171**	**0.0829**	**4.5900e-003**	**0.0875**	**0.0000**	**529.0972**	**529.0972**	**0.0194**	**0.0000**	**529.5814**

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-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0400	0.3591	0.2986	9.0000e-004		0.0144	0.0144		0.0132	0.0132	0.0000	78.9020	78.9020	0.0255	0.0000	79.5399
Total	**0.0400**	**0.3591**	**0.2986**	**9.0000e-004**	**4.0000e-004**	**0.0144**	**0.0148**	**4.0000e-005**	**0.0132**	**0.0133**	**0.0000**	**78.9020**	**78.9020**	**0.0255**	**0.0000**	**79.5399**

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	0.0352	1.1354	0.2716	3.7200e-003	0.1428	3.5200e-003	0.1463	0.0375	3.3700e-003	0.0409	0.0000	360.3322	360.3322	0.0155	0.0000	360.7197
Vendor	4.2500e-003	0.1163	0.0314	4.6000e-004	0.0132	3.7000e-004	0.0136	3.8300e-003	3.5000e-004	4.1800e-003	0.0000	44.5643	44.5643	1.2700e-003	0.0000	44.5961
Worker	0.0547	0.0371	0.4044	1.3700e-003	0.1563	9.5000e-004	0.1573	0.0416	8.7000e-004	0.0424	0.0000	124.2007	124.2007	2.6000e-003	0.0000	124.2656

Total	**0.0941**	**1.2887**	**0.7074**	**5.5500e-003**	**0.3123**	**4.8400e-003**	**0.3171**	**0.0829**	**4.5900e-003**	**0.0875**	**0.0000**	**529.0972**	**529.0972**	**0.0194**	**0.0000**	**529.5814**

3.3 Phase 1 - Earthwork and Sitework for Structures - 2023

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					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0349	0.2940	0.2667	8.3000e-004		0.0118	0.0118		0.0109	0.0109	0.0000	72.8848	72.8848	0.0236	0.0000	73.4741
Total	**0.0349**	**0.2940**	**0.2667**	**8.3000e-004**	**4.0000e-004**	**0.0118**	**0.0122**	**4.0000e-005**	**0.0109**	**0.0109**	**0.0000**	**72.8848**	**72.8848**	**0.0236**	**0.0000**	**73.4741**

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	0.0222	0.6746	0.2285	3.3000e-003	0.1411	1.3300e-003	0.1425	0.0369	1.2700e-003	0.0382	0.0000	320.0075	320.0075	0.0130	0.0000	320.3333
Vendor	2.8900e-003	0.0729	0.0261	4.2000e-004	0.0122	1.5000e-004	0.0124	3.5300e-003	1.4000e-004	3.6700e-003	0.0000	40.0538	40.0538	1.0600e-003	0.0000	40.0804
Worker	0.0474	0.0308	0.3438	1.2200e-003	0.1444	8.6000e-004	0.1452	0.0384	7.9000e-004	0.0392	0.0000	110.3609	110.3609	2.1500e-003	0.0000	110.4146
Total	**0.0724**	**0.7784**	**0.5984**	**4.9400e-003**	**0.2977**	**2.3400e-003**	**0.3001**	**0.0789**	**2.2000e-003**	**0.0811**	**0.0000**	**470.4222**	**470.4222**	**0.0162**	**0.0000**	**470.8283**

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-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0349	0.2940	0.2667	8.3000e-004		0.0118	0.0118		0.0109	0.0109	0.0000	72.8847	72.8847	0.0236	0.0000	73.4740
Total	**0.0349**	**0.2940**	**0.2667**	**8.3000e-004**	**4.0000e-004**	**0.0118**	**0.0122**	**4.0000e-005**	**0.0109**	**0.0109**	**0.0000**	**72.8847**	**72.8847**	**0.0236**	**0.0000**	**73.4740**

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	0.0222	0.6746	0.2285	3.3000e-003	0.1411	1.3300e-003	0.1425	0.0369	1.2700e-003	0.0382	0.0000	320.0075	320.0075	0.0130	0.0000	320.3333
Vendor	2.8900e-003	0.0729	0.0261	4.2000e-004	0.0122	1.5000e-004	0.0124	3.5300e-003	1.4000e-004	3.6700e-003	0.0000	40.0538	40.0538	1.0600e-003	0.0000	40.0804
Worker	0.0474	0.0308	0.3438	1.2200e-003	0.1444	8.6000e-004	0.1452	0.0384	7.9000e-004	0.0392	0.0000	110.3609	110.3609	2.1500e-003	0.0000	110.4146
Total	**0.0724**	**0.7784**	**0.5984**	**4.9400e-003**	**0.2977**	**2.3400e-003**	**0.3001**	**0.0789**	**2.2000e-003**	**0.0811**	**0.0000**	**470.4222**	**470.4222**	**0.0162**	**0.0000**	**470.8283**

3.4 Site Preparation - 2022

Phase not used

3.5 Paving - 2022

Phase not used

3.6 Architectural Coating - 2022

Phase not used

3.7 Phase 2 - Facility Construction - 2023

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	0.0376	0.3172	0.2837	8.8000e-004		0.0127	0.0127		0.0116	0.0116	0.0000	77.1409	77.1409	0.0250	0.0000	77.7646
Total	**0.0376**	**0.3172**	**0.2837**	**8.8000e-004**		**0.0127**	**0.0127**		**0.0116**	**0.0116**	**0.0000**	**77.1409**	**77.1409**	**0.0250**	**0.0000**	**77.7646**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.4200e-003	0.1041	0.0353	5.1000e-004	0.0379	2.0000e-004	0.0381	9.6700e-003	2.0000e-004	9.8600e-003	0.0000	49.3722	49.3722	2.0100e-003	0.0000	49.4224
Vendor	5.8700e-003	0.1480	0.0529	8.5000e-004	0.0248	3.0000e-004	0.0251	7.1700e-003	2.8000e-004	7.4500e-003	0.0000	81.2847	81.2847	2.1500e-003	0.0000	81.3385
Worker	0.0152	6.5400e-003	0.0884	1.6000e-004	0.0157	1.8000e-004	0.0158	4.1800e-003	1.6000e-004	4.3500e-003	0.0000	14.6337	14.6337	4.5000e-004	0.0000	14.6450
Total	**0.0245**	**0.2586**	**0.1766**	**1.5200e-003**	**0.0784**	**6.8000e-004**	**0.0791**	**0.0210**	**6.4000e-004**	**0.0217**	**0.0000**	**145.2905**	**145.2905**	**4.6100e-003**	**0.0000**	**145.4059**

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	0.0376	0.3172	0.2837	8.8000e-004		0.0127	0.0127		0.0116	0.0116	0.0000	77.1408	77.1408	0.0250	0.0000	77.7645
Total	**0.0376**	**0.3172**	**0.2837**	**8.8000e-004**		**0.0127**	**0.0127**		**0.0116**	**0.0116**	**0.0000**	**77.1408**	**77.1408**	**0.0250**	**0.0000**	**77.7645**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.4200e-003	0.1041	0.0353	5.1000e-004	0.0379	2.0000e-004	0.0381	9.6700e-003	2.0000e-004	9.8600e-003	0.0000	49.3722	49.3722	2.0100e-003	0.0000	49.4224
Vendor	5.8700e-003	0.1480	0.0529	8.5000e-004	0.0248	3.0000e-004	0.0251	7.1700e-003	2.8000e-004	7.4500e-003	0.0000	81.2847	81.2847	2.1500e-003	0.0000	81.3385
Worker	0.0152	6.5400e-003	0.0884	1.6000e-004	0.0157	1.8000e-004	0.0158	4.1800e-003	1.6000e-004	4.3500e-003	0.0000	14.6337	14.6337	4.5000e-004	0.0000	14.6450
Total	**0.0245**	**0.2586**	**0.1766**	**1.5200e-003**	**0.0784**	**6.8000e-004**	**0.0791**	**0.0210**	**6.4000e-004**	**0.0217**	**0.0000**	**145.2905**	**145.2905**	**4.6100e-003**	**0.0000**	**145.4059**

3.7 Phase 2 - Facility Construction - 2024

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	0.0741	0.6007	0.5603	1.7700e-003		0.0238	0.0238		0.0219	0.0219	0.0000	155.4555	155.4555	0.0503	0.0000	156.7124
Total	**0.0741**	**0.6007**	**0.5603**	**1.7700e-003**		**0.0238**	**0.0238**		**0.0219**	**0.0219**	**0.0000**	**155.4555**	**155.4555**	**0.0503**	**0.0000**	**156.7124**

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	6.8200e-003	0.2051	0.0714	1.0200e-003	0.0410	4.1000e-004	0.0414	0.0108	3.9000e-004	0.0112	0.0000	98.7832	98.7832	4.0500e-003	0.0000	98.8844
Vendor	0.0116	0.2934	0.1041	1.7000e-003	0.0500	5.9000e-004	0.0506	0.0145	5.6000e-004	0.0150	0.0000	162.9197	162.9197	4.3000e-003	0.0000	163.0273
Worker	0.0284	0.0118	0.1635	3.1000e-004	0.0316	3.6000e-004	0.0319	8.4300e-003	3.3000e-004	8.7600e-003	0.0000	28.3467	28.3467	8.1000e-004	0.0000	28.3670

Total	**0.0468**	**0.5103**	**0.3390**	**3.0300e-003**	**0.1226**	**1.3600e-003**	**0.1240**	**0.0337**	**1.2800e-003**	**0.0350**	**0.0000**	**290.0495**	**290.0495**	**9.1600e-003**	**0.0000**	**290.2787**

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	0.0741	0.6007	0.5603	1.7700e-003		0.0238	0.0238		0.0219	0.0219	0.0000	155.4553	155.4553	0.0503	0.0000	156.7122
Total	**0.0741**	**0.6007**	**0.5603**	**1.7700e-003**		**0.0238**	**0.0238**		**0.0219**	**0.0219**	**0.0000**	**155.4553**	**155.4553**	**0.0503**	**0.0000**	**156.7122**

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	6.8200e-003	0.2051	0.0714	1.0200e-003	0.0410	4.1000e-004	0.0414	0.0108	3.9000e-004	0.0112	0.0000	98.7832	98.7832	4.0500e-003	0.0000	98.8844
Vendor	0.0116	0.2934	0.1041	1.7000e-003	0.0500	5.9000e-004	0.0506	0.0145	5.6000e-004	0.0150	0.0000	162.9197	162.9197	4.3000e-003	0.0000	163.0273
Worker	0.0284	0.0118	0.1635	3.1000e-004	0.0316	3.6000e-004	0.0319	8.4300e-003	3.3000e-004	8.7600e-003	0.0000	28.3467	28.3467	8.1000e-004	0.0000	28.3670
Total	**0.0468**	**0.5103**	**0.3390**	**3.0300e-003**	**0.1226**	**1.3600e-003**	**0.1240**	**0.0337**	**1.2800e-003**	**0.0350**	**0.0000**	**290.0495**	**290.0495**	**9.1600e-003**	**0.0000**	**290.2787**

3.7 Phase 2 - Facility Construction - 2025

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	0.0300	0.2258	0.2319	7.6000e-004		8.8400e-003	8.8400e-003		8.1300e-003	8.1300e-003	0.0000	66.4355	66.4355	0.0215	0.0000	66.9726
Total	**0.0300**	**0.2258**	**0.2319**	**7.6000e-004**		**8.8400e-003**	**8.8400e-003**		**8.1300e-003**	**8.1300e-003**	**0.0000**	**66.4355**	**66.4355**	**0.0215**	**0.0000**	**66.9726**

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	2.8900e-003	0.0856	0.0307	4.3000e-004	0.0375	1.7000e-004	0.0377	9.5200e-003	1.6000e-004	9.6800e-003	0.0000	41.9276	41.9276	1.7300e-003	0.0000	41.9709
Vendor	4.8400e-003	0.1232	0.0437	7.2000e-004	0.0214	2.5000e-004	0.0216	6.1800e-003	2.4000e-004	6.4200e-003	0.0000	69.2644	69.2644	1.8300e-003	0.0000	69.3101
Worker	0.0113	4.5400e-003	0.0642	1.3000e-004	0.0135	1.5000e-004	0.0136	3.6000e-003	1.4000e-004	3.7400e-003	0.0000	11.6323	11.6323	3.1000e-004	0.0000	11.6401
Total	**0.0191**	**0.2133**	**0.1386**	**1.2800e-003**	**0.0724**	**5.7000e-004**	**0.0730**	**0.0193**	**5.4000e-004**	**0.0198**	**0.0000**	**122.8243**	**122.8243**	**3.8700e-003**	**0.0000**	**122.9211**

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	0.0300	0.2258	0.2319	7.6000e-004		8.8400e-003	8.8400e-003		8.1300e-003	8.1300e-003	0.0000	66.4354	66.4354	0.0215	0.0000	66.9725
Total	**0.0300**	**0.2258**	**0.2319**	**7.6000e-004**		**8.8400e-003**	**8.8400e-003**		**8.1300e-003**	**8.1300e-003**	**0.0000**	**66.4354**	**66.4354**	**0.0215**	**0.0000**	**66.9725**

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	2.8900e-003	0.0856	0.0307	4.3000e-004	0.0375	1.7000e-004	0.0377	9.5200e-003	1.6000e-004	9.6800e-003	0.0000	41.9276	41.9276	1.7300e-003	0.0000	41.9709

Vendor	4.8400e-003	0.1232	0.0437	7.2000e-004	0.0214	2.5000e-004	0.0216	6.1800e-003	2.4000e-004	6.4200e-003	0.0000	69.2644	69.2644	1.8300e-003	0.0000	69.3101
Worker	0.0113	4.5400e-003	0.0642	1.3000e-004	0.0135	1.5000e-004	0.0136	3.6000e-003	1.4000e-004	3.7400e-003	0.0000	11.6323	11.6323	3.1000e-004	0.0000	11.6401
Total	**0.0191**	**0.2133**	**0.1386**	**1.2800e-003**	**0.0724**	**5.7000e-004**	**0.0730**	**0.0193**	**5.4000e-004**	**0.0198**	**0.0000**	**122.8243**	**122.8243**	**3.8700e-003**	**0.0000**	**122.9211**

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	8.3100e-003	0.2442	0.0901	1.2500e-003	0.0303	4.9000e-004	0.0308	8.3400e-003	4.7000e-004	8.8100e-003	0.0000	121.4517	121.4517	5.0400e-003	0.0000	121.5778
Unmitigated	8.3100e-003	0.2442	0.0901	1.2500e-003	0.0303	4.9000e-004	0.0308	8.3400e-003	4.7000e-004	8.8100e-003	0.0000	121.4517	121.4517	5.0400e-003	0.0000	121.5778

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	7.87	7.87	7.87	71,617	71,617
Total	7.87	7.87	7.87	71,617	71,617

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	25.00	7.30	7.30	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Operational energy use estimated separately

5.2 Energy by Land Use - NaturalGas

No operational natural gas use

5.3 Energy by Land Use - Electricity

Operational electricity use estimated separately

6.0 Area Detail

No area sources

6.1 Mitigation Measures Area

No area sources

6.2 Area by SubCategory

No area sources

7.0 Water Detail

No operational water use

7.1 Mitigation Measures Water

No operational water use

7.2 Water by Land Use

No operational water use

8.0 Waste Detail

No operational waste generated

8.1 Mitigation Measures Waste

No operational waste generated

8.2 Waste by Land Use

No operational waste generated

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Emissions from emergency generator estimated separately

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation