

# ***GATEWAY CROSSINGS PROJECT AIR QUALITY ASSESSMENT***

***Santa Clara, California***

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**Project: 16-075**

## **Introduction**

The purpose of this report is to address air quality impacts associated with the proposed mixed-use residential development project. The approximately 24-acre Gateway Crossings project site is currently undeveloped and located at the southwest corner of Coleman Avenue and Brokaw Road in the City of Santa Clara. The project proposes to develop four, four- to eight-story podium residential buildings with semi-subterranean parking and one to two levels of above-ground parking, and up to 215,000 square feet (sf) of commercial uses, including a nine-story hotel building above a podium and parking. The proposed residential and hotel buildings would be situated around a publicly accessible, approximately 0.9-acre park. A total of approximately three acres of common open space would be provided in the residential buildings on top of the podium structures and may include rooftop outdoor amenity space.

Air pollutant emissions associated with construction and operation of the project were modeled. In addition, the potential construction health risk impacts to nearby sensitive receptors were evaluated along with the community risk impacts of existing toxic air contaminant (TAC) sources upon future project residences. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD).

## **Setting**

The project is located in the Santa Clara County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM<sub>10</sub>), and fine particulate matter (PM<sub>2.5</sub>).

### Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO<sub>x</sub>). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM<sub>10</sub>) and fine particulate matter where particles have a diameter of 2.5 micrometers or less (PM<sub>2.5</sub>). Elevated concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

## Toxic Air Contaminants

TACs are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. The most recent OEHHA risk assessment guidelines were published in February of 2015.<sup>1</sup> See *Attachment 1* for a detailed description of the community risk modeling methodology used in this assessment.

## Regulatory Setting

### *Federal Regulations*

The United States Environmental Protection Agency (EPA) sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA also sets nationwide fuel standards. California also has the ability to set motor vehicle emission standards and standards for fuel used in California, as long as they are the same or more stringent than the Federal standards.

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of nitrogen oxides, or NO<sub>x</sub>, and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) and because the EPA has identified diesel particulate matter as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce PM and NO<sub>x</sub> emissions from diesel engines up to 95 percent in

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<sup>1</sup> OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.<sup>2</sup>

In concert with the diesel engine emission standards, the EPA has also substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. The new standards reduced the amount of sulfur allowed by 97 percent for highway diesel fuel (from 500 parts per million by weight [ppmw] to 15 ppmw), and by 99 percent for off-highway diesel fuel (from about 3,000 ppmw to 15 ppmw). The low sulfur highway fuel (15 ppmw sulfur), also called ultra-low sulfur diesel (ULSD) is currently required for use by all vehicles in the U.S.

All of the above Federal diesel engine and diesel fuel requirements have been adopted by California, in some cases with modifications making the requirements more stringent or the implementation dates sooner.

### *State Regulations*

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles<sup>3</sup>. In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the Federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and PM<sub>2.5</sub> emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road, or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

CARB has also adopted and implemented regulations to reduce DPM and NO<sub>x</sub> emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers,

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<sup>2</sup> USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

<sup>3</sup> California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.



backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NO<sub>x</sub> exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent Federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NO<sub>x</sub>.

### *Bay Area Air Quality Management District (BAAQMD)*

BAAQMD has jurisdiction over an approximately 5,600-square mile area, commonly referred to as the San Francisco Bay Area (Bay Area). The District's boundary encompasses the nine San Francisco Bay Area counties, including Alameda County, Contra Costa County, Marin County, San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County and southern Sonoma County.

BAAQMD is the lead agency in developing plans to address attainment and maintenance of the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

The BAAQMD *CEQA Air Quality Guidelines*<sup>4</sup> were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of their *CEQA Guidelines*. In May 2011, the updated BAAQMD *CEQA Air Quality Guidelines* were amended to include a risk and hazards threshold for new receptors and modify procedures for assessing impacts related to risk and hazard impacts.

### *Local Regulations*

#### Santa Clara General Plan

The 2010-2035 General Plan includes goals to improve air quality in the region and reduce GHG emissions. To achieve these goals, the General Plan contains the following policies:

- 5.10.2-P1      Support alternative      transportation modes and efficient parking mechanisms to improve air quality.

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<sup>4</sup> Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. May. (Updated May 2017)

- 5.10.2-P2 Encourage development patterns that reduce vehicle miles traveled and air pollution.
- 5.10.2-P3 Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.
- 5.10.2-P4 Encourage measures to reduce greenhouse gas emissions to reach 30 percent below 1990 levels by 2020.
- 5.10.2-P5 Promote regional air pollution prevention plans for local industry and businesses.
- 5.10.2-P6 Require “Best Management Practices” for construction dust abatement.

In addition, the Safety Goals of the General Plan are supported by the following policies related to air quality:

- 5.10.5-P34 Implement minimum setbacks of 500 feet from roadways with average daily trips of 100,000 or more and 100 feet from railroad tracks for new residential or other uses with sensitive receptors, unless a project-specific study identifies measures, such as site design, tiered landscaping, air filtration systems, and window design, to reduce exposure, demonstrating that the potential risks can be reduced to acceptable levels.
- 5.10.5-P35 Establish minimum buffers between odor sources and new residential or other uses with sensitive receptors, consistent with BAAQMD guidelines, unless a project-specific study demonstrates that these risks can be reduced to acceptable levels.

The General Plan included Prerequisite Goals and Policies that relate to air quality. Some of these policies addressed significant impacts identified in the Draft Environmental Impact Report for the General Plan. The following policy related to air quality was included in the General Plan:

- 5.1.1-P24 Prior to the implementation of Phase III, the City will include a community Risk Reduction Plan (“CRRP”) for acceptable Toxic Air Contaminant (“TAC”) concentrations, consistent with the Bay Area Air Quality Management District (“BAAQMD”) CEQA Guidelines, including risk and exposure reduction targets, measures to reduce emissions, monitoring procedures, and a public participations process.

Note that the City has not yet developed a CRRP, so health risk assessments are performed for projects that contain sensitive receptors near sources of air pollution or TACs. These include modeling of health risks for individual projects located within the minimum setbacks for roadways and railroads. Mitigation measures such as (but not limited to); site redesign, tiered plantings of trees, air filtration systems, and location of air intakes and design windows to reduce exposure, shall be required to reduce these risks to acceptable levels.

## Santa Clara Climate Action Plan

The Santa Clara Climate Action Plan (CAP), adopted December 3, 2013. The CAP includes measures to reduce emissions by 23.4% below 2008 levels by 2020 and a series of measures to reduce emissions beyond. The following reduction strategies would apply to this project:

- Achieve City-adopted electricity efficiency targets to reduce community-wide electricity use by 5% through incentives, pilot projects, and rebate programs.
- Incentivize and facilitate the installation of 6 MW of customer-owned residential and nonresidential solar PV projects.
- Meet the water conservation goals presented in the 2010 Urban Water Management Plan to reduce per capita water use by 2020.
- Work with regional partners to increase solid waste diversion to 80% through increased recycling efforts, curbside food waste pickup, and construction and demolition waste programs.
- Support and facilitate a community-wide transition to electric outdoor lawn and garden equipment through outreach, coordination with BAAQMD, and outdoor electrical outlet requirements for new development.
- Require construction projects to comply with BAAQMD best management practices, including alternative-fueled vehicles and equipment.
- Require new development located in the city's transportation districts to implement a TDM program to reduce drive-alone trips.
- Revise parking standards for new multi-family residential and nonresidential development to allow that a minimum of one parking space, and a recommended level of 5% of all new parking spaces, be designated for electric vehicle charging.
- Create a tree-planting standard for new development and conduct a citywide tree inventory every five years to track progress of the requirements.
- Require new parking lots to be surfaced with low-albedo materials to reduce heat gain, provided it is consistent with the Building Code.

## Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. A review of the project site did not reveal any sensitive receptors within 1,000 feet of the project site. However, since project construction would be phased, future on-site residences would be considered sensitive receptors for later phases of construction since it is assumed that phases of the project would become operational once constructed.

## Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The significance thresholds identified by BAAQMD and used in this analysis are summarized in Table 1. The BAAQMD's adoption of significance thresholds contained in the 2011 *CEQA Air Quality Guidelines* was called into question by an order issued March 5, 2012, in California Building Industry Association (CBIA) v. BAAQMD (Alameda Superior Court Case No. RGI0548693). The order requires the BAAQMD to set aside its approval of the thresholds until it has conducted environmental review under CEQA. The ruling made in the case concerned the environmental impacts of adopting the thresholds and how the thresholds would indirectly affect land use development patterns. In August 2013, the Appellate Court struck down the lower court's order to set aside the thresholds (Cal. Court of Appeal, First Appellate District, Case Nos. A135335 & A136212). CBIA sought review by the California Supreme Court on three issues, including the appellate court's decision to uphold the BAAQMD's adoption of the thresholds, and the Court granted review on just one: Under what circumstances, if any, does CEQA require an analysis of how existing environmental conditions will impact future residents or users of a proposed project? In December 2015, the Supreme Court determined that an analysis of the impacts of the environment on a project – known as “CEQA-in-reverse” – is only required under two limited circumstances: (1) when a statute provides an express legislative directive to consider such impacts; and (2) when a proposed project risks exacerbating environmental hazards or conditions that already exist (Cal. Supreme Court Case No. S213478). The Supreme Court reversed the Court of Appeal's decision and remanded the matter back to the appellate court to reconsider the case in light of the Supreme Court's ruling. In response to the legal issues, BAAQMD revised their CEQA Guidelines in May 2017. The thresholds identified in Table 1 represent the most recent guidance provided by BAAQMD that are used by the City of Santa Clara. Though not necessarily a CEQA issue, the effect of existing TAC sources on future project receptors (residences) is analyzed to comply with the Clean Air Plan key goal of reducing population TAC exposure and protecting public health in the Bay Area.

**Table 1. Air Quality Significance Thresholds**

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
<b>Criteria Air Pollutants</b>			
ROG	54	54	10
NO <sub>x</sub>	54	54	10
PM <sub>10</sub>	82 (Exhaust)	82	15
PM <sub>2.5</sub>	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
<b>Health Risks and Hazards for Single Sources</b>			
Excess Cancer Risk	>10 per one million		
Hazard Index	>1.0		
Incremental annual PM <sub>2.5</sub>	>0.3 µg/m <sup>3</sup>		
<b>Health Risks and Hazards for Combined Sources (Cumulative from all sources within 1,000 foot zone of influence)</b>			
Excess Cancer Risk	>100 per one million		
Hazard Index	>10.0		
Annual Average PM <sub>2.5</sub>	>0.8 µg/m <sup>3</sup>		
<b>Greenhouse Gas Emissions</b>			
GHG Annual Emissions	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons or 4.6 metric tons per capita		
Note: ROG = reactive organic gases, NO <sub>x</sub> = nitrogen oxides, PM <sub>10</sub> = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, PM <sub>2.5</sub> = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less; and GHG = greenhouse gas.			

**Impacts and Mitigation Measures**

**Impact:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable State or federal ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

The Bay Area is considered a non-attainment area for ground-level ozone and PM<sub>2.5</sub> under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM<sub>10</sub> under the California Clean Air Act, but not the federal act. The area has attained both State and federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for ozone and PM<sub>10</sub>, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These

thresholds are for ozone precursor pollutants (ROG and NO<sub>x</sub>), PM<sub>10</sub>, and PM<sub>2.5</sub> and apply to both construction period and operational period impacts.

The California Emissions Estimator Model (CalEEMod) Version 2016.3.1 was used to predict emissions from construction and operation of the site assuming full build out of the project. The project land use types and size, and anticipated construction schedule were input to CalEEMod.

#### Construction period emissions

CalEEMod provided annual emissions for construction. CalEEMod provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. A phase-specific construction build-out scenario, including equipment list and schedule, was developed based on information provided by the project applicant. Emissions from construction of each phase were modeled separately. The proposed project land uses for each phase were input into CalEEMod as follows.

##### Phase 1:

- 261 dwelling units were entered as “Apartments-Mid Rise”
- 485 spaces were entered as “Enclosed Parking with Elevator”
- 4 spaces as “Parking Lot,” and
- 5,300 sf as “Strip Mall”

In addition, 23,542 cubic yards (cy ) of soil off-haul is anticipated during the grading phase and hauling of 800 cy of asphalt is anticipated during the paving phase of Phase 1.

##### Phase 2:

- 332 dwelling units were entered as “Apartments-Mid Rise”
- 625 spaces were entered as “Enclosed Parking with Elevator,” and
- 7 spaces as “Parking Lot”

In addition, 19,496 cy of soil off-haul is anticipated during the grading phase and hauling of 800 cy of asphalt is anticipated during the paving phase and was entered into the model for Phase 2.

##### Phase 3:

- 432 dwelling units were entered as “Apartments-Mid Rise”
- 760 spaces were entered as “Enclosed Parking with elevator”
- 6 spaces as “Parking Lot,” and
- 4,900 sf as “Strip Mall”

In addition, 20,919 cubic yards of soil off-haul is anticipated during the grading phase and hauling of 800 cy of asphalt is anticipated during the paving phase and was entered into the model for Phase 3.

Phase 4:

- 556 dwelling units were entered as “Apartments-Mid Rise”
- 905 spaces were entered as “Enclosed Parking with elevator,” and
- 4 spaces as “Parking Lot”

In addition, 18,459 cubic yards of soil off-haul is anticipated during the grading phase and hauling of 800 cy of asphalt is anticipated during the paving phase and was entered into the model for Phase 4.

Phase 5:

- 225 rooms were entered as “Hotel”
- 339 spaces were entered as “Enclosed Parking with elevator,” and
- 5,200 sf as “Strip Mall”

In addition, 7,585 cubic yards (cy) of soil off-haul is anticipated during the grading phase and hauling of 800 cy of asphalt is anticipated during the paving phase and was entered into the model for Phase 5. The project area was entered as 21.4 acres for each phase.

The project would be built out over a period of approximately 6 to 8 years beginning in October 2018, or an approximate 1,408 to 1,777 construction workdays (assuming an average 260 construction days per year). The construction schedule provided by the applicant makes the following assumptions:

- Phase 1 would be built over a period of 12 months beginning in October 2018.
- Phase 2 would be built over a period of 12 months beginning in July 2019.
- Phase 3 would be built over a period of 12 months beginning in April 2020.
- Phase 4 would be built over a period of 14 months beginning in March 2022.
- Phase 5 would be built over a period of 19 months beginning in January 2024.

Average daily emissions were computed for each phase by dividing the total construction emissions by the number of construction days. Table 2 shows average daily construction emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub> exhaust, and PM<sub>2.5</sub> exhaust during construction of the project. As indicated in Table 2, estimated the construction period emissions would not exceed the BAAQMD significance thresholds. *Attachment 2* includes the CalEEMod input and output worksheets.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM<sub>10</sub> and PM<sub>2.5</sub>. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less than significant if best management practices are implemented to reduce these emissions. *Mitigation Measure 1 would implement BAAQMD-recommended best management practices.*

**Table 2. Construction Period Emissions by Phase**

Scenario	ROG	NOx	PM <sub>10</sub> Exhaust	PM <sub>2.5</sub> Exhaust
Phase 1 (tons)	3.06	7.14	0.31	0.29
Phase 2 (tons)	3.60	6.17	0.27	0.25
Phase 3 (tons)	4.34	5.70	0.24	0.22
Phase 4 (tons)	4.78	6.97	0.27	0.25
Phase 5 (tons)	1.69	6.06	0.24	0.22
Total construction emissions (tons)	17.43 tons	32.0 tons	1.32 tons	1.24 tons
<b>Average daily emissions (pounds)<sup>1</sup></b>	<b>24.8 lbs./day</b>	<b>45.5 lbs./day</b>	<b>1.9 lbs./day</b>	<b>1.8 lbs./day</b>
<i>BAAQMD Thresholds (pounds per day)</i>	54 lbs./day	54 lbs./day	82 lbs./day	54 lbs./day
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
Notes: <sup>1</sup> Assumes 1,408 workdays.				

Operational Period Emissions

Operational air emissions from the project would be generated primarily from autos driven by future residents, employees and customers. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from these types of uses. CalEEMod was used to estimate emissions from operation of the proposed project assuming full build-out.

*Land Uses*

The project land uses were input to CalEEMod, as described above.

*Model Year*

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest a component of the project could possibly be constructed and begin operating would be 2020. Emissions associated with build-out later than 2020 would be lower.

*Trip Generation Rates*

CalEEMod allows the user to enter specific vehicle trip generation rates, which were input to the model using the daily trip generation rate provided in the project trip generation table for net project trips. The default trip lengths and trip types specified by CalEEMod were used.

*Energy*

CalEEMod defaults for energy use were used, which are assumed to include 2013 Title 24 Building Standards.



### Other Inputs

Default model assumptions for emissions associated with solid waste generation and water/wastewater use were applied to the project.

### Project Generator

The only source of stationary air pollutants identified with build-out of the project is assumed to be an emergency back-up generator. The project proposes the inclusion of a 100 kW (approximately 135 HP) generator. It is assumed for this assessment that the generator would be driven by a diesel-fueled engine.

The emergency back-up generator would be used for backup power in emergency conditions. The generator would be operated for testing and maintenance purposes, with a maximum of 50 hours each per year of non-emergency operation under normal conditions allowed by BAAQMD. During testing periods the engine would typically be run for less than one hour. The engine would be required to meet CARB and EPA emission standards and consume commercially available California low-sulfur diesel fuel. The generator emissions were modeled using CalEEMod.

**Table 3. Operational Emissions**

Scenario	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2020 Phase1	1.82 tons	2.23 tons	1.45 tons	0.42 tons
2021 Phase1+Phase2	4.72 tons	4.86 tons	3.16 tons	0.91 tons
2022 Phase1+Phase2+Phase3	7.61 tons	6.87 tons	5.47 tons	1.57 tons
2024 Phase1+Phase2+Phase3+Phase4	10.65 tons	8.67 tons	8.44 tons	2.42 tons
2026 Full Build Out Phase1+Phase2+Phase3+Phase4+Phase5	11.78 tons	10.09 tons	9.92 tons	2.85 tons
Previous Existing Industrial/Office Use	1.56 tons	1.62 tons	1.62 tons	0.46 tons
<b>Net Emissions</b>	<b>10.22 tons</b>	<b>8.47 tons</b>	<b>8.30 tons</b>	<b>2.39 tons</b>
<i>BAAQMD Thresholds (tons /year)</i>	<i>10 tons</i>	<i>10 tons</i>	<i>15 tons</i>	<i>10 tons</i>
<b>Exceed Threshold?</b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>No</b>
Net Project Operational Emissions ( <i>pounds/day</i> )	56.0 lbs	46.4 lbs	45.5 lbs	13.1 lbs
<i>BAAQMD Thresholds (pounds/day)</i>	54 lbs.	54 lbs.	82 lbs.	54 lbs.
<b>Exceed Threshold?</b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>No</b>

<sup>1</sup> Assumes 365-day operation.

As shown in Table 3, operational emissions of ROG would exceed the BAAQMD significance thresholds. ROG emissions are mostly the result of consumer product use. *Mitigation Measure 2* would reduce mobile emissions from build-out of the project by 10 percent; however, total ROG emissions would still exceed the thresholds of 54 pounds per average day.

### **Mitigation Measure 1: Include basic measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures

recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. 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.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
5. 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.
6. 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.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

The project shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average 92 percent reduction in PM<sub>10</sub> exhaust emissions or more. The plan should include, but it not limited to, one or more of the following:

9. All mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the site for more than two days continuously shall meet, at a minimum, U.S. EPA particulate matter emissions standards for Tier 4 engines or

equivalent and include the use of equipment that includes CARB-certified Level 3 Diesel Particulate Filters.<sup>5</sup>

10. Use of alternatively-fueled equipment (i.e., non-diesel), such as electric, biodiesel, or LPG for example, would meet this requirement.

11. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant.

#### Effectiveness of Mitigation Measure 1

Implementation of Mitigation Measure 1 is considered to include all recommended basic control measures listed by BAAQMD and reduce exhaust emissions by 5 percent. This measure would considerably reduce on-site diesel exhaust emissions from off-road equipment operation.

#### ***Mitigation Measure 2: Reduce VMT/vehicle trips by at least 20 percent.***

*The project shall develop a plan that would reduce VMT/vehicle trips by 20 percent, of which would include a Transportation Demand Management (TDM) that would be designed to reduce VMT/vehicle trips by at least 10 percent.*

#### ***Mitigation Measure 3: Include low VOC coatings to reduce ROG emissions.***

*The project shall use low volatile organic compound or VOC (i.e., ROG) coatings, that are below current BAAQMD requirements (i.e., Regulation 8, Rule 3: Architectural Coatings), for at least 50 percent of all residential and nonresidential interior and exterior paints. This includes all architectural coatings applied during both construction and reapplications throughout the project's operational lifetime. At least 50 percent of coatings applied must meet a "super-compliant" VOC standard of less than 10 grams of VOC per liter of paint. For reapplication of coatings during the project's operational lifetime, the Declaration of Covenants, Conditions, and Restrictions shall contain a stipulation for low VOC coatings to be used.*

#### Effectiveness of Mitigation Measure 2 and 3

Implementation of Mitigation Measure 2 is considered to only feasibly reduce the number of new traffic trips by about 8 percent, assuming weekend trips are not affected. Since 80 percent of the ROG emissions are associated with consumer product use and maintenance painting of individual units and the buildings, total ROG emissions would only be reduced by 2 percent from this mitigation measure. Mitigation Measure 2 would reduce ROG emissions by 0.19 tons per year.

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<sup>5</sup> See <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm> for more information.

Mitigation Measure 3 would reduce ROG emissions from architectural coatings by about 40 percent. Architectural coatings make up about 11.5 percent of the project ROG emissions, so this would equate to a reduction of 4.6 percent of ROG emissions. Mitigation Measure AQ-3 would reduce ROG emissions by 0.54 tons per year.

The combination of Mitigation Measure 2 and 3 would reduce ROG emissions by 0.73 tons per year. This would reduce the net project ROG emissions from 10.22 to 9.49 tons per year or from 56.0 to 52.0 pounds per day. ROG emissions would be reduced below the annual and average daily thresholds for operational emissions. The impact would be considered *Less than Significant with Mitigation*.

**Impact:** Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

As discussed above, the project would have less than the significance thresholds adopted by BAAQMD for evaluating impacts related to NO<sub>x</sub> and particulate matter but significant emissions of ROG. Impacts related to ROG emissions, which could have a very minor effect on ozone levels, are addressed under the impact described above that addresses cumulatively considerable net increases of any criteria pollutant or precursor and were identified as *Significant*. At the local level, the project would not contribute substantially to existing or projected violations of those standards. Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the carbon monoxide standard. The highest measured level over any 8-hour averaging period in the Bay Area during the last 3 years is less than 3.0 ppm, compared to the ambient air quality standard of 9.0 ppm. The project would generate a relatively small amount of new traffic. Based on the trip generation rates, the project would add approximately 9,831 daily trips (or about 1,000 peak hour trips) and would not affect high-volume intersections that have the potential to result in exceedances of an ambient air quality standard for carbon monoxide. BAAQMD screening guidance indicates that the project would have a less than significant impact with respect to carbon monoxide levels if project traffic projections indicate traffic levels would not increase at any affected intersection to more than 44,000 vehicles per hour.<sup>6</sup> Because cumulative traffic volumes at all intersections affected by the project would have less than 44,000 vehicles per hour, the project will have a *less-than significant* effect with respect to carbon monoxide.

**Impact:** Expose sensitive receptors to substantial pollutant concentrations?

Project impacts related to increased community risk can occur either by introducing a new

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<sup>6</sup> For a land-use project type, the BAAQMD CEQA Air Quality Guidelines state that a proposed project would result in a less than significant impact to localized carbon monoxide concentrations if the project would not increase traffic at affected intersections to more than 44,000 vehicles per hour.

sensitive receptor, such as a residential use, in proximity to an existing source of TACs or by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity. The project would introduce new sensitive receptors (residences) in the proximity of nearby TAC sources, such as El Camino Real (State Route 82), local roadways, stationary sources, and railroad traffic. Though not necessarily a CEQA issue, the effect of existing TAC sources on future project receptors (residences) is analyzed to comply with the Clean Air Plan goal of reducing population exposure and protecting public health in the Bay Area. The BAAQMD recommends using a 1,000-foot screening radius around a project site for purposes of identifying community health risk from siting a new sensitive receptor or a new source of TACs.

The project would not be a substantial source of localized TACs. However, temporary project construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors.

### **Operational Community Risk Impacts (Planning Consideration)**

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site. These sources include freeways or highways, busy surface streets and stationary sources identified by BAAQMD. Traffic on high volume roadways is a source of TAC emissions that may adversely affect sensitive receptors in close proximity to the roadway. For local roadways, BAAQMD considers roadways with traffic volumes of over 10,000 vehicles per day to have a potentially significant impact on a proposed project. A review of the project area identified several sources of TAC emissions, such as SR-82/El Camino Real, local surface streets, multiple stationary sources, and nearby railroad traffic. Community risks from each source are discussed below.

#### El Camino Real (SR 82) and Local Roadways

BAAQMD provides a Highway Screening Analysis Google Earth Map tool to identify estimated risk and hazard impacts from highways throughout the Bay Area. Cumulative risk, hazard and PM<sub>2.5</sub> impacts at various distances from the highway are estimated for different segments of the highways. The tool uses the average annual daily traffic (AADT) count, fleet mix and other modeling parameters specific to that segment of the highway. Impacts from Link 319 (6ft elevation) SR-82, which is about 750 feet southwest of the project site, were identified using this tool. The cancer risk at the nearest project receptor was found to be 3.4 in a million. The PM<sub>2.5</sub> concentration was found to be 0.02 µg/m<sup>3</sup> and the HI was calculated as less than 0.01. The estimated cancer risk was adjusted using a factor of 1.3744 to account for new OEHHA guidance. This factor was provided by BAAQMD for use with their CEQA screening tools.<sup>7</sup>

For local roadways, BAAQMD has provided the *Roadway Screening Analysis Calculator* to assess whether roadways with traffic volumes of over 10,000 vehicles per day may have a potentially significant effect on a proposed project. Two adjustments were made to the cancer risk predictions

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<sup>7</sup> Correspondence with Alison Kirk, BAAQMD, November 23, 2015.

made by this calculator: (1) adjustment for latest vehicle emissions rates and (2) adjustment of cancer risk to reflect new OEHHA guidance (see *Attachment 1*).

The calculator uses EMFAC2011 emission rates for the year 2014. Overall, emission rates will decrease by the time the project is constructed and occupied. A new version of the emissions factor model, EMFAC2014 is available. This version predicts lower emission rates. An adjustment factor of 0.5 was developed by comparing emission rates of total organic gases (TOG) for running exhaust and running losses developed using EMFAC2011 for year 2014 and those from EMFAC2014 for year 2018.<sup>8</sup>

As described previously, the predicted cancer risk was then adjusted using a factor of 1.3744 to account for new OEHHA guidance. This factor was provided by BAAQMD for use with their CEQA screening tools that are used to predict cancer risk.<sup>9</sup>

The average daily traffic (ADT) on Coleman Avenue was estimated to be 48,370 by multiplying cumulative plus project p.m. peak traffic volumes from the project traffic report by ten. Using the BAAQMD *Roadway Screening Analysis Calculator* for Santa Clara County for north-south directional roadways and at a distance of approximately 50 feet east of the roadway, estimated cancer risk from Coleman Avenue at the nearest project site receptor would be 21.2 in one million and PM<sub>2.5</sub> concentration would be 0.7 µg/m<sup>3</sup>. Chronic or acute HI for the roadway would be below 0.03. Estimated cancer risk and PM<sub>2.5</sub> would exceed the BAAQMD risk thresholds. *Recommended Measure 3 would reduce this risk*, such that excess cancer risk is estimated to be 6.4 in one million and annual PM<sub>2.5</sub> concentration would be 0.2 µg/m<sup>3</sup>.

Brokaw Road is estimated to have an ADT of 4,780, which is below the BAAQMD roadway screening size of 10,000 and would not result in a substantial health risk to receptors at the project site.

### Railroad Traffic

The project site is located near Caltrain and other rail lines, and rail activity currently generates TAC and PM<sub>2.5</sub> emissions from locomotive exhaust. These rail lines are used for passenger (Caltrain, ACE, and Amtrak) and freight service by trains using diesel fueled locomotives. The project site is about 285 feet or greater from the nearest rail line and about 325 feet from the Santa Clara Caltrain Station Platform. The Peninsula Corridor Electrification Project is a key component of the Caltrain Modernization Program that would electrify the Caltrain Corridor from San Francisco to San Jose. Under this program, diesel-locomotive hauled trains would be converted to Electric Multiple Unit (EMU) trains after 2020.

Currently all of Caltrain's trains use diesel locomotives. As part of the program to modernize operation of the Caltrain rail corridor between San Jose and San Francisco, Caltrain is planning to

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<sup>8</sup> Though the project will likely be operational after 2018, this analysis year was used for the *Roadway Screening Analysis Calculator* as a conservative measure for estimating community risk.

<sup>9</sup> Correspondence with Alison Kirk, BAAQMD, November 23, 2015.

switch from diesel locomotives to use of electric trains in the near future.<sup>10</sup> Nearly all of the trains in the future are planned to be EMU trains, which are self-propelled electric rail vehicles that can accelerate and decelerate at faster rates than diesel power trains, even with longer trains. As a result, Caltrain would be able to increase the number of trains during peak periods to accommodate service demand. This plan was formally adopted on January 8, 2015 and electrified service is anticipated to begin in 2020 or 2021.<sup>11</sup>

Based on the current Caltrain schedule, there are 92 trains passing the project site during the weekdays, 32 trains during the weekend, and 4 additional trains that only run on Saturday. Electrification of Caltrain would eliminate DPM emissions from most of these trains and would increase the number of weekday trains from 92 to 114. Amtrak's Capitol Corridor and Coast Starlight passenger trains either stop at or pass by the Santa Clara Station. Based on current Amtrak schedules, the Amtrak Capitol Corridor, which provides service between Sacramento/Auburn and San Jose, has 8 weekday trains and 7 weekend trains that used these rail lines. The Amtrak Coast Starlight operates between Seattle and Los Angeles, with 2 daily trains. In addition to the Caltrain and Amtrak trains, there are about ten freight trains that also use this rail line on a daily basis.<sup>12</sup>

Caltrain plans for 2021 service between San Jose and San Francisco to use a mixed fleet of EMUs and diesel locomotives, with approximately 75 percent of the service being electric and 25 percent being diesel. In 2021, some peak service trains would be diesel on weekdays. All other service, including off-peak periods, would be EMU-based. Off-peak periods include early morning, midday, and after 7:00 p.m. After 2020, diesel locomotives would be replaced with EMUs over time as they reach the end of their service life. Caltrain's diesel-powered locomotives would continue to be used to provide service between the San Jose Diridon Station and Gilroy. It is expected that 100 percent of the San Jose to San Francisco fleet would be EMUs by 2026 to 2029.<sup>13</sup>

With Caltrain electrification, it was assumed that during 2020 all trains would continue to use diesel locomotives. There would be 92 daily weekday trips, and 32 daily weekend trips with 4 additional trips on Saturdays. On an annual average basis there would be a total of 75 daily trains using diesel locomotives. Fifty of these trains would stop at the Santa Clara Station and 25 would pass the station without stopping. Starting in 2021 there would be 24 daily weekday trips and 4 daily weekend trips with 4 additional trips on Saturdays using trains with diesel locomotives.<sup>14</sup> On an annual average basis there would be a total of 19 daily trains using diesel locomotives. One of these trains would stop at the Santa Clara Station and 18 would pass the station without stopping. From 2026 on it was conservatively assumed that there would be 4 daily weekday diesel trains that pass by the Santa Clara Station. All of Amtrak's Capitol Corridor trains stop at the Santa Clara Station and the Coast Starlight trains pass by the station. All trains used for freight service were assumed to use diesel powered locomotives and pass by the station.

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<sup>10</sup> Caltrain, 2014. *Peninsula Corridor Electrification Project. Final Environmental Impact Report.* December 2014.

<sup>11</sup> Caltrain, 2015. *Peninsula Corridor Electrification Fact Sheet.* May 2015.

<sup>12</sup> *Bay Area Regional Rail Plan, Technical Memorandum 4a, Conditions, Configuration & Traffic on Existing System,* Metropolitan Transportation Commission, November 15, 2006.

<sup>13</sup> Ibid

<sup>14</sup> Caltrain 2015. *Short Range Transit Plan: FY2015-2024.* October 1, 2015.

The schedule for Caltrain electrification has recently become an issue due to the reliance on federal funds that would contribute to the construction costs. These funds are under review, so the schedule could be delayed and the length of any delay would be unknown. To address this issue, a scenario that assumes Caltrain would use all diesel-powered locomotives in the future was also evaluated. In addition, the future increase in the number of trains was assumed and that increase was also assumed to be made up of diesel locomotives. This provides the worst-case analysis of health risks from the Caltrain railroad. The same modeling parameters described above apply, except all assumed electric trains would be diesel-powered.

DPM and PM<sub>2.5</sub> emissions from trains on the rail line were calculated using EPA emission factors for locomotives<sup>15</sup> and CARB adjustment factors to account for fuels used in California.<sup>16</sup> Caltrain's current locomotive fleet consists of twenty 3,200 horsepower (hp) locomotives of model year or overhaul date of 1999 or later, three 3,200 hp locomotives of model year 1998, and six 3,600 hp locomotives of model year 2003.<sup>17</sup> The current fleet average locomotive engine size is about 3,285 hp. In estimating diesel emissions for 2021 prior to electrification a fleet average locomotive engine size of 3,285 hp was used. When electrification occurs, Caltrain will retain the six 3,600 hp locomotives and the three model year 1998 3,200 hp locomotives.<sup>18</sup> In estimating diesel locomotive emissions for the case of electrification, average locomotive horsepower of 3,467 hp was used. Amtrak passenger trains were assumed to use 3,200 hp diesel locomotives and would continue to do so in the future. Emissions from the freight trains were calculated assuming they would use two diesel locomotives with 2,300 hp engines.

Passenger and freight trains that would not stop at the Santa Clara Station were assumed to be traveling at an average speed of 40 mph in the vicinity of the project site. Passenger trains stopping at the Santa Clara Station were assumed to be traveling at an average speed of 10 mph in the vicinity of the station. Since the exposure duration used in calculating cancer risks is 30 years (in this case the period from 2020 through 2049), the passenger and freight train average DPM emissions were calculated based on average EPA emission factors for 2020 and the periods 2021-2025, 2026-2049.

Dispersion modeling of locomotive emissions was conducted using the EPA's AERMOD dispersion model and five-year data set (2006-2010) of hourly meteorological data from the San Jose Airport prepared for use with the AERMOD model by the BAAQMD. Locomotive emissions from train travel within about 1,000 feet of the project site were modeled as four line sources comprised of a series of volume sources along the rail line. DPM concentrations were calculated at receptor locations placed within the proposed residential areas of the project (Buildings 1 through 4). Receptor heights of 1.5 meters (5 feet), 4.5 meters (15 feet), and 7.6 meters (25 feet), representative of breathing heights on the first, second, and third floor levels of the proposed

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<sup>15</sup> *Emission Factors for Locomotives*, USEPA 2009 (EPA-420-F-09-025)

<sup>16</sup> *Offroad Modeling, Change Technical Memo*, Changes to the Locomotive Inventory, CARB July 2006.

<sup>17</sup> *Caltrain Commute Fleets*. Available at: <http://www.caltrain.com/about/statsandreports.html>. Accessed March 4, 2016.

<sup>18</sup> Caltrain 2015. *Short Range Transit Plan: FY2015-2024*. October 1, 2015.



residential buildings, were used in the modeling. Figure 1 shows the railroad line segments used for the modeling and receptor locations at the project site where concentrations were calculated.

Maximum health risk impacts at the project site are reported in Table 4. The maximum modeled long-term DPM and PM<sub>2.5</sub> concentrations occurred at the first floor level in the southwestern portion of the residential area of Building 4. The location of maximum cancer risk is shown in Figure 1. Based on the modeling, the maximum annual PM<sub>2.5</sub> concentration from DPM emitted by trains was 0.03 µg/m<sup>3</sup>. Increased cancer and non-cancer health risks were calculated using model results and the methods recommended by the BAAQMD, as described in *Attachment 3*.

**Table 4. Maximum Health Risk Impacts from Caltrain Rail Line**

Roadway/Setback	Cancer Risk (per million)	PM <sub>2.5</sub> Concentration (µg/m <sup>3</sup> )	Hazard Index (HI)
Trains (assuming Caltrain electrification)	9.2	0.03	<0.01
Trains (assuming no Caltrain electrification)	<b>14.6</b>	0.03	<0.01
<i>BAAQMD Thresholds</i>	<i>10.0</i>	<i>0.3</i>	<i>1.0</i>

Note: **Bold** denotes levels above single-source thresholds.

As shown in Table 4, the increased lifetime cancer risk assuming electrification would be below the BAAQMD significance thresholds for lifetime cancer risk, annual PM<sub>2.5</sub> concentrations and hazards based on the predicted Health Index. When assuming no future electrification and an increase in the number of Caltrain trains, the predicted cancer risk would exceed the threshold of 10.0 chances per million. *Recommended Measure 3 would reduce this risk*, such that excess cancer risk is estimated to be 4.4 in one million.

#### Norman Y. Mineta San Jose International Airport

Located northeast of the project is the San Jose International Airport, which contains multiple TAC sources (such as diesel tugs and trucks). No screening tools are available from BAAQMD for the airport sources as a whole and, as a conservative measure, *Recommended Measure 3* would reduce this risk.

#### Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Stationary Source Risk & Hazard Analysis Tool*. This mapping tool uses Google Earth and identified the location of four stationary sources and their estimated risk and hazard impacts. The 2012 estimated risk values were adjusted using the 1.3744 factor. The risk values were then adjusted with the appropriate distance multiplier values provided by BAAQMD. The values reported below reflect the above adjustments. Several facilities identified using the tool have since closed, as indicated by correspondence with BAAQMD.<sup>19</sup>

<sup>19</sup> Correspondence with Alison Kirk, BAAQMD & I&R, May 10, 2017.

- Plant 19357, which is a facility operated by Atlantic – San Jose, located at 1250 Aviation Avenue, is about 400 feet northeast of the project site. At BAAQMD’s direction, risk and PM<sub>2.5</sub> concentrations from the facility were adjusted based on BAAQMD’s *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. According to the BAAQMD screening data (and adjusted for the 400 foot distance and 2015 OEHHA methodology), this facility would result in an adjusted lifetime risk of 3.7 per million and 0.0 µg/m<sup>3</sup> PM<sub>2.5</sub> concentration, and <0.01 Hazard Index (HI), which would all be below BAAQMD thresholds of significance.

**Figure 1. Project Site, On-site Residential Receptors, Rail Line Segments Evaluated, and Locations of Maximum Cancer Risk**



- Plant 15839, which is an emergency backup generator operated by Santa Clara Police Facility, located at 601 El Camino Real, is about 700 feet southwest of the project site. At BAAQMD’s direction, risk and PM<sub>2.5</sub> concentrations from the facility were adjusted based

on BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. According to the BAAQMD screening data (and adjusted for the 700 foot distance and 2015 OEHHA methodology), this facility would result in an adjusted lifetime cancer risk of 9.1 per million and 0.0  $\mu\text{g}/\text{m}^3$  PM<sub>2.5</sub> concentration, and <0.01 Hazard Index (HI), which would all be below BAAQMD thresholds of significance.

- Plant G9614, which is a gas dispensing facility operated by Costco Wholesale #129 located at 1601 Coleman Avenue, is about 900 feet west of the project site. At BAAQMD's direction, risk and PM<sub>2.5</sub> concentrations from the facility were adjusted based on BAAQMD's *Distance Adjustment Multiplier Tool for Gasoline Dispensing Facilities*. According to the BAAQMD screening data (and adjusted for the 900 foot distance and 2015 OEHHA methodology), this facility would result in an adjusted lifetime cancer risk of 4.0 per million and 0.0  $\mu\text{g}/\text{m}^3$  PM<sub>2.5</sub> concentration, and <0.01 Hazard Index (HI), which would all be below BAAQMD thresholds of significance.
- Plant 10821, which is facility operated by Hewlett-Packard Aviation, located at 1210 Aviation Avenue, is about 850 feet northeast of the project site. At BAAQMD's direction, risk and PM<sub>2.5</sub> concentrations from the facility were adjusted based on BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. According to the BAAQMD screening data (and adjusted for the 850 foot distance and 2015 OEHHA methodology), this facility would result in an adjusted lifetime cancer risk of 1.5 per million and 0.0  $\mu\text{g}/\text{m}^3$  PM<sub>2.5</sub> concentration, and <0.01 Hazard Index (HI), which would all be below BAAQMD thresholds of significance.

### ***Recommended Measure 3: Mechanical Ventilation with Filtration***

Maintained ventilation systems with high-efficiency air filtration of the fresh air supply would reduce overall concentrations of DPM and PM<sub>2.5</sub> concentrations, substantially lowering cancer risk and annual PM<sub>2.5</sub> concentrations. These systems should be installed on either an individual unit-by-unit basis, with individual air intake and exhaust ducts ventilating each unit separately, or through a centralized building ventilation system.

The U.S. EPA reports particle size removal efficiency for filters rated MERV13 of 90 percent for particles in the size range of 1 to 3  $\mu\text{m}$  and less than 75 percent for particles 0.3 to 1  $\mu\text{m}$ .<sup>20,21</sup> The BAAQMD's *Planning Healthy Places* guidance indicates that MERV13 air filtration devices installed on an HVAC air intake system can remove 80-90 percent of indoor particulate matter (greater than 0.3 microns in diameter).<sup>22</sup>

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<sup>20</sup> American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc., 2007. *Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size*. ANSI/ASHRAE Addendum b to Standard 52.2-2007

<sup>21</sup> United States Environmental Protection Agency (U.S. EPA), 2009. *Residential Air Cleaners (Second Edition): A Summary of Available Information*. U.S. EPA 402-F-09-002. Revised August 2009.

<sup>22</sup> Bay Area Air Quality Management District (BAAQMD), 2016. *Planning Healthy Places A Guidebook for addressing local sources of air pollutants in community planning*. May.

1. Design the site to limit exposure from sources of TACs and fine particulate matter (PM<sub>2.5</sub>) emissions. The final site layout shall locate operable windows and air intakes as far as possible and feasible from TAC sources. Any modifications to the site design shall incorporate buffers between residences and nearby TAC sources.
2. Install air filtration at all residential units. Air filtration devices shall be rated MERV13 or higher. To ensure adequate health protection to sensitive receptors, a ventilation system shall meet the following minimal design standards:
  - a. A MERV13 or higher rating;
  - b. At least one air exchange(s) per hour of fresh outside filtered air; and
  - c. At least four air exchange(s) per hour recirculation.Alternately, at the approval of the City, equivalent control technology may be used if it is shown by a qualified air quality consultant or heating, ventilation, and air conditioning (HVAC) engineer that it would reduce risk below significance thresholds.
3. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required. Recognizing that emissions from air pollution sources are decreasing, the maintenance period shall last as long as significant excess cancer risk or annual PM<sub>2.5</sub> exposures are predicted. Subsequent studies could be conducted by an air quality expert approved by the City to identify the ongoing need for the filtered ventilation systems as future information becomes available.
4. Ensure that the lease agreement and other property documents (1) require cleaning, maintenance, and monitoring of the affected units for air flow leaks; (2) include assurance that new owners and tenants are provided information on the ventilation system; and (3) include provisions that fees associated with owning or leasing a unit(s) in the building include funds for cleaning, maintenance, monitoring, and replacements of the filters, as needed.
5. Require that, prior to building occupancy, an authorized air pollutant consultant or HVAC engineer verify the installation of all necessary measures to reduce toxic air contaminant (TAC) exposure.
6. To the greatest degree possible, plant vegetation along the project site boundaries and around outdoor use areas. This barrier would include trees and shrubs that provide a dense vegetative barrier.

### With the Implementation of Recommended Measure 3

A properly installed and operated ventilation system with MERV 13 air filters will reduce PM<sub>2.5</sub> concentrations, including from DPM, from mobile and stationary sources by 80 percent or greater indoors when compared to outdoors. The U.S. EPA reports that people, on average, spend 90 percent of their time indoors.<sup>23</sup> The overall effectiveness calculations take into effect time spent outdoors. Assuming two hours of outdoor exposure plus one hour of open windows (calculated as outdoor exposure) per day, the overall effectiveness of the MERV 13 filtration systems would be

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<sup>23</sup> Klepeis, N.E., Nelsen, W.C., Ott, W.R., Robinson, J.P., Tsang, A.M., Switzer, P., Behar, J.V., Hern, S.C., and Engelmann, W.H. 2001. *The National Human Activity Pattern Survey (NHAPS): a resource for assessing exposure to environmental pollutants*. J. Expo Anal Environ Epidemiol. 2001 May-Jun;11(3):231-52.

70 percent. Implementation of Recommended Measure 3 is estimated to reduce single-source cancer risk from Coleman Avenue to 6.4 in one million, and single-source cancer risk from railroad traffic to 4.4 in one million, both of which would be below the BAAQMD significance thresholds.

### **Project Construction Activity**

Construction activities, particularly during site preparation and grading would temporarily generate fugitive dust in the form of respirable particulate matter (PM<sub>10</sub>) and PM<sub>2.5</sub>. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less than significant if best management practices are employed to reduce these emissions. *Mitigation Measure 1 would implement BAAQMD-required best management practices.*

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may still pose community risks for sensitive receptors such as nearby residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to PM<sub>2.5</sub>. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A community risk assessment of the project construction activities was conducted that evaluated potential health effects of sensitive receptors at these nearby residences from construction emissions of DPM and PM<sub>2.5</sub>.<sup>24</sup> A review of the project site did not reveal any sensitive receptors within 1,000 feet of the project site. However, since project construction would be phased, future on-site residences would be considered sensitive receptors for later phases of construction since it is assumed that phases of the project would become operational once constructed. Emissions and dispersion modeling was conducted to estimate the on-site DPM concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

### On-Site Construction TAC Emissions

Construction period emissions were computed using CalEEMod along with projected construction activity, as described above. The CalEEMod model provided total annual PM<sub>10</sub> exhaust emissions (assumed to be DPM) for the off-road construction equipment used for construction of the project and for the exhaust emissions from on-road vehicles (haul trucks, vendor trucks, and worker vehicles) of 0.5015 tons (1,003 pounds) over the entire construction period. A trip length of one mile was used to represent vehicle travel while at or near the construction site. For modeling purposes, it was assumed that these emissions from on-road vehicles would occur at the construction site. Fugitive dust PM<sub>2.5</sub> emissions were also computed and included in this analysis. The model predicts emissions of 0.3763 tons (753 pounds) of fugitive PM<sub>2.5</sub> over the construction period. *Attachment 2* includes the CalEEMod input and output worksheets and risk modeling calculations.

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<sup>24</sup> DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

## Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and PM<sub>2.5</sub> concentrations at all the sensitive receptors that would be introduced by the proposed project. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.<sup>25</sup> Building 1 is scheduled to be occupied by residents by 2020. Phase 2 and Phase 3 would be under construction during 2020. Hence, to estimate DPM and PM<sub>2.5</sub> concentrations during 2020, four area sources were used – two for DPM and two for fugitive dust. Phase 4 would be constructed between 2022 – 2023. Hence, to compute concentration and risks during 2023 and 2024, two area sources were used – one for DPM and one for fugitive dust. Phase 5 would be constructed between 2024 – 2025. Again, for computing concentrations during 2024 and 2025, two area sources were used – one for DPM and one for fugitive dust. To represent the construction equipment exhaust emissions, an emission release height of 6 meters (19.7 feet) was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive PM<sub>2.5</sub> emissions, a near-ground level release height of 2 meters (6.6 feet) was used for the area source. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Construction emissions were modeled as occurring daily between 7 a.m. to 4 p.m., when the majority of construction activity would occur.

The modeling used a 5-year meteorological data set (2006 – 2010) from the Mineta San Jose International Airport meteorological station prepared for use with the AERMOD model by the CARB. Annual DPM and PM<sub>2.5</sub> concentrations from construction activities during the 2020 – 2026 period were calculated using the model. DPM and PM<sub>2.5</sub> concentrations were calculated at the future sensitive receptors. Receptor height of 1.5 meters (4.9 feet) and 4.5 meters (14.7 feet) was used to represent the breathing height of the future residents at the first and second floor levels of the proposed residential buildings

### Cancer Risks (Planning Consideration)

Results of this assessment indicate that the maximum excess residential cancer risks would be 122.6 in one million for an infant exposure and 2 in one million for an adult exposure. The maximally exposed individual (MEI) would be located at the first floor level of Building 3 (see Figure 2). The maximum residential excess cancer risk at the MEI would be greater than the BAAQMD significance threshold of 10 in one million. *Implementation of Mitigation Measures 1 would reduce this risk to below the BAAQMD threshold of significance.*

### Predicted Annual PM<sub>2.5</sub> Concentration (Planning Consideration)

The maximum-modeled annual PM<sub>2.5</sub> concentration, which is based on combined exhaust and fugitive dust emissions, was 1.4 µg/m<sup>3</sup> and would occur at the cancer risk MEI. The maximum

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<sup>25</sup> Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0*. May.

annual PM<sub>2.5</sub> concentration would exceed the BAAQMD significance threshold of 0.3 µg/m<sup>3</sup>. The implementation of mitigation measure 1 would reduce PM<sub>2.5</sub> concentrations to 0.24 µg/m<sup>3</sup>, which is below the BAAQMD significance threshold.

#### Non-Cancer Hazards (Planning Consideration)

The maximum computed HI based on DPM concentration would be 0.12, which is lower than the BAAQMD significance threshold of 1.0

#### Project Emergency Generator testing and Maintenance

As previously described, the project would include one 100KW, diesel-fueled generator. The generator will be operated for testing and maintenance purposes, with a maximum of 50 hours per year of non-emergency operation under normal conditions. During testing periods the engine would typically be run for less than one hour under light engine loads. The engines would be required to meet U.S. EPA emission standards and consume commercially available California low sulfur diesel fuel.

The generator would require a permit from the BAAQMD, since it is equipped with an engine larger than 50 hp. As part of the BAAQMD permit requirements, an assessment that shows less-than-significant health risks from diesel particulate matter exposure would be required. The risk assessment, prepared by BAAQMD, would have to show that cancer risks are less than 10 per million and that the project includes Best Available Toxics Control Technology, which would set limits for diesel particulate matter emissions. Sources of air pollutant emissions complying with all applicable BAAQMD regulations generally will not be considered to have a significant air quality community risk impact.

Emissions from the testing and maintenance of the generators were calculated using CARB's OFFROAD emissions model for large compression-ignited engines above 25 horsepower. Results of generator modeling indicate average daily emissions of about 0.0004 pounds of DPM per day. Risk and PM<sub>2.5</sub> concentrations from a diesel generator of this size and average daily emissions were then calculated based on BAAQMD's *Risk and Hazards Emissions Screening Calculator (Beta Version)*. Results indicate that the project generator would result in an excess cancer risk of 2.4 per million,<sup>26</sup> PM<sub>2.5</sub> concentration of less than 0.01 µg/m<sup>3</sup> and HI of <0.01 at the nearest on-site receptor, all of which would be below BAAQMD thresholds of significance both on-site affecting project residences and at nearby sensitive receptors. *Attachment 3* includes emission factors and risk modeling calculations for the project emergency back-up generator.

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<sup>26</sup> Includes adjustment factor of 1.3744 to account for latest OEHHA methodology per correspondence with Alison Kirk, BAAQMD, November 23, 2015.



## Combined Construction Risk Assessment (Planning Consideration)

As discussed above, the project site is affected by multiple sources of TACs. In addition, two nearby construction projects were identified that could occur simultaneously with the proposed project: the Mission Town Center project<sup>27</sup> and the BART Silicon Valley Phase II extension project.<sup>28</sup> Table 5 shows the cancer risk associated with each source affecting the project site. The sum of impacts from combined sources (i.e., sources within 1,000 feet of the project) would exceed the cumulative threshold for cancer risk. However, with implementation of *Mitigation Measure 1 and Recommended Measure 3*, community risk at the project site would be reduced to below BAAQMD significance thresholds.

**Table 5. Cumulative Construction Risk Assessment at MEI**

Source	Maximum Cancer Risk (per million)	Maximum Annual PM <sub>2.5</sub> Concentration (µg/m <sup>3</sup> )	Maximum Hazard Index
Project Construction <i>Unmitigated</i>	122.6	1.4	0.12
<i>Implementation of Mit. Measure 1 and Recmd. Measure 3</i>	6.1	<0.3	<0.01
Mission Town Center Construction (Mitigated)	<2.7	<0.1	<0.01
BART Silicon Valley Phase II Construction (Mitigated)	<1.6	<0.1	<0.02
El Camino Real <sup>1</sup>	--	--	--
Coleman Avenue at 900 feet	2.1	0.1	<0.03
Railroad Traffic	<14.6	0.0	<0.01
Plant 19357, Atlantic – San Jose <sup>1</sup> 1250 Aviation Avenue	--	--	--
Plant 15839, Santa Clara Police Facility 601 El Camino Real	<9.1	0.0	<0.01
Plant G9614, Costco Wholesale #129 1601 Coleman Avenue <sup>1</sup>	--	--	--
Plant 10821, Hewlett-Packard Aviation 1210 Aviation Avenue <sup>1</sup>	--	--	--
Project Generator	<0.4	<0.01	<0.01
<b>Cumulative Total</b>			
<b>Unmitigated</b>	<153.1	1.7	<0.2
<b>Mitigated</b>	<36.2	<0.6	<0.09
<b>BAAQMD Threshold – Cumulative Sources</b>	<b>&gt;100</b>	<b>&gt;0.8</b>	<b>&gt;10.0</b>
<b>Exceeds Threshold After Mitigation?</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes: <sup>1</sup>This source is located over 1,000 feet from the construction MEI.

<sup>27</sup> City of Santa Clara, 2015. *Mission Town Center Draft Environmental Impact Report*. November.

<sup>28</sup> Santa Clara Valley Transportation Authority, 2016. *VTA's BART Silicon Valley – Phase II Extension Project Air Quality Study*. November.



**Recommended Measure:** Selection of equipment during construction to minimize emissions. Such equipment selection would include the following.

See Mitigation Measure 1.

Effectiveness of Mitigation Measure 1

Implementation of Mitigation Measure 1 would reduce on-site diesel particulate matter exhaust emissions by approximately 95 percent. This would reduce the cancer risk proportionally, such that the maximum mitigated risk would be 6.1 in one million. Mitigation measure 1 and Recommended measure 3 would reduce PM<sub>2.5</sub> emissions by approximately 83 percent. This would proportionally reduce the maximum modeled PM<sub>2.5</sub> concentration to 0.24 µg/m<sup>3</sup>. After implementation of these measures, the project's community risk caused by construction activities and other cumulative sources would be below BAAQMD significance thresholds.

**Figure 2. Project Construction Site and Locations of On-Site Sensitive Receptors and Maximum TAC and PM<sub>2.5</sub> Impacts**



## **Supporting Documents**

Attachment 1: Health Risk Evaluation Methodology

Attachment 2: Construction Schedule, CalEEMod Output Files and Health Risk Calculations

Attachment 3: Rail Line Impacts Modeling

Attachment 4: Generator Risk Modeling

Attachment 5: Roadway Modeling

Attachment 6: Stationary Source

## Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.<sup>32</sup> These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.<sup>33</sup> This HRA used the recent 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.<sup>34</sup> Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

### Cancer Risk

Potential increased cancer risk from inhalation of TACs are calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure, and the exposure duration. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). As recommended by the BAAQMD, 95<sup>th</sup> percentile breathing rates are used for the third trimester and infant exposures, and 80<sup>th</sup> percentile breathing rates for child and adult exposures. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways).

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<sup>32</sup> OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

<sup>33</sup> CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.

<sup>34</sup> BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. January 2016.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity that would have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

$$\text{Cancer Risk (per million)} = CPF \times \text{Inhalation Dose} \times ASF \times ED/AT \times FAH \times 10^6$$

Where:

CPF = Cancer potency factor (mg/kg-day)<sup>-1</sup>

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

AT = Averaging time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

$$\text{Inhalation Dose} = C_{\text{air}} \times DBR \times A \times (EF/365) \times 10^{-6}$$

Where:

C<sub>air</sub> = concentration in air (µg/m<sup>3</sup>)

DBR = daily breathing rate (L/kg body weight-day)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

10<sup>-6</sup> = Conversion factor

The health risk parameters used in this evaluation are summarized as follows:

Parameter	Exposure Type →	Infant		Child		Adult
	Age Range →	3 <sup>rd</sup> Trimester	0<2	2 < 9	2 < 16	16 - 30
DPM Cancer Potency Factor (mg/kg-day) <sup>-1</sup>		1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day)*		361	1,090	631	572	261
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time (years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	14	14
Exposure Frequency (days/year)		350	350	350	350	350
Age Sensitivity Factor		10	10	3	3	1
Fraction of Time at Home		0.85-1.0	0.85-1.0	0.72-1.0	0.72-1.0	0.73

\* 95<sup>th</sup> percentile breathing rates for 3<sup>rd</sup> trimester and infants and 80<sup>th</sup> percentile for children and adults

Attachment 2 : Construction Schedule, CalEEMod Output Files, Health Risk Calculations

Project Name:		Gateway Crossings (Coleman/Brokaw) Phase 1				total project acres disturbed	
Project Size	261 Dwelling Units 238,671 s.f. residential 324,000 s.f. conditioned area	HP	Load Factor	Hours/day	Avg. Hours per day	Comments	
Construction Hours	7,000 s.f. other, specify: 256,900 s.f. parking garage n/a s.f. parking lot 7 am to 4 pm						
City	Description	HP	Load Factor	Hours/day	Avg. Hours per day	Comments	
	<b>Demolition</b>			Total phase:		Overall Import/Export Volumes	
	Concrete/Industrial Saws	81	0.73			Demolition Volume	
	Excavators	162	0.38			Square footage of buildings to be demolished (or total tons to be hauled)	
	Rubber-Tired Dozers	255	0.4			7 square feet or	
	Tractors/Loaders/Backhoes	97	0.37			7 Hauling volume (tons)	
	<b>Site Preparation</b>			Total phase:	20	Any pavement demolished and hauled? 7 tons	
		Start Date:	10/7/2018				
		End Date:	11/1/2018				
3	Scrapers	361	0.48		8		
1	Skid Steer Loaders	64	0.37		20		
2	Graders	174	0.41		8		
2	Rubber Tired Dozers	255	0.4		20		
1	Tractors/Loaders/Backhoes	97	0.37		8		
	<b>Grading / Excavation</b>			Total phase:	40	Soil Hauling Volume	
		Start Date:	11/1/2018				
		End Date:	11/1/2019				
3	Scrapers	361	0.48		8		
2	Excavators	162	0.38		40		
2	Graders	174	0.41		8		
1	Rubber Tired Dozers	255	0.4		40		
1	Tractors/Loaders/Backhoes	97	0.37		8		
2	Rollers	80	0.38		40		
1	Skid Steer Loaders	64	0.37		8		
1	Sweepers	64	0.46		40		
	<b>Trenching</b>			Total phase:	20		
		Start Date:	12/1/2018				
		End Date:	1/1/2019				
1	Tractor/Loader/Backhoe	97	0.37		8		
2	Excavators	162	0.38		20		
2	Loaders	97	0.37		8		
1	Rough Terrain Forklifts	100	0.4		20		
1	Skid Steer Loaders	64	0.37		8		
	<b>Building - Exterior</b>			Total phase:	100	Cement Trucks? 2 Total Round-Trips	
		Start Date:	1/1/2019				
		End Date:	6/1/2019				
1	Cranes	226	0.29		8		
4	Forklifts	89	0.2		100		
1	Generator Sets	84	0.74		8		
1	Tractors/Loaders/Backhoes	97	0.37		8		
4	Welders	46	0.45		100		
3	Boom/Aerial Lifts	62	0.31		8		
3	Other Construction Equipment	171	0.42		8		
	<b>Building - Interior/Architectural Coating</b>			Total phase:	100		
		Start Date:	5/1/2019				
		End Date:	10/1/2019				
2	Air Compressors	78	0.48		8		
1	Aerial Lift	62	0.31		40		
1	Cranes	226	0.29		8		
1	Forklifts	89	0.2		50		
	<b>Paving</b>			Total phase:	40		
		Start Date:	7/1/2019				
		Start Date:	9/1/2019				
1	Cement and Mortar Mixers	9	0.56		8		
1	Pavers	125	0.42		40		
1	Paving Equipment	130	0.36		8		
2	Rollers	80	0.38		40		
1	Tractors/Loaders/Backhoes	97	0.37		8		
1	Sweepers	64	0.46		20		
Equipment listed in this sheet is to provide an example of inputs. Add or subtract phases and equipment, as appropriate. It is assumed that water trucks would be used during grading.							

Complete ALL Portions in Yellow

Asphalt? 600 cubic yards or \_\_\_\_ round trips?

Typical Equipment Type & Load Factors		HP	Load Factor
Aerial Lifts		62	0.31
Air Compressors		78	0.48
Bore/Drill Rigs		205	0.5
Cement and Mortar Mixers		9	0.56
Concrete/Industrial Saws		81	0.73
Cranes		226	0.29
Crawler Tractors		208	0.43
Crushing Proc. Equipment		85	0.78
Dumpers/Tenders		16	0.38
Excavators		162	0.38
Forklifts		89	0.2
Generator Sets		84	0.74
Graders		174	0.41
Off-Highway Tractors		122	0.44
Off-Highway Trucks		400	0.38
Other Construction Equipment		171	0.42
Other General Industrial Equipment		150	0.54
Other Material Handling Equipment		167	0.4
Pavers		125	0.42
Paving Equipment		130	0.36
Plate Compactors		8	0.43
Pressure Washers		13	0.2
Pumps		84	0.74
Rollers		80	0.38
Rough Terrain Forklifts		100	0.4
Rubber Tired Dozers		255	0.4
Rubber Tired Loaders		199	0.36
Scrapers		361	0.48
Signal Boards		6	0.82
Skid Steer Loaders		64	0.37
Surfacing Equipment		253	0.3
Sweepers/Scrubbers		64	0.46
Tractors/Loaders/Backhoes		97	0.37
Trenchers		80	0.5
Welders		46	0.45

Project Name: Gateway Crossings (Coleman/Brokaw) Phase 2										
Project Size	332 Dwelling Units	n/a	total project acres disturbed							
	307,994 s.f. residential	n/a	s.f. retail							
	414,000 s.f. conditioned area	n/a	s.f. other, specify:							
	8,900 s.f. other, specify:	Amenity								
	256,900 s.f. parking garage	625 spaces								
	n/a s.f. parking lot	7 spaces								
	7 am to	4 pm								
Construction Hours										
City	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Comments	Typical Equipment Type	HP	Load Factor
Demolition		Start Date:	End Date:	Total phase:			Overall Import/Export Volumes	OFFROAD Equipment Type	HP	Load Factor
	Concrete/Industrial Saws	81	0.73				<b>Demolition Volume</b>	Aerial Lifts	62	0.31
	Excavators	162	0.38				Square footage of buildings to be demolished	Air Compressors	78	0.48
	Rubber-Tired Dozers	285	0.4				(or total tons to be hauled)	Bore/Drill Rigs	205	0.5
	Tractors/Loaders/Backhoes	97	0.37				<u>    </u> square feet or	Cement and Mortar Mixers	9	0.56
							<u>    </u> Hauling volume (tons)	Concrete/Industrial Saws	81	0.73
Site Preparation		Start Date:	End Date:	Total phase:			Any pavement demolished and hauled? <u>    </u> tons <td>Cranes</td> <td>226</td> <td>0.29</td>	Cranes	226	0.29
	Scrapers	361	0.48	20				Crawler Tractors	208	0.43
3	Skid Steer Loaders	64	0.37	20				Crushing/Proc. Equipment	85	0.78
2	Graders	174	0.41	40						
2	Rubber-Tired Dozers	255	0.4	20				Dumpers/Tenders	16	0.38
1	Tractors/Loaders/Backhoes	97	0.37	20				Excavators	162	0.38
1	Tractors/Loaders/Backhoes	97	0.37	20				Forklifts	89	0.2
1	Skid Steer Loaders	64	0.37	20				Generator Sets	84	0.74
1	Sweepers	64	0.46	40				Graders	174	0.41
Grading / Excavation		Start Date:	End Date:	Total phase:			Soil Hauling Volume	Off-Highway Tractors	122	0.44
	Scrapers	361	0.48	40				Off-Highway Trucks	400	0.38
3	Excavators	162	0.38	40			Export volume = <u>19,498</u> cubic yards?	Other Construction Equipment	171	0.42
2	Graders	174	0.41	40			Import volume = <u>    </u> cubic yards?	Other General Industrial Equipment	150	0.54
1	Rubber-Tired Dozers	255	0.4	20				Other Material Handling Equipment	167	0.4
1	Tractors/Loaders/Backhoes	97	0.37	20				Pavers	125	0.42
2	Rollers	80	0.38	40				Paving Equipment	130	0.36
1	Skid Steer Loaders	64	0.37	20				Plate Compactors	8	0.43
1	Sweepers	64	0.46	40				Pressure Washers	13	0.2
Trenching		Start Date:	End Date:	Total phase:				Pumps	84	0.74
	Tractor/Loader/Backhoe	97	0.37	20				Rollers	80	0.38
1	Excavators	162	0.38	20				Rough Terrain Forklifts	100	0.4
2	Loaders	97	0.37	20				Rubber Tired Dozers	255	0.4
1	Rough Terrain Forklifts	100	0.4	20						
1	Skid Steer Loaders	64	0.37	20						
Building - Exterior		Start Date:	End Date:	Total phase:			<b>Cement Trucks? <u>    </u> Total Round-Trips</b>	Rubber Tired Loaders	199	0.36
	Cranes	226	0.29	100			Electric? (Y/N) <u>    </u> Otherwise assumed diesel	Scrapers	361	0.48
1	Forklifts	89	0.2	100			Liquid Propane (LPG)? (Y/N) <u>    </u> Otherwise Assumed diesel	Signal Boards	6	0.82
4	Generator Sets	84	0.74	100			Or temporary line power? (Y/N) <u>    </u>	Skid Steer Loaders	64	0.37
1	Tractors/Loaders/Backhoes	97	0.37	100			otherwise, assume diesel generator	Surfacing Equipment	253	0.3
3	Booms/Aerial Lifts	46	0.45	100				Sweepers/Scrubbers	64	0.46
4	Welders	62	0.31	100				Tractors/Loaders/Backhoes	97	0.37
3	Other Construction Equipment	171	0.42	100				Trainers	80	0.5
								Welders	46	0.45
Building - Interior/Architectural Coating		Start Date:	End Date:	Total phase:						
	Air Compressors	78	0.48	40						
2	Aerial Lift	62	0.31	100						
1	Cranes	226	0.29	50						
1	Forklifts	89	0.2	100						
Paving		Start Date:	End Date:	Total phase:			Asphalt? 600 cubic yards or <u>    </u> round trips?			
	Cement and Mortar Mixers	9	0.56	4						
1	Pavers	125	0.42	40						
1	Paving Equipment	130	0.36	40						
2	Rollers	80	0.38	40						
1	Tractors/Loaders/Backhoes	97	0.37	20						
1	Sweepers	64	0.46	40						

Equipment listed in this sheet is to provide an example of inputs  
It is assumed that water trucks would be used during grading  
Add or subtract phases and equipment, as appropriate  
Modify horsepower or load factor, as appropriate

Project Name: Gateway Crossings (Coleman/Brokaw) Phase 3									
Project Size									
432 Dwelling Units		n/a		total project acres disturbed					
378,924 s.f. residential		4,900 s.f. retail							
522,000 s.f. conditioned area		n/a		s.f. other, specify:					
7,400 s.f. other, specify:		Amenity							
311,800 s.f. parking garage		760 spaces							
n/a s.f. parking lot		6 spaces							
7 am to		4 pm							
Construction Hours									
Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Comments	Typical Equipment Type	Load Factor
Demolition		Start Date:	End Date:	Total phase:		Overall Import/Export Volumes			
Concrete/Industrial Saws		81	0.73			Demolition Volume			
Excavators		162	0.38			Square footage of buildings to be demolished (or total tons to be hauled)			
Rubber-Tired Dozers		255	0.4			? square feet or			
Tractors/Loaders/Backhoes		97	0.37			? Hauling volume (tons)			
Site Preparation		Start Date: 4/1/2020	End Date: 5/1/2020	Total phase: 20		Any pavement demolished and hauled? ? tons			
Scrapers		361	0.48						
Skid Steer Loaders		64	0.37						
Graders		174	0.41						
Rubber-Tired Dozers		255	0.4						
Tractors/Loaders/Backhoes		97	0.37						
Graders		174	0.41						
Excavators		162	0.38						
Graders		174	0.41						
Rubber-Tired Dozers		255	0.4						
Tractors/Loaders/Backhoes		97	0.37						
Skid Steer Loaders		64	0.37						
Sweepers		64	0.46						
Trenching		Start Date: 6/1/2020	End Date: 7/1/2020	Total phase: 40		Soil Hauling Volume			
Scrapers		361	0.48						
Excavators		162	0.38			Export volume = 20,919 cubic yards?			
Graders		174	0.41			Import volume = ? cubic yards?			
Rubber-Tired Dozers		255	0.4						
Tractors/Loaders/Backhoes		97	0.37						
Rollers		80	0.38						
Skid Steer Loaders		64	0.37						
Sweepers		64	0.46						
Trenching		Start Date: 6/1/2020	End Date: 7/1/2020	Total phase: 20		Cement Trucks? ? Total Round-Trips			
Tractor/Loader/Backhoe		97	0.37						
Excavators		162	0.38						
Loaders		97	0.37						
Rough Terrain Forklifts		100	0.4						
Skid Steer Loaders		64	0.37						
Building - Exterior		Start Date: 7/1/2020	End Date: 12/1/2020	Total phase: 100					
Cranes		226	0.29			Electric? (Y/N) _____ Otherwise assumed diesel			
Forklifts		89	0.2			Liquid Propane (LPG)? (Y/N) _____ Otherwise Assumed diesel			
Generator Sets		84	0.74			Or temporary line power? (Y/N) _____			
Tractors/Loaders/Backhoes		97	0.37			otherwise, assume diesel generator			
Welders		46	0.45						
Boom/Aerial Lifts		62	0.31						
Other Construction Equipment		171	0.42						
Building - Interior/Architectural Coating		Start Date: 11/1/2020	End Date: 4/1/2021	Total phase: 100					
Air Compressors		78	0.48						
Aerial Lift		62	0.31						
Cranes		226	0.29						
Forklifts		89	0.2						
Paving		Start Date: 1/1/2021	End Date: 3/1/2021	Total phase: 40		Asphalt? 800 cubic yards or _____ round trips?			
Cement and Mortar Mixers		9	0.56						
Pavers		125	0.42						
Paving Equipment		130	0.36						
Rollers		80	0.38						
Tractors/Loaders/Backhoes		97	0.37						
Sweepers		64	0.46						
Equipment listed in this sheet is to provide an example of inputs									
It is assumed that water trucks would be used during grading									
Add or subtract phases and equipment, as appropriate									
Modify horsepower or load factor, as appropriate									



Gateway Crossings (Coleman/Brokaw) Phase 2										
Project Name:	556 Dwelling Units	n/a	total project acres disturbed							
Project Size	407,089 s.f. residential ( net rentable)	n/a	s.f. retail							
	556,885 s.f. conditioned area	n/a	s.f. other, specify:							
	7,439 s.f. other, specify: amenity		905 spaces							
	357,109 s.f. parking garage		4 spaces parallel parking							
	n/a		6 pm							
Construction Hours										
Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Comments	Typical Equipment Type	Load Factor	
	<b>Demolition</b>			<b>Total phase:</b>			<b>Overall Import/Export Volumes</b>	<b>OFFROAD Equipment Type</b>	<b>HP</b>	<b>Load Factor</b>
	Concrete/Industrial Saws	Start Date: 8/1	0.73				<b>Demolition Volume</b>	Aerial Lifts	62	0.31
	Excavators	End Date: 16/2	0.38				Square footage of buildings to be demolished (or total tons to be hauled)	Air Compressors	78	0.48
	Rubber-Tired Dozers	255	0.4					Bore/Drill Rigs	205	0.5
	Tractors/Loaders/Backhoes	97	0.37					Cement and Mortar Mixers	9	0.56
								Concrete/Industrial Saws	81	0.73
	<b>Site Preparation</b>			<b>Total phase:</b>			<b>2 square feet or</b>	Cranes	226	0.29
		Start Date: 3/1/2022			20		<b>2 Hauling volume (tons)</b>	Crawler Tractors	208	0.43
		End Date: 4/1/2022					Any pavement demolished and hauled? <b>2 tons</b>	Crushing/Proc. Equipment	85	0.78
3	Scrapers	361	0.48	8	20	8				
1	Skid Steer Loaders	64	0.37	8	20	8				
2	Graders	174	0.41	8	20	8				
2	Rubber Tired Dozers	255	0.4	8	20	8				
1	Tractors/Loaders/Backhoes	97	0.37	8	20	8				
	<b>Grading / Excavation</b>			<b>Total phase:</b>			<b>Soil Hauling Volume</b>			
		Start Date: 4/1/2022			60					
		End Date: 7/1/2022					Export volume = <b>16,489</b> cubic yards? Import volume = <b>7</b> cubic yards?			
3	Scrapers	361	0.48	8	60	8				
2	Excavators	162	0.38	8	60	8				
2	Graders	174	0.41	8	60	8				
1	Rubber Tired Dozers	255	0.4	8	60	8				
1	Tractors/Loaders/Backhoes	97	0.37	8	60	8				
2	Rollers	80	0.38	8	60	8				
1	Skid Steer Loaders	64	0.37	8	60	8				
1	Sweepers	64	0.46	8	60	8				
	<b>Trenching</b>			<b>Total phase:</b>						
		Start Date: 5/1/2022			40					
		End Date: 7/1/2022								
1	Tractor/Loader/Backhoe	97	0.37	8	40	8				
2	Excavators	162	0.38	8	40	8				
2	Loaders	97	0.37	8	40	8				
1	Rough Terrain Forklifts	100	0.4	8	40	8				
1	Skid Steer Loaders	64	0.37	8	40	8				
	<b>Building - Exterior</b>			<b>Total phase:</b>			<b>Cement Trucks? 2, Total Round Trips</b>			
		Start Date: 6/1/2022			160					
		End Date: 2/1/2023					Electric? (Y/N) _____ Liquid Propane (LPG)? (Y/N) _____ Or temporary line power? (Y/N) _____ otherwise, assume diesel generator			
1	Cranes	226	0.29	8	120	6				
4	Forklifts	89	0.2	8	160	8				
1	Generator Sets	84	0.74	8	160	8				
1	Tractors/Loaders/Backhoes	97	0.37	8	160	8				
4	Welders	46	0.45	8	160	8				
3	Other Construction Equipment	62	0.31	8	160	8				
	<b>Building - Interior/Architectural Coating</b>			<b>Total phase:</b>						
		Start Date: 10/1/2022			140					
		End Date: 5/1/2023								
2	Air Compressors	78	0.48	8	60	3.4265714				
1	Aerial Lift	62	0.31	8	140	8				
1	Cranes	226	0.29	8	80	4.5714286				
1	Forklifts	89	0.2	8	140	8				
	<b>Paving</b>			<b>Total phase:</b>						
		Start Date: 2/1/2023			60					
		Start Date: 5/1/2023								
1	Cement and Mortar Mixers	9	0.56	8	40	5.3333333				
1	Pavers	125	0.42	8	60	8				
1	Paving Equipment	130	0.36	8	60	8				
2	Rollers	80	0.38	8	60	8				
1	Tractors/Loaders/Backhoes	97	0.37	8	40	5.3333333				
1	Sweepers	64	0.46	8	60	8				
Equipment listed in this sheet is to provide an example of inputs. It is assumed that water trucks would be used during grading.										
Add or subtract phases and equipment, as appropriate										
Modify horsepower or load factor, as appropriate										

Complete ALL Portions in Yellow

Asphalt? 800 cubic yards or \_\_\_\_ round trips?

Gateway Crossings (Coleman/Brokaw) Phase 5									
Project Name:	225 Hotel Room	n/a	total project acres disturbed						
Project Size	108,622 s.f. Room Area	5,200 s.f. retail ( food and beverage)							
	182,000 s.f. conditioned area	4,400 s.f. other, specify: fitness/spa, hotel bar							
	8,300 s.f. other, specify: meeting rooms, pre-function								
	142,500 s.f. parking garage	339 spaces							
	n/a	s.f. parking lot	spaces parallel parking						
	7 am to	4 pm							
Construction Hours									
City	Description	HP	Load Factor	Hours/day	Work Days	Avg. Hours per day	Comments	Typical Equipment Type	Load Factor
Demolition		Start Date:	End Date:	Total phase:			Overall Import/Export Volumes	OFFROAD Equipment Type	HP
	Concrete/Industrial Saws	81	0.73				Demolition Volume	Aerial Lifts	62
	Excavators	162	0.38				Square footage of buildings to be demolished (or total tons to be hauled)	Air Compressors	78
	Rubber-Tired Dozers	255	0.4				_____ square feet or _____ square feet or _____	Bare/Drill Rigs	205
	Tractors/Loaders/Backhoes	97	0.37				_____ square feet or _____	Cement and Mortar Mixers	9
							_____ square feet or _____	Concrete/Industrial Saws	81
Site Preparation		Start Date:	End Date:	Total phase:			Any pavement demolished and hauled? _____ tons		
	Scrapers	361	0.48		20			Crawler Tractors	208
3	Skid Steer Loaders	64	0.37		20	8		Crushing/Proc. Equipment	85
2	Graders	174	0.41		20	8			
2	Rubber Tired Dozers	255	0.4		20	8		Dumpers/Tenders	16
1	Tractors/Loaders/Backhoes	97	0.37		20	8		Excavators	162
								Forklifts	89
								Generator Sets	84
								Graders	174
Grading / Excavation		Start Date:	End Date:	Total phase:			Soil Hauling Volume		
	Scrapers	361	0.48		20	8		Off-Highway Tractors	122
3	Excavators	162	0.38		20	8	Export volume = <u>7,585</u> cubic yards?	Off-Highway Trucks	400
2	Graders	174	0.41		20	8	Import volume = _____ cubic yards?	Other Construction Equipment	171
								Other General Industrial Equipment	150
								Other Material Handling Equipment	167
1	Rubber Tired Dozers	255	0.4		20	8		Pavers	125
1	Tractors/Loaders/Backhoes	97	0.37		20	8		Paving Equipment	130
2	Rollers	80	0.38		20	8		Plate Compactors	8
1	Skid Steer Loaders	64	0.37		20	8		Pressure Washers	13
1	Sweepers	64	0.46		20	8		Pumps	80
Trenching		Start Date:	End Date:	Total phase:					
	Tractor/Loader/Backhoe	97	0.37		20	8		Rollers	80
1	Excavators	162	0.38		20	8		Rough Terrain Forklifts	100
2	Loaders	97	0.37		20	8		Rubber Tired Dozers	255
1	Rough Terrain Forklifts	100	0.4		20	8			
1	Skid Steer Loaders	64	0.37		20	8			
Building - Exterior		Start Date:	End Date:	Total phase:			Cement Trucks? _____ Total Round-Trips		
	Cranes	226	0.29		300	8	Electric? (Y/N) _____ Otherwise assumed diesel	Rubber Tired Loaders	199
1	Forklifts	89	0.2		300	8	Liquid Propane (LPG)? (Y/N) _____ Otherwise Assumed diesel	Scrapers	361
4	Generator Sets	84	0.74		300	8	Or temporary line power? (Y/N) _____	Signal Boards	6
1	Tractors/Loaders/Backhoes	97	0.37		300	8	otherwise, assume diesel generator	Skid Steer Loaders	64
4	Welders	46	0.45		300	8		Surfacing Equipment	233
3	Boom/Aerial Lifts	62	0.31		200	5.3333333		Sweepers/Strabbers	97
3	Other Construction Equipment	171	0.42		300	8		Tractors/Loaders/Backhoes	97
								Trenchers	80
								Welders	46
Building - Interior/Architectural Coating		Start Date:	End Date:	Total phase:					
	Air Compressors	78	0.48		60	2.4			
2	Aerial Lift	62	0.31		120	4.8			
1	Cranes	226	0.29		60	2.4			
1	Forklifts	89	0.2		120	4.8			
Paving		Start Date:	End Date:	Total phase:			Asphalt? 800 cubic yards or _____ round trips?		
	Cement and Mortar Mixers	9	0.56		20	2.6666667			
1	Pavers	125	0.42		60	8			
1	Paving Equipment	130	0.36		60	8			
2	Rollers	80	0.38		60	8			
1	Tractors/Loaders/Backhoes	97	0.37		20	2.6666667			
1	Sweepers	64	0.46		60	8			

Equipment listed in this sheet is to provide an example of inputs  
It is assumed that water trucks would be used during grading  
Add or subtract phases and equipment, as appropriate  
Modify horsepower or load factor, as appropriate

Gateway Crossings, Phase 1 , Mitigated Criteria Emissions - Santa Clara County, Annual

**Gateway Crossings, Phase 1 , Mitigated Criteria Emissions**  
**Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	485.00	Space	0.00	256,900.00	0
Parking Lot	4.00	Space	0.04	1,600.00	0
Apartments Mid Rise	261.00	Dwelling Unit	21.36	324,000.00	746
Strip Mall	5.30	1000sqft	0.00	5,300.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4	Operational Year	2020		

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	380	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - Current CO2 Emission Intensity Rate for SVP from Climate Action Plan,2020

Land Use - From Construction information for Phase 1

Construction Phase - Assumed additional phase: demolition

Off-road Equipment -

Off-road Equipment - Applicant provided information

Off-road Equipment - Applicant provided information

Off-road Equipment - Defaults used



tbiConstEquipMitigation	DPF	No Change	Level 3
tbiConstEquipMitigation	DPF	No Change	Level 3
tbiConstEquipMitigation	DPF	No Change	Level 3
tbiConstEquipMitigation	DPF	No Change	Level 3
tbiConstEquipMitigation	DPF	No Change	Level 3
tbiConstEquipMitigation	DPF	No Change	Level 3
tbiConstEquipMitigation	DPF	No Change	Level 3
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3



tblProjectCharacteristics	OperationalYear	2018	2020
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblVehicleTrips	ST_TR	6.39	5.83
tblVehicleTrips	ST_TR	42.04	28.95
tblVehicleTrips	SU_TR	5.86	5.35
tblVehicleTrips	SU_TR	20.43	14.07
tblVehicleTrips	WD_TR	6.65	6.07
tblVehicleTrips	WD_TR	44.32	30.52
tblWoodstoves	NumberCatalytic	5.22	0.00
tblWoodstoves	NumberNoncatalytic	5.22	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

## 2.0 Emissions Summary

### 2.1 Overall Construction Unmitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MT/yr																
2018	0.2983	3.8453	2.0089	5.0500e-003	0.5489	0.1457	0.6946	0.1790	0.1343	0.3134	0.0000	469.1549	469.1549	0.0993	0.0000	471.6376
2019	2.7635	3.3052	2.9597	6.0400e-003	0.1690	0.1613	0.3303	0.0455	0.1516	0.1971	0.0000	539.0598	539.0598	0.0915	0.0000	541.3475
<b>Maximum</b>	<b>2.7635</b>	<b>3.8453</b>	<b>2.9597</b>	<b>6.0400e-003</b>	<b>0.5489</b>	<b>0.1613</b>	<b>0.6946</b>	<b>0.1790</b>	<b>0.1516</b>	<b>0.3134</b>	<b>0.0000</b>	<b>539.0598</b>	<b>539.0598</b>	<b>0.0993</b>	<b>0.0000</b>	<b>541.3475</b>

### Mitigated Construction

Year	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2018	0.1047	2.2769	2.1200	5.0500e-003	0.2718	0.0136	0.2854	0.0498	0.0134	0.0633	0.0000	469.1545	469.1545	0.0993	0.0000	471.6373
2019	2.5416	2.4046	3.1120	6.0400e-003	0.1690	0.0209	0.1899	0.0455	0.0207	0.0662	0.0000	539.0594	539.0594	0.0915	0.0000	541.3471
<b>Maximum</b>	<b>2.5416</b>	<b>2.4046</b>	<b>3.1120</b>	<b>6.0400e-003</b>	<b>0.2718</b>	<b>0.0209</b>	<b>0.2854</b>	<b>0.0498</b>	<b>0.0207</b>	<b>0.0662</b>	<b>0.0000</b>	<b>539.0594</b>	<b>539.0594</b>	<b>0.0993</b>	<b>0.0000</b>	<b>541.3471</b>

Percent Reduction	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
13.57	34.54	-5.30	0.00	38.59	88.77	53.62	57.54	88.06	74.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Maximum Unmitigated ROG + NOx (tons/quarter)					Maximum Mitigated ROG + NOx (tons/quarter)				
	Start Date	End Date	SO2	NOx	ROG	Start Date	End Date	SO2	NOx	ROG
1	10-1-2018	12-31-2018		3.9506	2.2756					
2	1-1-2019	3-31-2019		1.9217	1.3595					
3	4-1-2019	6-30-2019		2.2685	1.8914					
4	7-1-2019	9-30-2019		1.8701	1.6905					
		Highest		3.9506	2.2756					

### 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	10/1/2018	10/26/2018	5	20	
2	Site Preparation	Site Preparation	10/1/2018	10/26/2018	5	20	
3	Grading	Grading	10/29/2018	12/21/2018	5	40	
4	Trenching	Trenching	12/1/2018	12/28/2018	5	20	
5	Building Construction	Building Construction	1/1/2019	5/20/2019	5	100	
6	Architectural Coating	Architectural Coating	5/1/2019	9/17/2019	5	100	
7	Paving	Paving	7/1/2019	8/23/2019	5	40	

Acres of Grading (Site Preparation Phase): 80



Acres of Grading (Grading Phase): 160

Acres of Paving: 0.04

Residential Indoor: 656,100; Residential Outdoor: 218,700; Non-Residential Indoor: 7,950; Non-Residential Outdoor: 2,650; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	3	8.00	367	0.48
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	3	8.00	367	0.48
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	2	8.00	158	0.38
Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Trenching	Skid Steer Loaders	1	8.00	65	0.37
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	3	8.00	63	0.31
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	4	8.00	89	0.20

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Other Construction Equipment	3	8.00	172	0.42
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Architectural Coating	Aerial Lifts	1	8.00	63	0.31
Architectural Coating	Air Compressors	2	3.20	78	0.48
Architectural Coating	Cranes	1	4.00	231	0.29
Architectural Coating	Forklifts	1	8.00	89	0.20
Paving	Cement and Mortar Mixers	1	4.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	4.00	64	0.46
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

### 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	6	15.00	0.00	1,241.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	13	33.00	0.00	2,943.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	17	298.00	71.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	5	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	100.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

### **3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Replace Ground Cover

Water Exposed Area  
 Reduce Vehicle Speed on Unpaved Roads  
 Clean Paved Roads

### 3.2 Demolition - 2018

#### Unmitigated Construction On-Site

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.1343	0.0000	0.1343	0.0203	0.0000	0.0203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0372	0.3832	0.2230	3.9000e-004		0.0194	0.0194	0.0181		0.0181	0.0000	35.1241	35.1241	9.6800e-003	0.0000	35.3660
<b>Total</b>	<b>0.0372</b>	<b>0.3832</b>	<b>0.2230</b>	<b>3.9000e-004</b>	<b>0.1343</b>	<b>0.0194</b>	<b>0.1537</b>	<b>0.0203</b>	<b>0.0181</b>	<b>0.0384</b>	<b>0.0000</b>	<b>35.1241</b>	<b>35.1241</b>	<b>9.6800e-003</b>	<b>0.0000</b>	<b>35.3660</b>

#### Unmitigated Construction Off-Site

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	5.9400e-003	0.2034	0.0396	5.0000e-004	0.0105	8.1000e-004	0.0113	2.8900e-003	7.8000e-004	3.6700e-003	0.0000	48.2932	48.2932	2.2800e-003	0.0000	48.3502
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.6000e-004	4.7300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0854	1.0854	3.0000e-005	0.0000	1.0862
<b>Total</b>	<b>6.5400e-003</b>	<b>0.2039</b>	<b>0.0443</b>	<b>5.1000e-004</b>	<b>0.0117</b>	<b>8.2000e-004</b>	<b>0.0125</b>	<b>3.2100e-003</b>	<b>7.9000e-004</b>	<b>3.9900e-003</b>	<b>0.0000</b>	<b>49.3786</b>	<b>49.3786</b>	<b>2.3100e-003</b>	<b>0.0000</b>	<b>49.4364</b>



Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.1629	0.0000	0.1629	0.0708	0.0000	0.0708	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0717	0.8579	0.4267	8.1000e-004	0.0361	0.0361	0.0361	0.0332	0.0332	0.0332	0.0000	73.9834	73.9834	0.0230	0.0000	74.5592
<b>Total</b>	<b>0.0717</b>	<b>0.8579</b>	<b>0.4267</b>	<b>8.1000e-004</b>	<b>0.1629</b>	<b>0.0361</b>	<b>0.1989</b>	<b>0.0708</b>	<b>0.0332</b>	<b>0.1040</b>	<b>0.0000</b>	<b>73.9834</b>	<b>73.9834</b>	<b>0.0230</b>	<b>0.0000</b>	<b>74.5592</b>

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	7.1000e-004	7.2500e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.6643	1.6643	5.0000e-005	0.0000	1.6655
<b>Total</b>	<b>9.3000e-004</b>	<b>7.1000e-004</b>	<b>7.2500e-003</b>	<b>2.0000e-005</b>	<b>1.8200e-003</b>	<b>1.0000e-005</b>	<b>1.8400e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>1.6643</b>	<b>1.6643</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>1.6655</b>

**Mitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.0733	0.0000	0.0733	0.0159	0.0000	0.0159	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.3888	0.4424	8.1000e-004	2.3500e-003	2.3500e-003	2.3500e-003	2.3500e-003	2.3500e-003	2.3500e-003	0.0000	73.9833	73.9833	0.0230	0.0000	74.5591

Total	0.0199	0.3888	0.4424	8.1000e-004	0.0733	2.3500e-003	0.0756	0.0159	2.3500e-003	0.0183	0.0000	73.9833	73.9833	0.0230	0.0000	74.5591
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**Mitigated Construction Off-Site**

Category	tons/yr															MIT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
Worker	9.3000e-004	7.1000e-004	7.2500e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.6643	1.6643	5.0000e-005	0.0000	1.6655				
<b>Total</b>	<b>9.3000e-004</b>	<b>7.1000e-004</b>	<b>7.2500e-003</b>	<b>2.0000e-005</b>	<b>1.8200e-003</b>	<b>1.0000e-005</b>	<b>1.8400e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>1.6643</b>	<b>1.6643</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>1.6655</b>				

**3.4 Grading - 2018**

**Unmitigated Construction On-Site**

Category	tons/yr															MIT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e				
Fugitive Dust					0.2066	0.0000	0.2066	0.0756	0.0000	0.0756	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
Off-Road	0.1482	1.7416	1.0147	1.8100e-003		0.0773	0.0773	0.0711	0.0711	0.0711	0.0000	165.4312	165.4312	0.0515	0.0000	166.7187				
<b>Total</b>	<b>0.1482</b>	<b>1.7416</b>	<b>1.0147</b>	<b>1.8100e-003</b>	<b>0.2066</b>	<b>0.0773</b>	<b>0.2839</b>	<b>0.0756</b>	<b>0.0711</b>	<b>0.1467</b>	<b>0.0000</b>	<b>165.4312</b>	<b>165.4312</b>	<b>0.0515</b>	<b>0.0000</b>	<b>166.7187</b>				

**Unmitigated Construction Off-Site**



Hauling	0.0141	0.4824	0.0938	1.1900e-003	0.0249	1.9300e-003	0.0269	6.8600e-003	1.8400e-003	8.7000e-003	0.0000	114.5260	114.5260	5.4100e-003	0.0000	114.6612
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6600e-003	2.0400e-003	0.0208	5.0000e-005	5.2300e-003	4.0000e-005	5.2700e-003	1.3900e-003	3.0000e-005	1.4200e-003	0.0000	4.7757	4.7757	1.4000e-004	0.0000	4.7793
<b>Total</b>	<b>0.0168</b>	<b>0.4844</b>	<b>0.1146</b>	<b>1.2400e-003</b>	<b>0.0302</b>	<b>1.9700e-003</b>	<b>0.0321</b>	<b>8.2500e-003</b>	<b>1.8700e-003</b>	<b>0.0101</b>	<b>0.0000</b>	<b>119.3018</b>	<b>119.3018</b>	<b>5.5500e-003</b>	<b>0.0000</b>	<b>119.4405</b>

### 3.5 Trenching - 2018

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.0163	0.1730	0.1726	2.5000e-004	0.0101	0.0101	0.0101	9.3300e-003	9.3300e-003	9.3300e-003	0.0000	22.9692	22.9692	7.1500e-003	0.0000	23.1480
<b>Total</b>	<b>0.0163</b>	<b>0.1730</b>	<b>0.1726</b>	<b>2.5000e-004</b>	<b>0.0101</b>	<b>0.0101</b>	<b>0.0101</b>	<b>9.3300e-003</b>	<b>9.3300e-003</b>	<b>9.3300e-003</b>	<b>0.0000</b>	<b>22.9692</b>	<b>22.9692</b>	<b>7.1500e-003</b>	<b>0.0000</b>	<b>23.1480</b>

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2000e-004	5.6000e-004	5.6800e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3025	1.3025	4.0000e-005	0.0000	1.3035
<b>Total</b>	<b>7.2000e-004</b>	<b>5.6000e-004</b>	<b>5.6800e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>1.0000e-005</b>	<b>1.4400e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.3025</b>	<b>1.3025</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.3035</b>



**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Off-Road	6.1800e-003	0.1321	0.1904	2.5000e-004	1.2300e-003	1.2300e-003	1.2300e-003	1.2300e-003	1.2300e-003	1.2300e-003	0.0000	22.9692	22.9692	7.1500e-003	0.0000	23.1479
<b>Total</b>	<b>6.1800e-003</b>	<b>0.1321</b>	<b>0.1904</b>	<b>2.5000e-004</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>0.0000</b>	<b>22.9692</b>	<b>22.9692</b>	<b>7.1500e-003</b>	<b>0.0000</b>	<b>23.1479</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2000e-004	5.6000e-004	5.6800e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3025	1.3025	4.0000e-005	0.0000	1.3035
<b>Total</b>	<b>7.2000e-004</b>	<b>5.6000e-004</b>	<b>5.6800e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>1.0000e-005</b>	<b>1.4400e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.3025</b>	<b>1.3025</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.3035</b>

**3.6 Building Construction - 2019**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.2529	2.1660	1.8024	2.7700e-003	0.1210	0.1210	0.1210	0.1138	0.1138	0.1138	0.0000	239.1387	239.1387	0.0629	0.0000	240.7110
<b>Total</b>	<b>0.2529</b>	<b>2.1660</b>	<b>1.8024</b>	<b>2.7700e-003</b>	<b>0.1210</b>	<b>0.1210</b>	<b>0.1210</b>	<b>0.1138</b>	<b>0.1138</b>	<b>0.1138</b>	<b>0.0000</b>	<b>239.1387</b>	<b>239.1387</b>	<b>0.0629</b>	<b>0.0000</b>	<b>240.7110</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0174	0.4483	0.1203	9.7000e-004	0.0234	3.2200e-003	0.0266	6.7500e-003	3.0800e-003	9.8300e-003	0.0000	93.3834	93.3834	4.6300e-003	0.0000	93.4992
Worker	0.0541	0.0403	0.4162	1.1600e-003	0.1182	7.8000e-004	0.1190	0.0314	7.2000e-004	0.0322	0.0000	104.6104	104.6104	2.8500e-003	0.0000	104.6816
<b>Total</b>	<b>0.0715</b>	<b>0.4886</b>	<b>0.5366</b>	<b>2.1300e-003</b>	<b>0.1415</b>	<b>4.0000e-003</b>	<b>0.1455</b>	<b>0.0382</b>	<b>3.8000e-003</b>	<b>0.0420</b>	<b>0.0000</b>	<b>197.9938</b>	<b>197.9938</b>	<b>7.4800e-003</b>	<b>0.0000</b>	<b>198.1808</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.0753	1.4690	1.9035	2.7700e-003	0.0128	0.0128	0.0128	0.0128	0.0128	0.0128	0.0000	239.1384	239.1384	0.0629	0.0000	240.7107

Total	0.0753	1.4690	1.9035	2.7700e-003	0.0128	0.0128	0.0128	0.0128	0.0128	0.0000	239.1384	239.1384	0.0629	0.0000	240.7107
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**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0174	0.4483	0.1203	9.7000e-004	0.0234	3.2200e-003	0.0266	6.7500e-003	3.0800e-003	9.8300e-003	0.0000	93.3834	93.3834	4.6300e-003	0.0000	93.4992
Worker	0.0541	0.0403	0.4162	1.1600e-003	0.1182	7.8000e-004	0.1190	0.0314	7.2000e-004	0.0322	0.0000	104.6104	104.6104	2.8500e-003	0.0000	104.6816
<b>Total</b>	<b>0.0715</b>	<b>0.4886</b>	<b>0.5366</b>	<b>2.1300e-003</b>	<b>0.1415</b>	<b>4.0000e-003</b>	<b>0.1455</b>	<b>0.0382</b>	<b>3.8000e-003</b>	<b>0.0420</b>	<b>0.0000</b>	<b>197.9938</b>	<b>197.9938</b>	<b>7.4800e-003</b>	<b>0.0000</b>	<b>198.1808</b>

**3.7 Architectural Coating - 2019**  
**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	2.3623					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0368	0.3535	0.2699	4.6000e-004		0.0196	0.0196		0.0186	0.0186	0.0000	40.9762	40.9762	9.8100e-003	0.0000	41.2214
<b>Total</b>	<b>2.3992</b>	<b>0.3535</b>	<b>0.2699</b>	<b>4.6000e-004</b>		<b>0.0196</b>	<b>0.0196</b>		<b>0.0186</b>	<b>0.0186</b>	<b>0.0000</b>	<b>40.9762</b>	<b>40.9762</b>	<b>9.8100e-003</b>	<b>0.0000</b>	<b>41.2214</b>

**Unmitigated Construction Off-Site**



Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0109	8.1100e-003	0.0838	2.3000e-004	0.0238	1.6000e-004	0.0240	6.3300e-003	1.4000e-004	6.4700e-003	21.0625	5.7000e-004	21.0625	0.0000	21.0625	0.0000	21.0625	0.0000	0.0000	0.0000	5.7000e-004	0.0000	0.0000	21.0768
<b>Total</b>	<b>0.0109</b>	<b>8.1100e-003</b>	<b>0.0838</b>	<b>2.3000e-004</b>	<b>0.0238</b>	<b>1.6000e-004</b>	<b>0.0240</b>	<b>6.3300e-003</b>	<b>1.4000e-004</b>	<b>6.4700e-003</b>	<b>21.0625</b>	<b>5.7000e-004</b>	<b>21.0625</b>	<b>0.0000</b>	<b>21.0625</b>	<b>0.0000</b>	<b>21.0625</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>5.7000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>21.0768</b>

### 3.8 Paving - 2019

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Off-Road	0.0272	0.2725	0.2539	3.8000e-004	0.0165	0.0165	0.0165	0.0152	0.0152	0.0152	0.0000	33.5079	33.5079	0.0105	0.0000	33.7705
Paving	5.0000e-005				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0272</b>	<b>0.2725</b>	<b>0.2539</b>	<b>3.8000e-004</b>	<b>0.0165</b>	<b>0.0165</b>	<b>0.0165</b>	<b>0.0152</b>	<b>0.0152</b>	<b>0.0152</b>	<b>0.0000</b>	<b>33.5079</b>	<b>33.5079</b>	<b>0.0105</b>	<b>0.0000</b>	<b>33.7705</b>
MT/yr																

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Hauling	4.5000e-004	0.0156	3.0700e-003	4.0000e-005	8.5000e-004	6.0000e-005	9.1000e-004	2.3000e-004	6.0000e-005	2.9000e-004	0.0000	3.8532	3.8532	1.8000e-004	0.0000	3.8577
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3100e-003	9.7000e-004	0.0101	3.0000e-005	2.8600e-003	2.0000e-005	2.8700e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.5275	2.5275	7.0000e-005	0.0000	2.5292
<b>Total</b>	<b>1.7600e-003</b>	<b>0.0165</b>	<b>0.0131</b>	<b>7.0000e-005</b>	<b>3.7100e-003</b>	<b>8.0000e-005</b>	<b>3.7800e-003</b>	<b>9.9000e-004</b>	<b>8.0000e-005</b>	<b>1.0700e-003</b>	<b>0.0000</b>	<b>6.3807</b>	<b>6.3807</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>6.3870</b>
MT/yr																

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Off-Road	9.0400e-003	0.1913	0.2787	3.8000e-004	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	0.0000	33.5079	33.5079	0.0105	0.0000	33.7705
Paving	5.0000e-005				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>9.0900e-003</b>	<b>0.1913</b>	<b>0.2787</b>	<b>3.8000e-004</b>	<b>1.7400e-003</b>	<b>1.7400e-003</b>	<b>1.7400e-003</b>	<b>1.7400e-003</b>	<b>1.7400e-003</b>	<b>1.7400e-003</b>	<b>0.0000</b>	<b>33.5079</b>	<b>33.5079</b>	<b>0.0105</b>	<b>0.0000</b>	<b>33.7705</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	4.5000e-004	0.0156	3.0700e-003	4.0000e-005	8.5000e-004	6.0000e-005	9.1000e-004	2.3000e-004	6.0000e-005	2.9000e-004	0.0000	3.8532	3.8532	1.8000e-004	0.0000	3.8577
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3100e-003	9.7000e-004	0.0101	3.0000e-005	2.8600e-003	2.0000e-005	2.8700e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.5275	2.5275	7.0000e-005	0.0000	2.5292
<b>Total</b>	<b>1.7600e-003</b>	<b>0.0165</b>	<b>0.0131</b>	<b>7.0000e-005</b>	<b>3.7100e-003</b>	<b>8.0000e-005</b>	<b>3.7800e-003</b>	<b>9.9000e-004</b>	<b>8.0000e-005</b>	<b>1.0700e-003</b>	<b>0.0000</b>	<b>6.3807</b>	<b>6.3807</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>6.3870</b>

Gateway Crossings Phase 2, Criteria and Operational - Santa Clara County, Annual

**Gateway Crossings Phase 2, Criteria and Operational**  
**Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	625.00	Space	0.00	256,900.00	0
Parking Lot	7.00	Space	0.06	2,800.00	0
Apartments Mid Rise	332.00	Dwelling Unit	21.34	414,000.00	950

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2021

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	380	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - Utility company is silicon valley power-CO2 factor from climate action plan 2020

Land Use - Applicant provided land use sizes

Construction Phase - Applicant provided construction schedule

Off-road Equipment - Applicant provided construction information

Off-road Equipment - Applicant provided construction information

Off-road Equipment - Applicant provided information

Off-road Equipment - Applicant provided construction information









tbOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tbOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tbOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tbOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tbOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tbOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tbOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tbOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tbOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tbOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tbOffRoadEquipment	UsageHours	6.00	3.20
tbOffRoadEquipment	UsageHours	7.00	8.00
tbOffRoadEquipment	UsageHours	7.00	8.00
tbProjectCharacteristics	CO2IntensityFactor	641.35	380
tbProjectCharacteristics	OperationalYear	2018	2021
tbTripsAndVMT	HaulingTripNumber	0.00	100.00
tbVehicleTrips	ST_TR	6.39	5.83
tbVehicleTrips	SU_TR	5.86	5.35
tbVehicleTrips	WD_TR	6.65	6.07
tbWoodstoves	NumberCatalytic	6.64	0.00
tbWoodstoves	NumberNoncatalytic	6.64	0.00
tbWoodstoves	WoodstoveWoodMass	582.40	0.00

## 2.0 Emissions Summary

### 2.1 Overall Construction Unmitigated Construction

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Year	tons/yr										MT/yr				
2019	0.4760	4.8742	3.3837	7.6600e-003	0.5162	0.2035	0.7198	0.1860	0.1892	0.3752	0.0000	693.4137	0.1376	0.0000	696.8531
2020	3.1261	1.2963	1.2665	2.6000e-003	0.0773	0.0637	0.1410	0.0207	0.0598	0.0805	0.0000	230.3285	0.0403	0.0000	231.3370
<b>Maximum</b>	<b>3.1261</b>	<b>4.8742</b>	<b>3.3837</b>	<b>7.6600e-003</b>	<b>0.5162</b>	<b>0.2035</b>	<b>0.7198</b>	<b>0.1860</b>	<b>0.1892</b>	<b>0.3752</b>	<b>0.0000</b>	<b>693.4137</b>	<b>0.1376</b>	<b>0.0000</b>	<b>696.8531</b>

### Mitigated Construction

Year	ROG	NOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
2019	0.1990	3.2316	3.6220	7.6600e-003	0.3131	0.0234	0.3366	0.0726	0.0232	0.0958	0.0000	693.4132	693.4132	0.1376	0.0000	696.8526
2020	3.0430	0.9903	1.3584	2.6000e-003	0.0773	8.5100e-003	0.0858	0.0207	8.4500e-003	0.0292	0.0000	230.3283	230.3283	0.0403	0.0000	231.3369
<b>Maximum</b>	<b>3.0430</b>	<b>3.2316</b>	<b>3.6220</b>	<b>7.6600e-003</b>	<b>0.3131</b>	<b>0.0234</b>	<b>0.3366</b>	<b>0.0726</b>	<b>0.0232</b>	<b>0.0958</b>	<b>0.0000</b>	<b>693.4132</b>	<b>693.4132</b>	<b>0.1376</b>	<b>0.0000</b>	<b>696.8526</b>

Percent Reduction	ROG	NOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
10.00	10.00	31.58	-7.10	0.00	34.22	88.05	50.93	54.85	87.29	72.57	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	7-1-2019	9-30-2019	3.1765	1.9000
2	10-1-2019	12-31-2019	2.0061	1.4314
3	1-1-2020	3-31-2020	2.1473	1.9128
4	4-1-2020	6-30-2020	2.2065	2.0594
		Highest	3.1765	2.0594

### 3.0 Construction Detail

**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/11/2019	7/26/2019	5	20	
2	Grading	Grading	7/29/2019	9/20/2019	5	40	
3	Trenching	Trenching	9/2/2019	9/27/2019	5	20	
4	Building Construction	Building Construction	9/23/2019	2/7/2020	5	100	
5	Architectural Coating	Architectural Coating	2/3/2020	6/19/2020	5	100	
6	Paving	Paving	4/11/2020	5/26/2020	5	40	

**Acres of Grading (Site Preparation Phase): 80**

**Acres of Grading (Grading Phase): 160**

**Acres of Paving: 0.06**

**Residential Indoor: 838,350; Residential Outdoor: 279,450; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	3	8.00	367	0.48
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	3	8.00	367	0.48
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	2	8.00	158	0.38

Trenching		Rough Terrain Forklifts	1	8.00	100	0.40
Trenching		Skid Steer Loaders	1	8.00	65	0.37
Trenching		Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching		Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction		Aerial Lifts	3	8.00	63	0.31
Building Construction		Cranes	1	8.00	231	0.29
Building Construction		Forklifts	4	8.00	89	0.20
Building Construction		Generator Sets	1	8.00	84	0.74
Building Construction		Other Construction Equipment	3	8.00	172	0.42
Building Construction		Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction		Welders	4	8.00	46	0.45
Architectural Coating		Aerial Lifts	1	8.00	63	0.31
Architectural Coating		Air Compressors	2	3.20	78	0.48
Architectural Coating		Cranes	1	4.00	231	0.29
Architectural Coating		Forklifts	1	8.00	89	0.20
Paving		Cement and Mortar Mixers	1	4.00	9	0.56
Paving		Pavers	1	8.00	130	0.42
Paving		Paving Equipment	1	8.00	132	0.36
Paving		Rollers	2	8.00	80	0.38
Paving		Sweepers/Scrubbers	1	8.00	64	0.46
Paving		Tractors/Loaders/Backhoes	1	4.00	97	0.37

### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	13	33.00	0.00	2,437.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	17	348.00	78.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	5	70.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT



Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	8.4000e-004	6.2000e-004	6.4300e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	1.6148	1.6148	4.0000e-005	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	1.6159
<b>Total</b>	<b>8.4000e-004</b>	<b>6.2000e-004</b>	<b>6.4300e-003</b>	<b>2.0000e-005</b>	<b>1.8200e-003</b>	<b>1.0000e-005</b>	<b>1.8400e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>1.6148</b>	<b>1.6148</b>	<b>4.0000e-005</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.6159</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Fugitive Dust					0.0733	0.0000	0.0733	0.0159	0.0000	0.0159	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.3888	0.4424	8.1000e-004	2.3500e-003	2.3500e-003	2.3500e-003	2.3500e-003	2.3500e-003	2.3500e-003	0.0000	72.7354	72.7354	0.0230	0.0000	73.3107
<b>Total</b>	<b>0.0199</b>	<b>0.3888</b>	<b>0.4424</b>	<b>8.1000e-004</b>	<b>0.0733</b>	<b>2.3500e-003</b>	<b>0.0756</b>	<b>0.0159</b>	<b>2.3500e-003</b>	<b>0.0183</b>	<b>0.0000</b>	<b>72.7354</b>	<b>72.7354</b>	<b>0.0230</b>	<b>0.0000</b>	<b>73.3107</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	6.2000e-004	6.4300e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.6148	1.6148	4.0000e-005	4.0000e-005	1.6159
<b>Total</b>	<b>8.4000e-004</b>	<b>6.2000e-004</b>	<b>6.4300e-003</b>	<b>2.0000e-005</b>	<b>1.8200e-003</b>	<b>1.0000e-005</b>	<b>1.8400e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>1.6148</b>	<b>1.6148</b>	<b>4.0000e-005</b>	<b>4.0000e-005</b>	<b>1.6159</b>





Category	tons/yr										MIT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.0929	0.0000	0.0929	0.0170	0.0000	0.0170	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0445	0.8822	1.0687	1.8100e-003	5.8700e-003	5.8700e-003	5.8700e-003	5.8700e-003	5.8700e-003	5.8700e-003	0.0000	162.6680	162.6680	0.0515	0.0000	163.9546
<b>Total</b>	<b>0.0445</b>	<b>0.8822</b>	<b>1.0687</b>	<b>1.8100e-003</b>	<b>0.0929</b>	<b>5.8700e-003</b>	<b>0.0987</b>	<b>0.0170</b>	<b>5.8700e-003</b>	<b>0.0229</b>	<b>0.0000</b>	<b>162.6680</b>	<b>162.6680</b>	<b>0.0515</b>	<b>0.0000</b>	<b>163.9546</b>

### Mitigated Construction Off-Site

Category	tons/yr										MIT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0111	0.3794	0.0749	9.7000e-004	0.0207	1.4600e-003	0.0221	5.6800e-003	1.3900e-003	7.0700e-003	0.0000	93.9031	93.9031	4.4000e-003	0.0000	94.0131
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-003	1.7800e-003	0.0184	5.0000e-005	5.2300e-003	3.0000e-005	5.2700e-003	1.3900e-003	3.0000e-005	1.4200e-003	0.0000	4.6338	4.6338	1.3000e-004	0.0000	4.6369
<b>Total</b>	<b>0.0135</b>	<b>0.3812</b>	<b>0.0934</b>	<b>1.0200e-003</b>	<b>0.0259</b>	<b>1.4900e-003</b>	<b>0.0274</b>	<b>7.0700e-003</b>	<b>1.4200e-003</b>	<b>8.4900e-003</b>	<b>0.0000</b>	<b>98.5368</b>	<b>98.5368</b>	<b>4.5300e-003</b>	<b>0.0000</b>	<b>98.6500</b>

### 3.4 Trenching - 2019

#### Unmitigated Construction On-Site

Category	tons/yr										MIT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0145	0.1535	0.1712	2.5000e-004	8.6100e-003	8.6100e-003	8.6100e-003	7.9200e-003	7.9200e-003	7.9200e-003	0.0000	22.5930	22.5930	7.1500e-003	0.0000	22.7717
<b>Total</b>	<b>0.0145</b>	<b>0.1535</b>	<b>0.1712</b>	<b>2.5000e-004</b>	<b>8.6100e-003</b>	<b>8.6100e-003</b>	<b>8.6100e-003</b>	<b>7.9200e-003</b>	<b>7.9200e-003</b>	<b>7.9200e-003</b>	<b>0.0000</b>	<b>22.5930</b>	<b>22.5930</b>	<b>7.1500e-003</b>	<b>0.0000</b>	<b>22.7717</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5000e-004	4.9000e-004	5.0300e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2638	1.2638	3.0000e-005	0.0000	1.2646
<b>Total</b>	<b>6.5000e-004</b>	<b>4.9000e-004</b>	<b>5.0300e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>1.0000e-005</b>	<b>1.4400e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.2638</b>	<b>1.2638</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.2646</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																
Off-Road	6.1800e-003	0.1321	0.1904	2.5000e-004	1.2300e-003	1.2300e-003	1.2300e-003	1.2300e-003	1.2300e-003	1.2300e-003	0.0000	22.5930	22.5930	7.1500e-003	0.0000	22.7717
<b>Total</b>	<b>6.1800e-003</b>	<b>0.1321</b>	<b>0.1904</b>	<b>2.5000e-004</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>0.0000</b>	<b>22.5930</b>	<b>22.5930</b>	<b>7.1500e-003</b>	<b>0.0000</b>	<b>22.7717</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5000e-004	4.9000e-004	5.0300e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2638	1.2638	3.0000e-005	0.0000	1.2646
<b>Total</b>	<b>6.5000e-004</b>	<b>4.9000e-004</b>	<b>5.0300e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>1.0000e-005</b>	<b>1.4400e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.2638</b>	<b>1.2638</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.2646</b>

### 3.5 Building Construction - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																
Off-Road	0.1821	1.5595	1.2978	1.9900e-003	0.0871	0.0871	0.0871	0.0820	0.0820	0.0820	0.0000	172.1798	172.1798	0.0453	0.0000	173.3119
<b>Total</b>	<b>0.1821</b>	<b>1.5595</b>	<b>1.2978</b>	<b>1.9900e-003</b>	<b>0.0871</b>	<b>0.0871</b>	<b>0.0871</b>	<b>0.0820</b>	<b>0.0820</b>	<b>0.0820</b>	<b>0.0000</b>	<b>172.1798</b>	<b>172.1798</b>	<b>0.0453</b>	<b>0.0000</b>	<b>173.3119</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0138	0.3546	0.0952	7.7000e-004	0.0185	2.5500e-003	0.0210	5.3400e-003	2.4400e-003	7.7800e-003	73.8650	73.8650	3.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	73.9566
Worker	0.0455	0.0339	0.3500	9.7000e-004	0.0994	6.6000e-004	0.1000	0.0264	6.0000e-004	0.0270	87.9570	87.9570	2.3900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	88.0169
<b>Total</b>	<b>0.0593</b>	<b>0.3885</b>	<b>0.4452</b>	<b>1.7400e-003</b>	<b>0.1178</b>	<b>3.2100e-003</b>	<b>0.1210</b>	<b>0.0318</b>	<b>3.0400e-003</b>	<b>0.0348</b>	<b>161.8220</b>	<b>161.8220</b>	<b>6.0500e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>161.9734</b>

### Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.0542	1.0577	1.3705	1.9900e-003	9.2500e-003	9.2500e-003	9.2500e-003	9.2500e-003	9.2500e-003	9.2500e-003	0.0000	172.1796	172.1796	0.0453	0.0000	173.3117
<b>Total</b>	<b>0.0542</b>	<b>1.0577</b>	<b>1.3705</b>	<b>1.9900e-003</b>	<b>9.2500e-003</b>	<b>9.2500e-003</b>	<b>9.2500e-003</b>	<b>9.2500e-003</b>	<b>9.2500e-003</b>	<b>9.2500e-003</b>	<b>0.0000</b>	<b>172.1796</b>	<b>172.1796</b>	<b>0.0453</b>	<b>0.0000</b>	<b>173.3117</b>

### Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0138	0.3546	0.0952	7.7000e-004	0.0185	2.5500e-003	0.0210	5.3400e-003	2.4400e-003	7.7800e-003	0.0000	73.8650	73.8650	3.6600e-003	0.0000	73.9566
Worker	0.0455	0.0339	0.3500	9.7000e-004	0.0994	6.6000e-004	0.1000	0.0264	6.0000e-004	0.0270	87.9570	87.9570	2.3900e-003	0.0000	0.0000	88.0169
<b>Total</b>	<b>0.0593</b>	<b>0.3885</b>	<b>0.4452</b>	<b>1.7400e-003</b>	<b>0.1178</b>	<b>3.2100e-003</b>	<b>0.1210</b>	<b>0.0318</b>	<b>3.0400e-003</b>	<b>0.0348</b>	<b>161.8220</b>	<b>161.8220</b>	<b>6.0500e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>161.9734</b>

**3.5 Building Construction - 2020**  
**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Off-Road	0.0645	0.5614	0.4975	7.8000e-004		0.0302	0.0302		0.0284	0.0284	0.0000	65.9021	65.9021	0.0174	0.0000	66.3358
<b>Total</b>	<b>0.0645</b>	<b>0.5614</b>	<b>0.4975</b>	<b>7.8000e-004</b>		<b>0.0302</b>	<b>0.0302</b>		<b>0.0284</b>	<b>0.0284</b>	<b>0.0000</b>	<b>65.9021</b>	<b>65.9021</b>	<b>0.0174</b>	<b>0.0000</b>	<b>66.3358</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3300e-003	0.1243	0.0331	3.0000e-004	7.1800e-003	6.2000e-004	7.8000e-003	2.0800e-003	5.9000e-004	2.6700e-003	0.0000	28.5496	28.5496	1.3100e-003	0.0000	28.5823
Worker	0.0162	0.0116	0.1219	3.7000e-004	0.0386	2.5000e-004	0.0389	0.0103	2.3000e-004	0.0105	0.0000	33.1369	33.1369	8.1000e-004	0.0000	33.1572
<b>Total</b>	<b>0.0205</b>	<b>0.1360</b>	<b>0.1551</b>	<b>6.7000e-004</b>	<b>0.0458</b>	<b>8.7000e-004</b>	<b>0.0467</b>	<b>0.0124</b>	<b>8.2000e-004</b>	<b>0.0132</b>	<b>0.0000</b>	<b>61.6864</b>	<b>61.6864</b>	<b>2.1200e-003</b>	<b>0.0000</b>	<b>61.7395</b>

**Mitigated Construction On-Site**



Off-Road	0.0334	0.3217	0.2643	4.6000e-004	0.0170	0.0170	0.0161	0.0161	0.0000	40.3814	40.3814	9.7100e-003	0.0000	40.6241
<b>Total</b>	<b>3.0019</b>	<b>0.3217</b>	<b>0.2643</b>	<b>4.6000e-004</b>	<b>0.0170</b>	<b>0.0170</b>	<b>0.0161</b>	<b>0.0161</b>	<b>0.0000</b>	<b>40.3814</b>	<b>40.3814</b>	<b>9.7100e-003</b>	<b>0.0000</b>	<b>40.6241</b>

**Unmitigated Construction Off-Site**

Category	tons/yr													MIT/yr			
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	0.0116	8.3500e-003	0.0876	2.6000e-004	0.0278	1.8000e-004	0.0279	7.3800e-003	1.7000e-004	7.5500e-003	0.0000	23.8052	23.8052	5.8000e-004	0.0000	23.8198	
<b>Total</b>	<b>0.0116</b>	<b>8.3500e-003</b>	<b>0.0876</b>	<b>2.6000e-004</b>	<b>0.0278</b>	<b>1.8000e-004</b>	<b>0.0279</b>	<b>7.3800e-003</b>	<b>1.7000e-004</b>	<b>7.5500e-003</b>	<b>0.0000</b>	<b>23.8052</b>	<b>23.8052</b>	<b>5.8000e-004</b>	<b>0.0000</b>	<b>23.8198</b>	

**Mitigated Construction On-Site**

Category	tons/yr													MIT/yr			
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Archit. Coating	2.9685					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Off-Road	0.0107	0.2311	0.2963	4.6000e-004	2.1000e-003	2.1000e-003	2.1000e-003	2.1000e-003	2.1000e-003	2.1000e-003	0.0000	40.3813	40.3813	9.7100e-003	0.0000	40.6241	
<b>Total</b>	<b>2.9791</b>	<b>0.2311</b>	<b>0.2963</b>	<b>4.6000e-004</b>	<b>2.1000e-003</b>	<b>2.1000e-003</b>	<b>2.1000e-003</b>	<b>2.1000e-003</b>	<b>2.1000e-003</b>	<b>2.1000e-003</b>	<b>0.0000</b>	<b>40.3813</b>	<b>40.3813</b>	<b>9.7100e-003</b>	<b>0.0000</b>	<b>40.6241</b>	

**Mitigated Construction Off-Site**





Hauling	4.2000e-004	0.0145	2.9700e-003	4.0000e-005	8.5000e-004	5.0000e-005	8.9000e-004	2.3000e-004	5.0000e-005	2.8000e-004	0.0000	3.8135	3.8135	1.7000e-004	0.0000	3.8179
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	8.6000e-004	9.0100e-003	3.0000e-005	2.8600e-003	2.0000e-005	2.8700e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.4485	2.4485	6.0000e-005	0.0000	2.4500
<b>Total</b>	<b>1.6200e-003</b>	<b>0.0154</b>	<b>0.0120</b>	<b>7.0000e-005</b>	<b>3.7100e-003</b>	<b>7.0000e-005</b>	<b>3.7600e-003</b>	<b>9.9000e-004</b>	<b>7.0000e-005</b>	<b>1.0600e-003</b>	<b>0.0000</b>	<b>6.2621</b>	<b>6.2621</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>6.2679</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Off-Road	8.9000e-003	0.1881	0.2745	3.7000e-004	1.7000e-003	1.7000e-003	1.7000e-003	1.7000e-003	1.7000e-003	1.7000e-003	0.0000	32.2912	32.2912	0.0103	0.0000	32.5498
Paving	8.0000e-005				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>8.9800e-003</b>	<b>0.1881</b>	<b>0.2745</b>	<b>3.7000e-004</b>	<b>1.7000e-003</b>	<b>1.7000e-003</b>	<b>1.7000e-003</b>	<b>1.7000e-003</b>	<b>1.7000e-003</b>	<b>1.7000e-003</b>	<b>0.0000</b>	<b>32.2912</b>	<b>32.2912</b>	<b>0.0103</b>	<b>0.0000</b>	<b>32.5498</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	4.2000e-004	0.0145	2.9700e-003	4.0000e-005	8.5000e-004	5.0000e-005	8.9000e-004	2.3000e-004	5.0000e-005	2.8000e-004	0.0000	3.8135	3.8135	1.7000e-004	0.0000	3.8179
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	8.6000e-004	9.0100e-003	3.0000e-005	2.8600e-003	2.0000e-005	2.8700e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.4485	2.4485	6.0000e-005	0.0000	2.4500
<b>Total</b>	<b>1.6200e-003</b>	<b>0.0154</b>	<b>0.0120</b>	<b>7.0000e-005</b>	<b>3.7100e-003</b>	<b>7.0000e-005</b>	<b>3.7600e-003</b>	<b>9.9000e-004</b>	<b>7.0000e-005</b>	<b>1.0600e-003</b>	<b>0.0000</b>	<b>6.2621</b>	<b>6.2621</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>6.2679</b>

Phase 3, Mitigated Criteria Emissions - Santa Clara County, Annual

**Phase 3, Mitigated Criteria Emissions**  
**Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	760.00	Space	0.00	311,800.00	0
Parking Lot	6.00	Space	0.05	2,400.00	0
Apartments Mid Rise	432.00	Dwelling Unit	21.35	522,000.00	1236
Strip Mall	4.90	1000sqft	0.00	4,900.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2022

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	380	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - PG&E used to represent SVP. Current CO2 emission factor from Santa Clara CLimate Action Plan 2020

Land Use - Applicant provided information on construction spreadsheet

Construction Phase - Applicant provided construction schedule

Off-road Equipment -

Off-road Equipment - Applicant provided information

Off-road Equipment - Applicant provided information





tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiConstEquipMitigation	Tier	No Change	Tier 3
tbiFireplaces	FireplaceWoodMass	228.80	0.00
tbiFireplaces	NumberGas	64.80	432.00
tbiFireplaces	NumberNoFireplace	17.28	0.00
tbiFireplaces	NumberWood	73.44	0.00
tbiGrading	MaterialExported	0.00	20,919.00
tbiLandUse	BuildingSpaceSquareFeet	304,000.00	311,800.00
tbiLandUse	BuildingSpaceSquareFeet	432,000.00	522,000.00
tbiLandUse	LandUseSquareFeet	304,000.00	311,800.00
tbiLandUse	LandUseSquareFeet	432,000.00	522,000.00
tbiLandUse	LotAcreage	6.84	0.00
tbiLandUse	LotAcreage	11.37	21.35
tbiLandUse	LotAcreage	0.11	0.00
tbiProjectCharacteristics	CO2IntensityFactor	641.35	380
tbiProjectCharacteristics	OperationalYear	2018	2022
tbiTripsAndVMT	HaulingTripNumber	0.00	100.00
tbiVehicleTrips	ST_TR	6.39	5.83
tbiVehicleTrips	ST_TR	42.04	28.95
tbiVehicleTrips	SU_TR	5.86	5.35
tbiVehicleTrips	SU_TR	20.43	14.07

tbVehicleTrips	WD_TR	6.65	6.07
tbVehicleTrips	WD_TR	44.32	30.52
tbWoodstoves	NumberCatalytic	8.64	0.00
tbWoodstoves	NumberNoncatalytic	8.64	0.00
tbWoodstoves	WoodstoveWoodMass	582.40	0.00

## 2.0 Emissions Summary

### 2.1 Overall Construction Unmitigated Construction

Year	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2020	2.1787	5.2608	3.9988	9.6800e-003	0.6242	0.2163	0.8405	0.2151	0.2005	0.4156	0.0000	873.0970	873.0970	0.1571	0.0000	877.0236
2021	2.1621	0.4300	0.4940	8.6000e-004	0.0235	0.0249	0.0484	6.2500e-003	0.0231	0.0294	0.0000	76.5182	76.5182	0.0160	0.0000	76.9189
<b>Maximum</b>	<b>2.1787</b>	<b>5.2608</b>	<b>3.9988</b>	<b>9.6800e-003</b>	<b>0.6242</b>	<b>0.2163</b>	<b>0.8405</b>	<b>0.2151</b>	<b>0.2005</b>	<b>0.4156</b>	<b>0.0000</b>	<b>873.0970</b>	<b>873.0970</b>	<b>0.1571</b>	<b>0.0000</b>	<b>877.0236</b>

### Mitigated Construction

Year	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2020	1.9048	3.7053	4.3666	9.6800e-003	0.4211	0.0264	0.4475	0.1017	0.0261	0.1278	0.0000	873.0964	873.0964	0.1571	0.0000	877.0231
2021	2.1327	0.3386	0.5196	8.6000e-004	0.0235	3.2700e-003	0.0267	6.2500e-003	3.2500e-003	9.5000e-003	0.0000	76.5181	76.5181	0.0160	0.0000	76.9188

Maximum	2.1327	3.7053	4.3666	9.6800e-003	0.4211	0.0264	0.4475	0.1017	0.0261	0.1278	0.0000	873.0964	873.0964	0.1571	0.0000	877.0231
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ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
6.99	28.94	-8.76	0.00	31.36	87.71	46.65	51.24	86.88	69.15	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	4-1-2020	6-30-2020	2.9642	1.8655
2	7-1-2020	9-30-2020	1.7370	1.2944
3	10-1-2020	12-31-2020	2.6328	2.3568
4	1-1-2021	3-31-2021	2.5819	2.4614
		Highest	2.9642	2.4614

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2020	4/28/2020	5	20	
2	Grading	Grading	4/29/2020	6/23/2020	5	40	
3	Trenching	Trenching	6/1/2020	6/26/2020	5	20	
4	Building Construction	Building Construction	6/29/2020	11/13/2020	5	100	
5	Architectural Coating	Architectural Coating	11/2/2020	3/19/2021	5	100	
6	Paving	Paving	1/1/2021	2/25/2021	5	40	

Acres of Grading (Site Preparation Phase): 80

Acres of Grading (Grading Phase): 160

Acres of Paving: 0.05

Residential Indoor: 1,057,050; Residential Outdoor: 352,350; Non-Residential Indoor: 7,350; Non-Residential Outdoor: 2,450; Striped

#### OffRoad Equipment



Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	2	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	3	8.00	367	0.48
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	187	0.41
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	3	8.00	367	0.48
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	2	8.00	158	0.38
Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Trenching	Skid Steer Loaders	1	8.00	65	0.37
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	3	8.00	63	0.31
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Other Construction Equipment	3	8.00	172	0.42
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Aerial Lifts	1	8.00	63	0.31
Architectural Coating	Air Compressors	2	3.20	78	0.48
Architectural Coating	Cranes	1	4.00	81	0.73
Architectural Coating	Forklifts	1	8.00	89	0.20
Paving	Cement and Mortar Mixers	1	4.00	9	0.56

Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37

### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	13	33.00	0.00	2,615.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	14	445.00	98.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	5	89.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	100.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

### **3.1 Mitigation Measures Construction**

- Use Cleaner Engines for Construction Equipment
- Use DPF for Construction Equipment
- Replace Ground Cover
- Water Exposed Area
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

### **3.2 Site Preparation - 2020**

#### Unmitigated Construction On-Site

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
	Fugitive Dust						0.1629	0.0000	0.1629	0.0708	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0676	0.7247	0.3942	7.7000e-004		0.0344	0.0344	0.0344	0.0317	0.0000	67.9145	0.0220	0.0000	0.0000	68.4636	
<b>Total</b>	<b>0.0676</b>	<b>0.7247</b>	<b>0.3942</b>	<b>7.7000e-004</b>		<b>0.1629</b>	<b>0.0344</b>	<b>0.1973</b>	<b>0.0708</b>	<b>0.0317</b>	<b>67.9145</b>	<b>0.0220</b>	<b>0.0000</b>	<b>67.9145</b>	<b>0.0000</b>	<b>68.4636</b>

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.6000e-004	5.5000e-004	5.7600e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	1.5643	4.0000e-005	0.0000	1.5643	0.0000	1.5653
<b>Total</b>	<b>7.6000e-004</b>	<b>5.5000e-004</b>	<b>5.7600e-003</b>	<b>2.0000e-005</b>	<b>1.8200e-003</b>	<b>1.0000e-005</b>	<b>1.8400e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>1.5643</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.5643</b>	<b>0.0000</b>	<b>1.5653</b>

**Mitigated Construction On-Site**

Category	tons/yr										MT/yr					
	Fugitive Dust						0.0733	0.0000	0.0733	0.0159	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0190	0.3748	0.4307	7.7000e-004		2.3600e-003	2.3600e-003	2.3600e-003	2.3600e-003	0.0000	67.9144	0.0220	0.0000	0.0000	68.4636	

Total	0.0190	0.3748	0.4307	7.7000e-004	0.0733	2.3600e-003	0.0757	0.0159	2.3600e-003	0.0183	0.0000	67.9144	67.9144	0.0220	0.0000	68.4636
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**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.6000e-004	5.5000e-004	5.7600e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5643	1.5643	4.0000e-005	0.0000	1.5653
<b>Total</b>	<b>7.6000e-004</b>	<b>5.5000e-004</b>	<b>5.7600e-003</b>	<b>2.0000e-005</b>	<b>1.8200e-003</b>	<b>1.0000e-005</b>	<b>1.8400e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>1.5643</b>	<b>1.5643</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.5653</b>

**3.3 Grading - 2020**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.2065	0.0000	0.2065	0.0755	0.0000	0.0755	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1295	1.4744	0.9223	1.8100e-003		0.0640	0.0640		0.0589	0.0589	0.0000	159.1077	159.1077	0.0515	0.0000	160.3941
<b>Total</b>	<b>0.1295</b>	<b>1.4744</b>	<b>0.9223</b>	<b>1.8100e-003</b>	<b>0.2065</b>	<b>0.0640</b>	<b>0.2705</b>	<b>0.0755</b>	<b>0.0589</b>	<b>0.1344</b>	<b>0.0000</b>	<b>159.1077</b>	<b>159.1077</b>	<b>0.0515</b>	<b>0.0000</b>	<b>160.3941</b>

**Unmitigated Construction Off-Site**



Hauling	0.0109	0.3794	0.0777	1.0300e-003	0.0222	1.2300e-003	0.0234	6.0900e-003	1.1800e-003	7.2700e-003	0.0000	99.7241	99.7241	4.5600e-003	0.0000	99.8381
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	1.5800e-003	0.0165	5.0000e-005	5.2300e-003	3.0000e-005	5.2700e-003	1.3900e-003	3.0000e-005	1.4200e-003	0.0000	4.4890	4.4890	1.1000e-004	0.0000	4.4917
<b>Total</b>	<b>0.0131</b>	<b>0.3810</b>	<b>0.0942</b>	<b>1.0800e-003</b>	<b>0.0274</b>	<b>1.2600e-003</b>	<b>0.0287</b>	<b>7.4800e-003</b>	<b>1.2100e-003</b>	<b>8.6900e-003</b>	<b>0.0000</b>	<b>104.2131</b>	<b>104.2131</b>	<b>4.6700e-003</b>	<b>0.0000</b>	<b>104.3299</b>

### 3.4 Trenching - 2020

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.0133	0.1393	0.1706	2.5000e-004	7.5100e-003	7.5100e-003	7.5100e-003	6.9100e-003	6.9100e-003	6.9100e-003	0.0000	22.1026	22.1026	7.1500e-003	0.0000	22.2813
<b>Total</b>	<b>0.0133</b>	<b>0.1393</b>	<b>0.1706</b>	<b>2.5000e-004</b>	<b>7.5100e-003</b>	<b>7.5100e-003</b>	<b>7.5100e-003</b>	<b>6.9100e-003</b>	<b>6.9100e-003</b>	<b>6.9100e-003</b>	<b>0.0000</b>	<b>22.1026</b>	<b>22.1026</b>	<b>7.1500e-003</b>	<b>0.0000</b>	<b>22.2813</b>

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.3000e-004	4.5000e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2243	1.2243	3.0000e-005	0.0000	1.2250
<b>Total</b>	<b>6.0000e-004</b>	<b>4.3000e-004</b>	<b>4.5000e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>1.0000e-005</b>	<b>1.4400e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.2243</b>	<b>1.2243</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.2250</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Off-Road	6.1800e-003	0.1321	0.1904	2.5000e-004	1.2300e-003	1.2300e-003	1.2300e-003	1.2300e-003	1.2300e-003	1.2300e-003	0.0000	22.1026	22.1026	7.1500e-003	0.0000	22.2813
<b>Total</b>	<b>6.1800e-003</b>	<b>0.1321</b>	<b>0.1904</b>	<b>2.5000e-004</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>0.0000</b>	<b>22.1026</b>	<b>22.1026</b>	<b>7.1500e-003</b>	<b>0.0000</b>	<b>22.2813</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.3000e-004	4.5000e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2243	1.2243	3.0000e-005	0.0000	1.2250
<b>Total</b>	<b>6.0000e-004</b>	<b>4.3000e-004</b>	<b>4.5000e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>1.0000e-005</b>	<b>1.4400e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.2243</b>	<b>1.2243</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.2250</b>

**3.5 Building Construction - 2020**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.1791	1.7692	1.5119	2.3800e-003		0.0949	0.0949		0.0884	0.0884	0.0000	207.1314	207.1314	0.0578	0.0000	208.5761
<b>Total</b>	<b>0.1791</b>	<b>1.7692</b>	<b>1.5119</b>	<b>2.3800e-003</b>		<b>0.0949</b>	<b>0.0949</b>		<b>0.0884</b>	<b>0.0884</b>	<b>0.0000</b>	<b>207.1314</b>	<b>207.1314</b>	<b>0.0578</b>	<b>0.0000</b>	<b>208.5761</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0194	0.5579	0.1486	1.3400e-003	0.0322	2.7600e-003	0.0350	9.3200e-003	2.6400e-003	0.0120	0.0000	128.1070	128.1070	5.8700e-003	0.0000	128.2538
Worker	0.0739	0.0531	0.5568	1.6700e-003	0.1765	1.1400e-003	0.1776	0.0469	1.0500e-003	0.0480	0.0000	151.3333	151.3333	3.7100e-003	0.0000	151.4261
<b>Total</b>	<b>0.0933</b>	<b>0.6110</b>	<b>0.7054</b>	<b>3.0100e-003</b>	<b>0.2087</b>	<b>3.9000e-003</b>	<b>0.2126</b>	<b>0.0563</b>	<b>3.6900e-003</b>	<b>0.0599</b>	<b>0.0000</b>	<b>279.4402</b>	<b>279.4402</b>	<b>9.5800e-003</b>	<b>0.0000</b>	<b>279.6799</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.0594	1.2155	1.6790	2.3800e-003		0.0105	0.0105		0.0105	0.0105	0.0000	207.1312	207.1312	0.0578	0.0000	208.5759



Total	0.0594	1.2155	1.6790	2.3800e-003	0.0105	0.0105	0.0105	0.0105	0.0105	0.0000	207.1312	207.1312	0.0578	0.0000	208.5759
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**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0194	0.5579	0.1486	1.3400e-003	0.0322	2.7600e-003	0.0350	9.3200e-003	2.6400e-003	0.0120	0.0000	128.1070	128.1070	5.8700e-003	0.0000	128.2538
Worker	0.0739	0.0531	0.5568	1.6700e-003	0.1765	1.1400e-003	0.1776	0.0469	1.0500e-003	0.0480	0.0000	151.3333	151.3333	3.7100e-003	0.0000	151.4261
<b>Total</b>	<b>0.0933</b>	<b>0.6110</b>	<b>0.7054</b>	<b>3.0100e-003</b>	<b>0.2087</b>	<b>3.9000e-003</b>	<b>0.2126</b>	<b>0.0563</b>	<b>3.6900e-003</b>	<b>0.0599</b>	<b>0.0000</b>	<b>279.4402</b>	<b>279.4402</b>	<b>9.5800e-003</b>	<b>0.0000</b>	<b>279.6799</b>

**3.6 Architectural Coating - 2020**  
**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	1.6569					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0181	0.1554	0.1409	2.0000e-004		0.0102	0.0102		9.6300e-003	9.6300e-003	0.0000	17.0816	17.0816	4.0500e-003	0.0000	17.1829
<b>Total</b>	<b>1.6750</b>	<b>0.1554</b>	<b>0.1409</b>	<b>2.0000e-004</b>		<b>0.0102</b>	<b>0.0102</b>		<b>9.6300e-003</b>	<b>9.6300e-003</b>	<b>0.0000</b>	<b>17.0816</b>	<b>17.0816</b>	<b>4.0500e-003</b>	<b>0.0000</b>	<b>17.1829</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5000e-003	4.6700e-003	0.0490	1.5000e-004	0.0155	1.0000e-004	0.0156	4.1300e-003	9.0000e-005	4.2200e-003	0.0000	13.3173	13.3173	3.3000e-004	0.0000	13.3255
<b>Total</b>	<b>6.5000e-003</b>	<b>4.6700e-003</b>	<b>0.0490</b>	<b>1.5000e-004</b>	<b>0.0155</b>	<b>1.0000e-004</b>	<b>0.0156</b>	<b>4.1300e-003</b>	<b>9.0000e-005</b>	<b>4.2200e-003</b>	<b>0.0000</b>	<b>13.3173</b>	<b>13.3173</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>13.3255</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Archit. Coating	1.6569				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5100e-003	0.1030	0.1390	2.0000e-004	1.0800e-003	1.0800e-003	1.0800e-003	1.0800e-003	1.0800e-003	1.0800e-003	0.0000	17.0816	17.0816	4.0500e-003	0.0000	17.1829
<b>Total</b>	<b>1.6614</b>	<b>0.1030</b>	<b>0.1390</b>	<b>2.0000e-004</b>	<b>1.0800e-003</b>	<b>1.0800e-003</b>	<b>1.0800e-003</b>	<b>1.0800e-003</b>	<b>1.0800e-003</b>	<b>1.0800e-003</b>	<b>0.0000</b>	<b>17.0816</b>	<b>17.0816</b>	<b>4.0500e-003</b>	<b>0.0000</b>	<b>17.1829</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															

	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5000e-003	4.6700e-003	0.0490	1.5000e-004	0.0155	1.0000e-004	4.1300e-003	9.0000e-005	4.2200e-003	13.3173	13.3173	0.0000	0.0000	3.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	13.3255
<b>Total</b>	<b>6.5000e-003</b>	<b>4.6700e-003</b>	<b>0.0490</b>	<b>1.5000e-004</b>	<b>0.0155</b>	<b>1.0000e-004</b>	<b>4.1300e-003</b>	<b>9.0000e-005</b>	<b>4.2200e-003</b>	<b>13.3173</b>	<b>13.3173</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>13.3255</b>

**3.6 Architectural Coating - 2021**  
**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
Archit. Coating	2.1088				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0207	0.1791	0.1770	2.5000e-004	0.0113	0.0113	0.0113	0.0106	0.0106	0.0106	0.0000	21.7403	21.7403	5.0900e-003	0.0000	21.8675
<b>Total</b>	<b>2.1295</b>	<b>0.1791</b>	<b>0.1770</b>	<b>2.5000e-004</b>	<b>0.0113</b>	<b>0.0113</b>	<b>0.0113</b>	<b>0.0106</b>	<b>0.0106</b>	<b>0.0106</b>	<b>0.0000</b>	<b>21.7403</b>	<b>21.7403</b>	<b>5.0900e-003</b>	<b>0.0000</b>	<b>21.8675</b>
Category	MT/yr															

**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															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.6800e-003	5.3200e-003	0.0570	1.8000e-004	0.0198	1.2000e-004	0.0199	5.2600e-003	1.1000e-004	5.3700e-003	0.0000	16.3610	16.3610	3.7000e-004	0.0000	16.3703
<b>Total</b>	<b>7.6800e-003</b>	<b>5.3200e-003</b>	<b>0.0570</b>	<b>1.8000e-004</b>	<b>0.0198</b>	<b>1.2000e-004</b>	<b>0.0199</b>	<b>5.2600e-003</b>	<b>1.1000e-004</b>	<b>5.3700e-003</b>	<b>0.0000</b>	<b>16.3610</b>	<b>16.3610</b>	<b>3.7000e-004</b>	<b>0.0000</b>	<b>16.3703</b>
Category	MT/yr															

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Archit. Coating	2.1088					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7400e-003	0.1310	0.1770	2.5000e-004	1.3800e-003	1.3800e-003	1.3800e-003	1.3800e-003	1.3800e-003	1.3800e-003	0.0000	21.7403	21.7403	5.0900e-003	0.0000	21.8675
<b>Total</b>	<b>2.1145</b>	<b>0.1310</b>	<b>0.1770</b>	<b>2.5000e-004</b>	<b>1.3800e-003</b>	<b>1.3800e-003</b>	<b>1.3800e-003</b>	<b>1.3800e-003</b>	<b>1.3800e-003</b>	<b>1.3800e-003</b>	<b>0.0000</b>	<b>21.7403</b>	<b>21.7403</b>	<b>5.0900e-003</b>	<b>0.0000</b>	<b>21.8675</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.6800e-003	5.3200e-003	0.0570	1.8000e-004	0.0198	1.2000e-004	0.0199	5.2600e-003	1.1000e-004	5.3700e-003	0.0000	16.3610	16.3610	3.7000e-004	0.0000	16.3703
<b>Total</b>	<b>7.6800e-003</b>	<b>5.3200e-003</b>	<b>0.0570</b>	<b>1.8000e-004</b>	<b>0.0198</b>	<b>1.2000e-004</b>	<b>0.0199</b>	<b>5.2600e-003</b>	<b>1.1000e-004</b>	<b>5.3700e-003</b>	<b>0.0000</b>	<b>16.3610</b>	<b>16.3610</b>	<b>3.7000e-004</b>	<b>0.0000</b>	<b>16.3703</b>

**3.7 Paving - 2021**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.0234	0.2315	0.2489	3.7000e-004		0.0134	0.0134		0.0124	0.0124	0.0000	32.2881	32.2881	0.0103	0.0000	32.5467
Paving	7.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0235</b>	<b>0.2315</b>	<b>0.2489</b>	<b>3.7000e-004</b>		<b>0.0134</b>	<b>0.0134</b>		<b>0.0124</b>	<b>0.0124</b>	<b>0.0000</b>	<b>32.2881</b>	<b>32.2881</b>	<b>0.0103</b>	<b>0.0000</b>	<b>32.5467</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	3.9000e-004	0.0134	2.9100e-003	4.0000e-005	8.5000e-004	4.0000e-005	8.9000e-004	2.3000e-004	4.0000e-005	2.7000e-004	0.0000	3.7652	3.7652	1.7000e-004	0.0000	3.7694
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	7.7000e-004	8.2400e-003	3.0000e-005	2.8600e-003	2.0000e-005	2.8700e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.3636	2.3636	5.0000e-005	0.0000	2.3649
<b>Total</b>	<b>1.5000e-003</b>	<b>0.0141</b>	<b>0.0112</b>	<b>7.0000e-005</b>	<b>3.7100e-003</b>	<b>6.0000e-005</b>	<b>3.7600e-003</b>	<b>9.9000e-004</b>	<b>6.0000e-005</b>	<b>1.0500e-003</b>	<b>0.0000</b>	<b>6.1287</b>	<b>6.1287</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>6.1343</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	8.9000e-003	0.1881	0.2745	3.7000e-004		1.7000e-003	1.7000e-003		1.7000e-003	1.7000e-003	0.0000	32.2881	32.2881	0.0103	0.0000	32.5467

Paving	7.0000e-005				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>8.9700e-003</b>	<b>0.1881</b>	<b>0.2745</b>	<b>3.7000e-004</b>	<b>1.7000e-003</b>	<b>1.7000e-003</b>	<b>1.7000e-003</b>	<b>1.7000e-003</b>	<b>0.0000</b>	<b>32.2881</b>	<b>32.2881</b>	<b>0.0103</b>	<b>0.0000</b>	<b>32.5467</b>

**Mitigated Construction Off-Site**

Category	tons/yr														MIT/yr			
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Hauling	3.9000e-004	0.0134	2.9100e-003	4.0000e-005	8.5000e-004	4.0000e-005	8.9000e-004	2.3000e-004	4.0000e-005	2.7000e-004	0.0000	3.7652	3.7652	1.7000e-004	0.0000	3.7694		
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Worker	1.1100e-003	7.7000e-004	8.2400e-003	3.0000e-005	2.8600e-003	2.0000e-005	2.8700e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.3636	2.3636	5.0000e-005	0.0000	2.3649		
<b>Total</b>	<b>1.5000e-003</b>	<b>0.0141</b>	<b>0.0112</b>	<b>7.0000e-005</b>	<b>3.7100e-003</b>	<b>6.0000e-005</b>	<b>3.7600e-003</b>	<b>9.9000e-004</b>	<b>6.0000e-005</b>	<b>1.0500e-003</b>	<b>0.0000</b>	<b>6.1287</b>	<b>6.1287</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>6.1343</b>		

Gateway Crossings, Phase 4 Criteria and Operational Emissions - Santa Clara County, Annual

**Gateway Crossings, Phase 4 Criteria and Operational Emissions**  
**Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	905.00	Space	0.00	362,000.00	0
Parking Lot	4.00	Space	0.04	1,600.00	0
Apartments Mid Rise	556.00	Dwelling Unit	21.36	556,885.00	1590

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2024

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	380	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - PG&E used to represent SVP (Silicon Valley Power. Current CO2 emission factor from City of Santa Clara 2020 Climate Action Plan)

Land Use - Applicant provided project description

Construction Phase - Applicant provided construction schedule

Off-road Equipment -

Off-road Equipment - Applicant provided equipment information

Off-road Equipment - Applicant provided equipment information

Off-road Equipment - Applicant provided equipment information







tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	83.40	556.00
tblFireplaces	NumberNoFireplace	22.24	0.00
tblFireplaces	NumberWood	94.52	0.00
tblGrading	MaterialExported	0.00	18,459.00
tblLandUse	BuildingSpaceSquareFeet	556,000.00	556,885.00
tblLandUse	LandUseSquareFeet	556,000.00	556,885.00
tblLandUse	LotAcreage	8.14	0.00
tblLandUse	LotAcreage	14.63	21.36
tblProjectCharacteristics	CO2IntensityFactor	641.35	380
tblProjectCharacteristics	OperationalYear	2018	2024
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblVehicleTrips	ST_TR	6.39	5.83
tblVehicleTrips	SU_TR	5.86	5.35
tblVehicleTrips	WD_TR	6.65	6.07
tblWoodstoves	NumberCatalytic	11.12	0.00
tblWoodstoves	NumberNoncatalytic	11.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MT/yr																
2022	2.5532	6.3312	6.0124	0.0151	0.9280	0.2374	1.1654	0.3069	0.2213	0.5281	0.0000	1,352.6811	1,352.6811	0.2309	0.0000	1,358.4539
2023	2.2222	0.6355	0.8442	1.7300e-003	0.0562	0.0296	0.0858	0.0150	0.0276	0.0426	0.0000	153.0591	153.0591	0.0290	0.0000	153.7839
<b>Maximum</b>	<b>2.5532</b>	<b>6.3312</b>	<b>6.0124</b>	<b>0.0151</b>	<b>0.9280</b>	<b>0.2374</b>	<b>1.1654</b>	<b>0.3069</b>	<b>0.2213</b>	<b>0.5281</b>	<b>0.0000</b>	<b>1,352.6811</b>	<b>1,352.6811</b>	<b>0.2309</b>	<b>0.0000</b>	<b>1,358.4539</b>

**Mitigated Construction**

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MT/yr																
2022	2.2470	5.5914	6.7850	0.0151	0.6684	0.0394	0.7078	0.1643	0.0391	0.2033	0.0000	1,352.6802	1,352.6802	0.2309	0.0000	1,358.4530
2023	2.1873	0.6274	0.9321	1.7300e-003	0.0562	5.5700e-003	0.0618	0.0150	5.5400e-003	0.0206	0.0000	153.0590	153.0590	0.0290	0.0000	153.7838
<b>Maximum</b>	<b>2.2470</b>	<b>5.5914</b>	<b>6.7850</b>	<b>0.0151</b>	<b>0.6684</b>	<b>0.0394</b>	<b>0.7078</b>	<b>0.1643</b>	<b>0.0391</b>	<b>0.2033</b>	<b>0.0000</b>	<b>1,352.6802</b>	<b>1,352.6802</b>	<b>0.2309</b>	<b>0.0000</b>	<b>1,358.4530</b>

Percent Reduction	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	7.14	10.74	-12.55	0.00	26.37	83.17	38.49	44.30	82.07	60.77	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	3-1-2022	5-31-2022	2.4172	1.8402
2	6-1-2022	8-31-2022	2.2296	1.9840
3	9-1-2022	11-30-2022	2.9465	2.7827

4	12-1-2022	2-28-2023	2.8561	2.7727
5	3-1-2023	5-31-2023	1.2391	1.2195
		Highest	2.9465	2.7827

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/1/2022	3/28/2022	5	20	
2	Grading	Grading	3/29/2022	6/20/2022	5	60	
3	Trenching	Trenching	5/2/2022	6/24/2022	5	40	
4	Building Construction	Building Construction	6/1/2022	1/10/2023	5	160	
5	Architectural Coating	Architectural Coating	10/3/2022	4/14/2023	5	140	
6	Paving	Paving	2/1/2023	4/25/2023	5	60	

Acres of Grading (Site Preparation Phase): 80

Acres of Grading (Grading Phase): 240

Acres of Paving: 0.04

Residential Indoor: 1,127,692; Residential Outdoor: 375,897; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	3	8.00	367	0.48
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rollers	2	8.00	80	0.38

Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	3	8.00	367	0.48
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	2	8.00	158	0.38
Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Trenching	Skid Steer Loaders	1	8.00	65	0.37
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	3	8.00	63	0.31
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Other Construction Equipment	3	8.00	172	0.42
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Architectural Coating	Aerial Lifts	1	8.00	63	0.31
Architectural Coating	Air Compressors	2	3.50	78	0.48
Architectural Coating	Cranes	1	4.60	231	0.29
Architectural Coating	Forklifts	1	8.00	89	0.20
Paving	Cement and Mortar Mixers	1	5.30	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	1	5.30	97	0.37

**Trips and VMI**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	13	33.00	0.00	2,307.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	17	553.00	119.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	5	111.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	100.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

- Use Cleaner Engines for Construction Equipment
- Use DPF for Construction Equipment
- Replace Ground Cover
- Water Exposed Area
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

### 3.2 Site Preparation - 2022

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Fugitive Dust					0.1629	0.0000	0.1629	0.0708	0.0000	0.0708	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0520	0.5754	0.3336	8.1000e-004		0.0234	0.0234	0.0215	0.0215	0.0215	0.0000	71.2062	71.2062	0.0230	0.0000	71.7819
<b>Total</b>	<b>0.0520</b>	<b>0.5754</b>	<b>0.3336</b>	<b>8.1000e-004</b>	<b>0.1629</b>	<b>0.0234</b>	<b>0.1863</b>	<b>0.0708</b>	<b>0.0215</b>	<b>0.0923</b>	<b>0.0000</b>	<b>71.2062</b>	<b>71.2062</b>	<b>0.0230</b>	<b>0.0000</b>	<b>71.7819</b>



Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	4.4000e-004	4.8400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4552	1.4552	3.0000e-005	0.0000	1.4560
<b>Total</b>	<b>6.6000e-004</b>	<b>4.4000e-004</b>	<b>4.8400e-003</b>	<b>2.0000e-005</b>	<b>1.8200e-003</b>	<b>1.0000e-005</b>	<b>1.8400e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>1.4552</b>	<b>1.4552</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.4560</b>

### 3.3 Grading - 2022

#### Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.3090	0.0000	0.3090	0.1132	0.0000	0.1132	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1587	1.7266	1.2578	2.7200e-003		0.0725	0.0725	0.0667	0.0667	0.0667	0.0000	238.8577	238.8577	0.0773	0.0000	240.7890
<b>Total</b>	<b>0.1587</b>	<b>1.7266</b>	<b>1.2578</b>	<b>2.7200e-003</b>	<b>0.3090</b>	<b>0.0725</b>	<b>0.3814</b>	<b>0.1132</b>	<b>0.0667</b>	<b>0.1799</b>	<b>0.0000</b>	<b>238.8577</b>	<b>238.8577</b>	<b>0.0773</b>	<b>0.0000</b>	<b>240.7890</b>

#### Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	8.5200e-003	0.2833	0.0661	8.8000e-004	0.0196	8.2000e-004	0.0204	5.3800e-003	7.9000e-004	6.1700e-003	0.0000	85.6913	85.6913	3.8500e-003	0.0000	85.7876
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8500e-003	1.8900e-003	0.0208	7.0000e-005	7.8500e-003	5.0000e-005	7.9000e-003	2.0900e-003	4.0000e-005	2.1300e-003	0.0000	6.2637	6.2637	1.3000e-004	0.0000	6.2670



Total	0.0114	0.2852	0.0869	9.5000e-004	0.0274	8.7000e-004	0.0283	7.4700e-003	8.3000e-004	8.3000e-003	0.0000	91.9550	91.9550	3.9800e-003	0.0000	92.0546
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### Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Fugitive Dust					0.1390	0.0000	0.1390	0.0255	0.0000	0.0255	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0667	1.3234	1.6030	2.7200e-003	8.8100e-003	8.8100e-003	8.8100e-003	8.8100e-003	8.8100e-003	8.8100e-003	0.0000	238.8575	238.8575	0.0773	0.0000	240.7887
<b>Total</b>	<b>0.0667</b>	<b>1.3234</b>	<b>1.6030</b>	<b>2.7200e-003</b>	<b>0.1390</b>	<b>8.8100e-003</b>	<b>0.1478</b>	<b>0.0255</b>	<b>8.8100e-003</b>	<b>0.0343</b>	<b>0.0000</b>	<b>238.8575</b>	<b>238.8575</b>	<b>0.0773</b>	<b>0.0000</b>	<b>240.7887</b>

### Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	8.5200e-003	0.2833	0.0661	8.8000e-004	0.0196	8.2000e-004	0.0204	5.3800e-003	7.9000e-004	6.1700e-003	0.0000	85.6913	85.6913	3.8500e-003	0.0000	85.7876
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8500e-003	1.8900e-003	0.0208	7.0000e-005	7.8500e-003	5.0000e-005	7.9000e-003	2.0900e-003	4.0000e-005	2.1300e-003	0.0000	6.2637	6.2637	1.3000e-004	0.0000	6.2670
<b>Total</b>	<b>0.0114</b>	<b>0.2852</b>	<b>0.0869</b>	<b>9.5000e-004</b>	<b>0.0274</b>	<b>8.7000e-004</b>	<b>0.0283</b>	<b>7.4700e-003</b>	<b>8.3000e-004</b>	<b>8.3000e-003</b>	<b>0.0000</b>	<b>91.9550</b>	<b>91.9550</b>	<b>3.9800e-003</b>	<b>0.0000</b>	<b>92.0546</b>

### **3.4 Trenching - 2022** Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.0216	0.2198	0.3380	5.0000e-004		0.0106	0.0106		9.7200e-003	9.7200e-003	0.0000	44.2324	44.2324	0.0143	0.0000	44.5900
<b>Total</b>	<b>0.0216</b>	<b>0.2198</b>	<b>0.3380</b>	<b>5.0000e-004</b>		<b>0.0106</b>	<b>0.0106</b>		<b>9.7200e-003</b>	<b>9.7200e-003</b>	<b>0.0000</b>	<b>44.2324</b>	<b>44.2324</b>	<b>0.0143</b>	<b>0.0000</b>	<b>44.5900</b>
	MIT/yr															

### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	6.9000e-004	7.5700e-003	3.0000e-005	2.8600e-003	2.0000e-005	2.8700e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.2777	2.2777	5.0000e-005	0.0000	2.2789
<b>Total</b>	<b>1.0400e-003</b>	<b>6.9000e-004</b>	<b>7.5700e-003</b>	<b>3.0000e-005</b>	<b>2.8600e-003</b>	<b>2.0000e-005</b>	<b>2.8700e-003</b>	<b>7.6000e-004</b>	<b>2.0000e-005</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>2.2777</b>	<b>2.2777</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>2.2789</b>
	MIT/yr															

### Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															

Off-Road	0.0124	0.2642	0.3808	5.0000e-004	2.4600e-003	2.4600e-003	2.4600e-003	2.4600e-003	0.0000	44.2323	44.2323	0.0143	0.0000	44.5900
<b>Total</b>	<b>0.0124</b>	<b>0.2642</b>	<b>0.3808</b>	<b>5.0000e-004</b>	<b>2.4600e-003</b>	<b>2.4600e-003</b>	<b>2.4600e-003</b>	<b>2.4600e-003</b>	<b>0.0000</b>	<b>44.2323</b>	<b>44.2323</b>	<b>0.0143</b>	<b>0.0000</b>	<b>44.5900</b>

**Mitigated Construction Off-Site**

Category	tons/yr													MIT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Worker	1.0400e-003	6.9000e-004	7.5700e-003	3.0000e-005	2.8600e-003	2.0000e-005	2.8700e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.2777	2.2777	5.0000e-005	0.0000	2.2789		
<b>Total</b>	<b>1.0400e-003</b>	<b>6.9000e-004</b>	<b>7.5700e-003</b>	<b>3.0000e-005</b>	<b>2.8600e-003</b>	<b>2.0000e-005</b>	<b>2.8700e-003</b>	<b>7.6000e-004</b>	<b>2.0000e-005</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>2.2777</b>	<b>2.2777</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>2.2789</b>		

**3.5 Building Construction - 2022**  
**Unmitigated Construction On-Site**

Category	tons/yr													MIT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Off-Road	0.2733	2.3669	2.6067	4.1300e-003	0.1171	0.1171	0.1171	0.1102	0.1102	0.1102	0.0000	350.3490	350.3490	0.0896	0.0000	352.5902		
<b>Total</b>	<b>0.2733</b>	<b>2.3669</b>	<b>2.6067</b>	<b>4.1300e-003</b>	<b>0.1171</b>	<b>0.1171</b>	<b>0.1171</b>	<b>0.1102</b>	<b>0.1102</b>	<b>0.1102</b>	<b>0.0000</b>	<b>350.3490</b>	<b>350.3490</b>	<b>0.0896</b>	<b>0.0000</b>	<b>352.5902</b>		



Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0277	0.8843	0.2345	2.4300e-003	0.0599	1.8000e-003	0.0617	0.0173	1.7200e-003	0.0190	0.0000	233.5515	233.5515	9.8100e-003	0.0000	233.7968
Worker	0.1216	0.0810	0.8895	2.9600e-003	0.3355	2.0600e-003	0.3376	0.0892	1.9000e-003	0.0911	0.0000	267.6579	267.6579	5.6700e-003	0.0000	267.7996
<b>Total</b>	<b>0.1493</b>	<b>0.9652</b>	<b>1.1240</b>	<b>5.3900e-003</b>	<b>0.3954</b>	<b>3.8600e-003</b>	<b>0.3993</b>	<b>0.1066</b>	<b>3.6200e-003</b>	<b>0.1102</b>	<b>0.0000</b>	<b>501.2094</b>	<b>501.2094</b>	<b>0.0155</b>	<b>0.0000</b>	<b>501.5963</b>

**3.5 Building Construction - 2023**  
**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0115	0.0999	0.1185	1.9000e-004	4.7100e-003	4.7100e-003	4.7100e-003	4.4300e-003	4.4300e-003	4.4300e-003	0.0000	16.0294	16.0294	4.0700e-003	0.0000	16.1311
<b>Total</b>	<b>0.0115</b>	<b>0.0999</b>	<b>0.1185</b>	<b>1.9000e-004</b>	<b>4.7100e-003</b>	<b>4.7100e-003</b>	<b>4.7100e-003</b>	<b>4.4300e-003</b>	<b>4.4300e-003</b>	<b>4.4300e-003</b>	<b>0.0000</b>	<b>16.0294</b>	<b>16.0294</b>	<b>4.0700e-003</b>	<b>0.0000</b>	<b>16.1311</b>

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.6000e-004	0.0307	9.6400e-003	1.1000e-004	2.7400e-003	4.0000e-005	2.7800e-003	7.9000e-004	3.0000e-005	8.3000e-004	0.0000	10.3816	10.3816	3.8000e-004	0.0000	10.3911
Worker	5.2100e-003	3.3300e-003	0.0374	1.3000e-004	0.0154	9.0000e-005	0.0154	4.0800e-003	9.0000e-005	4.1700e-003	0.0000	11.7806	11.7806	2.3000e-004	0.0000	11.7864

Total	6.1700e-003	0.0340	0.0471	2.4000e-004	0.0181	1.3000e-004	0.0182	4.8700e-003	1.2000e-004	5.0000e-003	0.0000	22.1622	22.1622	6.1000e-004	0.0000	22.1776
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**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	5.1500e-003	0.1004	0.1306	1.9000e-004	8.9000e-004	8.9000e-004	8.9000e-004	8.9000e-004	8.9000e-004	8.9000e-004	0.0000	16.0294	16.0294	4.0700e-003	0.0000	16.1311
<b>Total</b>	<b>5.1500e-003</b>	<b>0.1004</b>	<b>0.1306</b>	<b>1.9000e-004</b>	<b>8.9000e-004</b>	<b>8.9000e-004</b>	<b>8.9000e-004</b>	<b>8.9000e-004</b>	<b>8.9000e-004</b>	<b>8.9000e-004</b>	<b>0.0000</b>	<b>16.0294</b>	<b>16.0294</b>	<b>4.0700e-003</b>	<b>0.0000</b>	<b>16.1311</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.6000e-004	0.0307	9.6400e-003	1.1000e-004	2.7400e-003	4.0000e-005	2.7800e-003	7.9000e-004	3.0000e-005	8.3000e-004	0.0000	10.3816	10.3816	3.8000e-004	0.0000	10.3911
Worker	5.2100e-003	3.3300e-003	0.0374	1.3000e-004	0.0154	9.0000e-005	0.0154	4.0800e-003	9.0000e-005	4.1700e-003	0.0000	11.7806	11.7806	2.3000e-004	0.0000	11.7864
<b>Total</b>	<b>6.1700e-003</b>	<b>0.0340</b>	<b>0.0471</b>	<b>2.4000e-004</b>	<b>0.0181</b>	<b>1.3000e-004</b>	<b>0.0182</b>	<b>4.8700e-003</b>	<b>1.2000e-004</b>	<b>5.0000e-003</b>	<b>0.0000</b>	<b>22.1622</b>	<b>22.1622</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>22.1776</b>

**3.6 Architectural Coating - 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															
Archit. Coating	1.8553					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0196	0.1841	0.1772	3.2000e-004		8.9500e-003	8.9500e-003		8.4900e-003	8.4900e-003	0.0000	28.3140	28.3140	6.6600e-003	0.0000	28.4804
<b>Total</b>	<b>1.8749</b>	<b>0.1841</b>	<b>0.1772</b>	<b>3.2000e-004</b>		<b>8.9500e-003</b>	<b>8.9500e-003</b>		<b>8.4900e-003</b>	<b>8.4900e-003</b>	<b>0.0000</b>	<b>28.3140</b>	<b>28.3140</b>	<b>6.6600e-003</b>	<b>0.0000</b>	<b>28.4804</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0104	6.9000e-003	0.0759	2.5000e-004	0.0286	1.8000e-004	0.0288	7.6100e-003	1.6000e-004	7.7700e-003	0.0000	22.8244	22.8244	4.8000e-004	0.0000	22.8365
<b>Total</b>	<b>0.0104</b>	<b>6.9000e-003</b>	<b>0.0759</b>	<b>2.5000e-004</b>	<b>0.0286</b>	<b>1.8000e-004</b>	<b>0.0288</b>	<b>7.6100e-003</b>	<b>1.6000e-004</b>	<b>7.7700e-003</b>	<b>0.0000</b>	<b>22.8244</b>	<b>22.8244</b>	<b>4.8000e-004</b>	<b>0.0000</b>	<b>22.8365</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															

Archit. Coating	1.8553					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.4700e-003	0.1613	0.2061	3.2000e-004	1.4500e-003	1.4500e-003	1.4500e-003	1.4500e-003	1.4500e-003	1.4500e-003	1.4500e-003	1.4500e-003	1.4500e-003	6.6600e-003	0.0000	28.4804
<b>Total</b>	<b>1.8627</b>	<b>0.1613</b>	<b>0.2061</b>	<b>3.2000e-004</b>	<b>1.4500e-003</b>	<b>1.4500e-003</b>	<b>1.4500e-003</b>	<b>1.4500e-003</b>	<b>1.4500e-003</b>	<b>1.4500e-003</b>	<b>1.4500e-003</b>	<b>1.4500e-003</b>	<b>1.4500e-003</b>	<b>6.6600e-003</b>	<b>0.0000</b>	<b>28.4804</b>

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0104	6.9000e-003	0.0759	2.5000e-004	0.0286	1.8000e-004	0.0288	7.6100e-003	1.6000e-004	7.7700e-003	0.0000	22.8244	22.8244	4.8000e-004	0.0000	22.8365
<b>Total</b>	<b>0.0104</b>	<b>6.9000e-003</b>	<b>0.0759</b>	<b>2.5000e-004</b>	<b>0.0286</b>	<b>1.8000e-004</b>	<b>0.0288</b>	<b>7.6100e-003</b>	<b>1.6000e-004</b>	<b>7.7700e-003</b>	<b>0.0000</b>	<b>22.8244</b>	<b>22.8244</b>	<b>4.8000e-004</b>	<b>0.0000</b>	<b>22.8365</b>

**3.6 Architectural Coating - 2023**  
**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	2.1407					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0211	0.1953	0.2027	3.7000e-004	9.1000e-003	9.1000e-003	9.1000e-003	8.6200e-003	8.6200e-003	8.6200e-003	0.0000	32.6698	32.6698	7.6200e-003	0.0000	32.8603
<b>Total</b>	<b>2.1618</b>	<b>0.1953</b>	<b>0.2027</b>	<b>3.7000e-004</b>	<b>9.1000e-003</b>	<b>9.1000e-003</b>	<b>9.1000e-003</b>	<b>8.6200e-003</b>	<b>8.6200e-003</b>	<b>8.6200e-003</b>	<b>0.0000</b>	<b>32.6698</b>	<b>32.6698</b>	<b>7.6200e-003</b>	<b>0.0000</b>	<b>32.8603</b>



**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0112	7.1600e-003	0.0805	2.8000e-004	0.0330	2.0000e-004	0.0332	8.7800e-003	1.8000e-004	8.9600e-003	0.0000	25.3355	25.3355	5.0000e-004	0.0000	25.3480
<b>Total</b>	<b>0.0112</b>	<b>7.1600e-003</b>	<b>0.0805</b>	<b>2.8000e-004</b>	<b>0.0330</b>	<b>2.0000e-004</b>	<b>0.0332</b>	<b>8.7800e-003</b>	<b>1.8000e-004</b>	<b>8.9600e-003</b>	<b>0.0000</b>	<b>25.3355</b>	<b>25.3355</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>25.3480</b>
Category	MT/yr															

**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															
Archit. Coating	2.1407					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6200e-003	0.1861	0.2378	3.7000e-004		1.6700e-003	1.6700e-003		1.6700e-003	1.6700e-003	0.0000	32.6698	32.6698	7.6200e-003	0.0000	32.8603
<b>Total</b>	<b>2.1493</b>	<b>0.1861</b>	<b>0.2378</b>	<b>3.7000e-004</b>		<b>1.6700e-003</b>	<b>1.6700e-003</b>		<b>1.6700e-003</b>	<b>1.6700e-003</b>	<b>0.0000</b>	<b>32.6698</b>	<b>32.6698</b>	<b>7.6200e-003</b>	<b>0.0000</b>	<b>32.8603</b>
Category	MT/yr															

**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															

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0112	7.1600e-003	0.0805	2.8000e-004	0.0330	2.0000e-004	0.0332	8.7800e-003	1.8000e-004	8.9600e-003	0.0000	25.3355	25.3355	5.0000e-004	0.0000	25.3480
<b>Total</b>	<b>0.0112</b>	<b>7.1600e-003</b>	<b>0.0805</b>	<b>2.8000e-004</b>	<b>0.0330</b>	<b>2.0000e-004</b>	<b>0.0332</b>	<b>8.7800e-003</b>	<b>1.8000e-004</b>	<b>8.9600e-003</b>	<b>0.0000</b>	<b>25.3355</b>	<b>25.3355</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>25.3480</b>

### 3.7 Paving - 2023

#### Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0297	0.2902	0.3824	5.7000e-004	0.0154	0.0154	0.0154	0.0142	0.0142	0.0142	0.0000	50.0041	50.0041	0.0160	0.0000	50.4035
Paving	5.0000e-005				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0298</b>	<b>0.2902</b>	<b>0.3824</b>	<b>5.7000e-004</b>	<b>0.0154</b>	<b>0.0154</b>	<b>0.0154</b>	<b>0.0142</b>	<b>0.0142</b>	<b>0.0142</b>	<b>0.0000</b>	<b>50.0041</b>	<b>50.0041</b>	<b>0.0160</b>	<b>0.0000</b>	<b>50.4035</b>

#### Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	2.5000e-004	8.0800e-003	2.6000e-003	4.0000e-005	8.5000e-004	1.0000e-005	8.6000e-004	2.3000e-004	1.0000e-005	2.5000e-004	0.0000	3.5713	3.5713	1.5000e-004	0.0000	3.5751
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4500e-003	9.3000e-004	0.0105	4.0000e-005	4.2800e-003	3.0000e-005	4.3100e-003	1.1400e-003	2.0000e-005	1.1600e-003	0.0000	3.2868	3.2868	6.0000e-005	0.0000	3.2884

Total	1.7000e-003	9.0100e-003	0.0131	8.0000e-005	5.1300e-003	4.0000e-005	5.1700e-003	1.3700e-003	3.0000e-005	1.4100e-003	0.0000	6.8581	2.1000e-004	0.0000	6.8635
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**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.0137	0.2907	0.4231	5.7000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	50.0041	50.0041	0.0160	0.0000	50.4034
Paving	5.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0138</b>	<b>0.2907</b>	<b>0.4231</b>	<b>5.7000e-004</b>		<b>2.6500e-003</b>	<b>2.6500e-003</b>		<b>2.6500e-003</b>	<b>2.6500e-003</b>	<b>0.0000</b>	<b>50.0041</b>	<b>50.0041</b>	<b>0.0160</b>	<b>0.0000</b>	<b>50.4034</b>
	MT/yr															

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	2.5000e-004	8.0800e-003	2.6000e-003	4.0000e-005	8.5000e-004	1.0000e-005	8.6000e-004	2.3000e-004	1.0000e-005	2.5000e-004	0.0000	3.5713	3.5713	1.5000e-004	0.0000	3.5751
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4500e-003	9.3000e-004	0.0105	4.0000e-005	4.2800e-003	3.0000e-005	4.3100e-003	1.1400e-003	2.0000e-005	1.1600e-003	0.0000	3.2868	3.2868	6.0000e-005	0.0000	3.2884
<b>Total</b>	<b>1.7000e-003</b>	<b>9.0100e-003</b>	<b>0.0131</b>	<b>8.0000e-005</b>	<b>5.1300e-003</b>	<b>4.0000e-005</b>	<b>5.1700e-003</b>	<b>1.3700e-003</b>	<b>3.0000e-005</b>	<b>1.4100e-003</b>	<b>0.0000</b>	<b>6.8581</b>	<b>6.8581</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>6.8635</b>
	MT/yr															

Gateway Crossings, Phase 5, Mitigated Criteria Emissions - Santa Clara County, Annual

**Gateway Crossings, Phase 5, Mitigated Criteria Emissions**  
**Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	339.00	Space	0.00	142,500.00	0
Hotel	225.00	Room	21.40	182,000.00	0
Strip Mall	5.20	1000sqft	0.00	5,200.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2026

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	380	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - PG&E used to represent SVP (Silicon Valley Power).CO2 emission factor from City of Santa Clara 2020 Climate Action Plan

Land Use - Land Use Sizes from construction information provided by project applicant

Construction Phase - Applicant provided construction schedule

Off-road Equipment -

Off-road Equipment - Applicant provided information

Off-road Equipment - applicant provided information

Off-road Equipment - Applicant provided equipment information



tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00



	ST_TR	8.19	8.82
tbVehicleTrips			
tbVehicleTrips	ST_TR	42.04	28.95
tbVehicleTrips	SU_TR	5.95	6.40
tbVehicleTrips	SU_TR	20.43	14.83
tbVehicleTrips	WD_TR	8.17	8.79
tbVehicleTrips	WD_TR	44.32	30.52

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

Year	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2024	0.9457	4.5606	5.0768	0.0109	0.4504	0.1795	0.6299	0.1586	0.1680	0.3266	0.0000	958.6107	958.6107	0.1886	0.0000	963.3245
2025	0.7441	1.4996	2.0198	3.9800e-003	0.0742	0.0592	0.1334	0.0201	0.0555	0.0756	0.0000	348.9968	348.9968	0.0677	0.0000	350.6887
<b>Maximum</b>	<b>0.9457</b>	<b>4.5606</b>	<b>5.0768</b>	<b>0.0109</b>	<b>0.4504</b>	<b>0.1795</b>	<b>0.6299</b>	<b>0.1586</b>	<b>0.1680</b>	<b>0.3266</b>	<b>0.0000</b>	<b>958.6107</b>	<b>958.6107</b>	<b>0.1886</b>	<b>0.0000</b>	<b>963.3245</b>

#### Mitigated Construction

Year	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2024	0.7065	4.6441	5.7280	0.0109	0.3042	0.0358	0.3399	0.0745	0.0357	0.1102	0.0000	958.6099	958.6099	0.1886	0.0000	963.3236
2025	0.6679	1.7057	2.2165	3.9800e-003	0.0742	0.0143	0.0885	0.0201	0.0142	0.0343	0.0000	348.9965	348.9965	0.0677	0.0000	350.6884



Maximum	0.7065	4.6441	5.7280	0.0109	0.3042	0.0358	0.3399	0.0745	0.0357	0.1102	0.0000	958.6099	958.6099	0.1886	0.0000	963.3236
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ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
18.66	-4.78	-11.95	0.00	27.88	79.04	43.88	47.08	77.67	64.08	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	1-1-2024	3-31-2024	1.6168	1.4771
2	4-1-2024	6-30-2024	1.0781	1.0765
3	7-1-2024	9-30-2024	1.2284	1.2261
4	10-1-2024	12-31-2024	1.5327	1.5290
5	1-1-2025	3-31-2025	1.4101	1.4923
6	4-1-2025	6-30-2025	0.7438	0.7838
7	7-1-2025	9-30-2025	0.0654	0.0713
		Highest	1.6168	1.5290

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/11/2024	1/26/2024	5	20	
2	Grading	Grading	1/27/2024	2/23/2024	5	20	
3	Trenching	Trenching	1/27/2024	2/23/2024	5	20	
4	Building Construction	Building Construction	2/26/2024	4/18/2025	5	300	
5	Architectural Coating	Architectural Coating	6/2/2024	6/6/2025	5	200	
6	Paving	Paving	4/28/2025	7/18/2025	5	60	

Acres of Grading (Site Preparation Phase): 80

Acres of Grading (Grading Phase): 80

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 280,800; Non-Residential Outdoor: 93,600; Striped Parking Area:

## OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	3	8.00	367	0.48
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	3	8.00	367	0.48
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	2	8.00	158	0.38
Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Trenching	Skid Steer Loaders	1	8.00	65	0.37
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	3	5.30	63	0.31
Building Construction	Cranes	1	4.30	231	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Other Construction Equipment	3	8.00	172	0.42
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Architectural Coating	Aerial Lifts	1	4.80	63	0.31
Architectural Coating	Air Compressors	2	2.40	78	0.48
Architectural Coating	Cranes	1	2.40	231	0.29

Architectural Coating	Forklifts	1	4.80	89	0.20
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	13	33.00	0.00	948.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	17	138.00	54.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	5	28.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	100.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

### **3.1 Mitigation Measures Construction**

- Use Cleaner Engines for Construction Equipment
- Use DPF for Construction Equipment
- Replace Ground Cover
- Water Exposed Area
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

### **3.2 Site Preparation - 2024**

#### Unmitigated Construction On-Site



Off-Road	0.0199	0.3888	0.4424	8.1000e-004	2.3500e-003	2.3500e-003	2.3500e-003	0.0000	71.1650	71.1650	0.0230	0.0000	71.7404
<b>Total</b>	<b>0.0199</b>	<b>0.3888</b>	<b>0.4424</b>	<b>8.1000e-004</b>	<b>0.0733</b>	<b>2.3500e-003</b>	<b>0.0756</b>	<b>0.0159</b>	<b>2.3500e-003</b>	<b>0.0183</b>	<b>0.0230</b>	<b>0.0000</b>	<b>71.7404</b>

**Mitigated Construction Off-Site**

Category	tons/yr															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.6000e-004	4.1300e-003	1.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.3449	1.3449	2.0000e-005	0.0000	1.3456
<b>Total</b>	<b>5.8000e-004</b>	<b>3.6000e-004</b>	<b>4.1300e-003</b>	<b>1.0000e-005</b>	<b>1.8200e-003</b>	<b>1.0000e-005</b>	<b>1.8300e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>1.3449</b>	<b>1.3449</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>1.3456</b>

**3.3 Grading - 2024**

**Unmitigated Construction On-Site**

Category	tons/yr															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.1031	0.0000	0.1031	0.0378	0.0000	0.0378	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0472	0.4826	0.4011	9.1000e-004		0.0199	0.0199		0.0183	0.0183	0.0000	79.5839	79.5839	0.0257	0.0000	80.2274
<b>Total</b>	<b>0.0472</b>	<b>0.4826</b>	<b>0.4011</b>	<b>9.1000e-004</b>	<b>0.1031</b>	<b>0.0199</b>	<b>0.1230</b>	<b>0.0378</b>	<b>0.0183</b>	<b>0.0561</b>	<b>0.0000</b>	<b>79.5839</b>	<b>79.5839</b>	<b>0.0257</b>	<b>0.0000</b>	<b>80.2274</b>

**Unmitigated Construction Off-Site**



Hauling	2.3700e-003	0.0749	0.0248	3.5000e-004	8.0400e-003	1.4000e-004	8.1800e-003	2.2100e-003	1.3000e-004	2.3400e-003	0.0000	33.6040	33.6040	1.4200e-003	0.0000	33.6395
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	5.1000e-004	5.9200e-003	2.0000e-005	2.6200e-003	2.0000e-005	2.6300e-003	7.0000e-004	1.0000e-005	7.1000e-004	0.0000	1.9297	1.9297	4.0000e-005	0.0000	1.9306
<b>Total</b>	<b>3.2100e-003</b>	<b>0.0755</b>	<b>0.0307</b>	<b>3.7000e-004</b>	<b>0.0107</b>	<b>1.6000e-004</b>	<b>0.0108</b>	<b>2.9100e-003</b>	<b>1.4000e-004</b>	<b>3.0500e-003</b>	<b>0.0000</b>	<b>35.5337</b>	<b>35.5337</b>	<b>1.4600e-003</b>	<b>0.0000</b>	<b>35.5701</b>

### 3.4 Trenching - 2024

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Off-Road	9.5700e-003	0.0933	0.1691	2.5000e-004	4.0500e-003	4.0500e-003	4.0600e-003	3.7300e-003	3.7300e-003	3.7300e-003	0.0000	22.1365	22.1365	7.1600e-003	0.0000	22.3155
<b>Total</b>	<b>9.5700e-003</b>	<b>0.0933</b>	<b>0.1691</b>	<b>2.5000e-004</b>	<b>4.0500e-003</b>	<b>4.0500e-003</b>	<b>4.0600e-003</b>	<b>3.7300e-003</b>	<b>3.7300e-003</b>	<b>3.7300e-003</b>	<b>0.0000</b>	<b>22.1365</b>	<b>22.1365</b>	<b>7.1600e-003</b>	<b>0.0000</b>	<b>22.3155</b>

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	2.8000e-004	3.2300e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0526	1.0526	2.0000e-005	0.0000	1.0530
<b>Total</b>	<b>4.6000e-004</b>	<b>2.8000e-004</b>	<b>3.2300e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>1.0000e-005</b>	<b>1.4400e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.0526</b>	<b>1.0526</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>1.0530</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Off-Road	6.1800e-003	0.1321	0.1904	2.5000e-004	1.2300e-003	1.2300e-003	1.2300e-003	1.2300e-003	1.2300e-003	1.2300e-003	0.0000	22.1365	22.1365	7.1600e-003	0.0000	22.3155
<b>Total</b>	<b>6.1800e-003</b>	<b>0.1321</b>	<b>0.1904</b>	<b>2.5000e-004</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>0.0000</b>	<b>22.1365</b>	<b>22.1365</b>	<b>7.1600e-003</b>	<b>0.0000</b>	<b>22.3155</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	2.8000e-004	3.2300e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0526	1.0526	2.0000e-005	0.0000	1.0530
<b>Total</b>	<b>4.6000e-004</b>	<b>2.8000e-004</b>	<b>3.2300e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>1.0000e-005</b>	<b>1.4400e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.0526</b>	<b>1.0526</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>1.0530</b>

**3.5 Building Construction - 2024**

**Unmitigated Construction On-Site**



Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.3321	2.8430	3.5826	5.6600e-003		0.1293	0.1293		0.1216	0.1216	0.0000	479.8372	479.8372	0.1189	0.0000	482.8107
<b>Total</b>	<b>0.3321</b>	<b>2.8430</b>	<b>3.5826</b>	<b>5.6600e-003</b>		<b>0.1293</b>	<b>0.1293</b>		<b>0.1216</b>	<b>0.1216</b>	<b>0.0000</b>	<b>479.8372</b>	<b>479.8372</b>	<b>0.1189</b>	<b>0.0000</b>	<b>482.8107</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0133	0.4357	0.1339	1.5400e-003	0.0394	5.1000e-004	0.0400	0.0114	4.9000e-004	0.0119	0.0000	148.4057	148.4057	5.3900e-003	0.0000	148.5404
Worker	0.0388	0.0238	0.2748	9.9000e-004	0.1215	7.2000e-004	0.1222	0.0323	6.6000e-004	0.0330	0.0000	89.5725	89.5725	1.6600e-003	0.0000	89.6139
<b>Total</b>	<b>0.0521</b>	<b>0.4595</b>	<b>0.4087</b>	<b>2.5300e-003</b>	<b>0.1609</b>	<b>1.2300e-003</b>	<b>0.1622</b>	<b>0.0437</b>	<b>1.1500e-003</b>	<b>0.0449</b>	<b>0.0000</b>	<b>237.9782</b>	<b>237.9782</b>	<b>7.0500e-003</b>	<b>0.0000</b>	<b>238.1543</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.1553	3.0145	3.9248	5.6600e-003		0.0266	0.0266		0.0266	0.0266	0.0000	479.8367	479.8367	0.1189	0.0000	482.8101

Total	0.1553	3.0145	3.9248	5.6600e-003	0.0266	0.0266	0.0266	0.0266	0.0266	0.0000	479.8367	479.8367	0.1189	0.0000	0.0000	482.8101
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**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0133	0.4357	0.1339	1.5400e-003	0.0394	5.1000e-004	0.0400	0.0114	4.9000e-004	0.0119	0.0000	148.4057	148.4057	5.3900e-003	0.0000	148.5404
Worker	0.0388	0.0238	0.2748	9.9000e-004	0.1215	7.2000e-004	0.1222	0.0323	6.6000e-004	0.0330	0.0000	89.5725	89.5725	1.6600e-003	0.0000	89.6139
<b>Total</b>	<b>0.0521</b>	<b>0.4595</b>	<b>0.4087</b>	<b>2.5300e-003</b>	<b>0.1609</b>	<b>1.2300e-003</b>	<b>0.1622</b>	<b>0.0437</b>	<b>1.1500e-003</b>	<b>0.0449</b>	<b>0.0000</b>	<b>237.9782</b>	<b>237.9782</b>	<b>7.0500e-003</b>	<b>0.0000</b>	<b>238.1543</b>

**3.5 Building Construction - 2025**  
**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.1076	0.9124	1.2527	1.9900e-003		0.0393	0.0393		0.0369	0.0369	0.0000	168.6424	168.6424	0.0415	0.0000	169.6805
<b>Total</b>	<b>0.1076</b>	<b>0.9124</b>	<b>1.2527</b>	<b>1.9900e-003</b>		<b>0.0393</b>	<b>0.0393</b>		<b>0.0369</b>	<b>0.0369</b>	<b>0.0000</b>	<b>168.6424</b>	<b>168.6424</b>	<b>0.0415</b>	<b>0.0000</b>	<b>169.6805</b>

**Unmitigated Construction Off-Site**



Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5500e-003	0.1510	0.0458	5.4000e-004	0.0139	1.8000e-004	4.0100e-003	0.0140	1.7000e-004	4.1700e-003	51.8043	51.8043	1.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	51.8507
Worker	0.0129	7.6100e-003	0.0895	3.3000e-004	0.0427	2.5000e-004	0.0114	0.0429	2.3000e-004	0.0116	30.1987	30.1987	5.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	30.2118
<b>Total</b>	<b>0.0175</b>	<b>0.1587</b>	<b>0.1353</b>	<b>8.7000e-004</b>	<b>0.0566</b>	<b>4.3000e-004</b>	<b>0.0154</b>	<b>0.0570</b>	<b>4.0000e-004</b>	<b>0.0158</b>	<b>82.0029</b>	<b>82.0029</b>	<b>2.3900e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>82.0625</b>

**3.6 Architectural Coating - 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															
Archit. Coating	0.4376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0140	0.1249	0.1444	2.6000e-004		5.5900e-003	5.5900e-003		5.3100e-003	5.3100e-003	0.0000	22.8564	22.8564	5.0200e-003	0.0000	22.9818
<b>Total</b>	<b>0.4515</b>	<b>0.1249</b>	<b>0.1444</b>	<b>2.6000e-004</b>		<b>5.5900e-003</b>	<b>5.5900e-003</b>		<b>5.3100e-003</b>	<b>5.3100e-003</b>	<b>0.0000</b>	<b>22.8564</b>	<b>22.8564</b>	<b>5.0200e-003</b>	<b>0.0000</b>	<b>22.9818</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0900e-003	1.8900e-003	0.0219	8.0000e-005	9.6600e-003	6.0000e-005	9.7200e-003	2.5700e-003	5.0000e-005	2.6200e-003	0.0000	7.1223	7.1223	1.3000e-004	0.0000	7.1256
<b>Total</b>	<b>3.0900e-003</b>	<b>1.8900e-003</b>	<b>0.0219</b>	<b>8.0000e-005</b>	<b>9.6600e-003</b>	<b>6.0000e-005</b>	<b>9.7200e-003</b>	<b>2.5700e-003</b>	<b>5.0000e-005</b>	<b>2.6200e-003</b>	<b>0.0000</b>	<b>7.1223</b>	<b>7.1223</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>7.1256</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Archit. Coating	0.4376					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9800e-003	0.1301	0.1674	2.6000e-004	1.1900e-003	1.1900e-003	1.1900e-003	1.1900e-003	1.1900e-003	1.1900e-003	0.0000	22.8563	22.8563	5.0200e-003	0.0000	22.9818
<b>Total</b>	<b>0.4435</b>	<b>0.1301</b>	<b>0.1674</b>	<b>2.6000e-004</b>	<b>1.1900e-003</b>	<b>1.1900e-003</b>	<b>1.1900e-003</b>	<b>1.1900e-003</b>	<b>1.1900e-003</b>	<b>1.1900e-003</b>	<b>0.0000</b>	<b>22.8563</b>	<b>22.8563</b>	<b>5.0200e-003</b>	<b>0.0000</b>	<b>22.9818</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0900e-003	1.8900e-003	0.0219	8.0000e-005	9.6600e-003	6.0000e-005	9.7200e-003	2.5700e-003	5.0000e-005	2.6200e-003	0.0000	7.1223	7.1223	1.3000e-004	0.0000	7.1256
<b>Total</b>	<b>3.0900e-003</b>	<b>1.8900e-003</b>	<b>0.0219</b>	<b>8.0000e-005</b>	<b>9.6600e-003</b>	<b>6.0000e-005</b>	<b>9.7200e-003</b>	<b>2.5700e-003</b>	<b>5.0000e-005</b>	<b>2.6200e-003</b>	<b>0.0000</b>	<b>7.1223</b>	<b>7.1223</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>7.1256</b>

**3.6 Architectural Coating - 2025**

**Unmitigated Construction On-Site**



Off-Road	7.7700e-003	0.1690	0.2175	3.4000e-004	1.5500e-003	1.5500e-003	1.5500e-003	1.5500e-003	0.0000	29.6872	29.6872	6.5000e-003	0.0000	29.8497
<b>Total</b>	<b>0.5761</b>	<b>0.1690</b>	<b>0.2175</b>	<b>3.4000e-004</b>	<b>1.5500e-003</b>	<b>1.5500e-003</b>	<b>1.5500e-003</b>	<b>1.5500e-003</b>	<b>0.0000</b>	<b>29.6872</b>	<b>29.6872</b>	<b>6.5000e-003</b>	<b>0.0000</b>	<b>29.8497</b>

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7900e-003	2.2400e-003	0.0263	1.0000e-004	0.0126	7.0000e-005	0.0126	3.3400e-003	7.0000e-005	3.4000e-003	0.0000	8.8767	8.8767	1.5000e-004	0.0000	8.8806
<b>Total</b>	<b>3.7900e-003</b>	<b>2.2400e-003</b>	<b>0.0263</b>	<b>1.0000e-004</b>	<b>0.0126</b>	<b>7.0000e-005</b>	<b>0.0126</b>	<b>3.3400e-003</b>	<b>7.0000e-005</b>	<b>3.4000e-003</b>	<b>0.0000</b>	<b>8.8767</b>	<b>8.8767</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>8.8806</b>

**3.7 Paving - 2025**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0283	0.2670	0.4073	6.1000e-004		0.0130	0.0130		0.0120	0.0120	0.0000	53.2386	53.2386	0.0169	0.0000	53.6615
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0283</b>	<b>0.2670</b>	<b>0.4073</b>	<b>6.1000e-004</b>		<b>0.0130</b>	<b>0.0130</b>		<b>0.0120</b>	<b>0.0120</b>	<b>0.0000</b>	<b>53.2386</b>	<b>53.2386</b>	<b>0.0169</b>	<b>0.0000</b>	<b>53.6615</b>

**Unmitigated Construction Off-Site**





Hauling	2.5000e-004	7.7300e-003	2.6300e-003	4.0000e-005	8.5000e-004	1.0000e-005	8.6000e-004	2.3000e-004	1.0000e-005	2.5000e-004	0.0000	3.5189	3.5189	1.5000e-004	0.0000	3.5227
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2900e-003	7.6000e-004	8.9800e-003	3.0000e-005	4.2800e-003	3.0000e-005	4.3100e-003	1.1400e-003	2.0000e-005	1.1600e-003	0.0000	3.0300	3.0300	5.0000e-005	0.0000	3.0313
<b>Total</b>	<b>1.5400e-003</b>	<b>8.4900e-003</b>	<b>0.0116</b>	<b>7.0000e-005</b>	<b>5.1300e-003</b>	<b>4.0000e-005</b>	<b>5.1700e-003</b>	<b>1.3700e-003</b>	<b>3.0000e-005</b>	<b>1.4100e-003</b>	<b>0.0000</b>	<b>6.5489</b>	<b>6.5489</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>6.5540</b>

Gateway Crossings, Phase 1, Criteria and Operational - Santa Clara County, Annual

**Gateway Crossings, Phase 1, Criteria and Operational**  
 Santa Clara County, Annual

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	261.00	Dwelling Unit	21.36	261,000.00	746
Strip Mall	5.30	1000sqft	0.00	5,300.00	0
Enclosed Parking with Elevator	485.00	Space	0.00	194,000.00	0
Parking Lot	4.00	Space	0.04	1,600.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4	Operational Year	2019		

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MMWhr)	380	CH4 Intensity (lb/MMWhr)	0.029	N2O Intensity (lb/MMWhr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - PG&E rates used to represent SVP CO2 emission factor

Land Use - From applicant provided construction information

Construction Phase - Applicant provided construction schedule

Grading - 23542 cy soil off haul

Demolition - 272840 sf of building demolished

Trips and VMT - 800 cy of paving

Architectural Coating -

Vehicle Trips - trip rates from TIA

Woodstoves - no wood stoves or wood based fireplaces

Area Coating -

Energy Use - title 24, 2013 values used

Energy Mitigation - title 24 2016 values came into effect on 1st January 2017

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	100.00
tblConstructionPhase	NumDays	370.00	100.00
tblConstructionPhase	NumDays	35.00	40.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	10.00	20.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	39.15	261.00
tblFireplaces	NumberNoFireplace	10.44	0.00
tblFireplaces	NumberWood	44.37	0.00
tblGrading	MaterialExported	0.00	23,542.00
tblLandUse	LotAcreage	6.87	21.36
tblLandUse	LotAcreage	0.12	0.00
tblLandUse	LotAcreage	4.36	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00

tb\OffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tb\OffRoadEquipment	UsageHours	6.00	3.20
tb\OffRoadEquipment	UsageHours	7.00	8.00
tb\OffRoadEquipment	UsageHours	7.00	8.00
tb\ProjectCharacteristics	CO2IntensityFactor	641.35	380
tb\ProjectCharacteristics	OperationalYear	2018	2019
tb\TripsAndVMT	HaulingTripNumber	0.00	100.00
tb\VehicleTrips	ST_TR	6.39	5.75
tb\VehicleTrips	ST_TR	42.04	30.42
tb\VehicleTrips	SU_TR	5.86	5.27
tb\VehicleTrips	SU_TR	20.43	14.71
tb\VehicleTrips	WD_TR	6.65	6.00
tb\VehicleTrips	WD_TR	44.32	32.07
tb\Woodstoves	NumberCatalytic	5.22	0.00
tb\Woodstoves	WoodstoveWoodMass	582.40	0.00

## 2.0 Emissions Summary

### 2.2 Overall Operational Unmitigated Operational

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	1.3066	0.0507	1.9641	2.8000e-004	0.0130	0.0130	0.0130	0.0130	0.0130	0.0130	0.0000	35.7575	35.7575	3.7600e-003	6.0000e-004	36.0294
Energy	0.0157	0.1337	0.0572	8.5000e-004	0.0108	0.0108	0.0108	0.0108	0.0108	0.0108	0.0000	588.9038	588.9038	0.0361	9.6900e-003	592.6945
Mobile	0.4985	2.0411	5.7415	0.0166	1.4029	0.0191	1.4220	0.3756	0.0179	0.3935	0.0000	1,520,408 <sup>3</sup>	1,520,408 <sup>3</sup>	0.0587	0.0000	1,521,876 <sup>2</sup>

Waste									0.0000	0.0000	0.0000	25.5018	1.5071	0.0000	63.1795
Water									0.0000	0.0000	0.0000	22.8391	0.5687	0.0138	46.6713
<b>Total</b>	<b>1.8207</b>	<b>2.2256</b>	<b>7.7628</b>	<b>0.0178</b>	<b>1.4029</b>	<b>0.0428</b>	<b>1.4457</b>	<b>0.3756</b>	<b>0.0417</b>	<b>0.4173</b>	<b>2,167.908</b>	<b>2,198.9300</b>	<b>2.1743</b>	<b>0.0240</b>	<b>2,260.450</b>
											<b>7</b>				<b>9</b>

**Mitigated Operational**

Category	tons/yr													MT/yr			
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Area	1.3066	0.0507	1.9641	2.8000e-004		0.0130	0.0130		0.0130	0.0130	0.0000	35.7575	3.7600e-003	6.0000e-004		36.0294	
Energy	0.0125	0.1069	0.0457	6.8000e-004		8.6400e-003	8.6400e-003		8.6400e-003	8.6400e-003	0.0000	515.4664	0.0323	8.4500e-003		518.7923	
Mobile	0.4985	2.0411	5.7415	0.0166	1.4029	0.0191	1.4220	0.3756	0.0179	0.3935	0.0000	1,520.408	0.0587	0.0000		1,521.876	
Waste						0.0000	0.0000		0.0000	0.0000	25.5018	0.0000	25.5018	1.5071	0.0000	63.1795	
Water						0.0000	0.0000		0.0000	0.0000	5.5195	22.8391	28.3586	0.5687	0.0138	46.6713	
<b>Total</b>	<b>1.8176</b>	<b>2.1987</b>	<b>7.7513</b>	<b>0.0176</b>	<b>1.4029</b>	<b>0.0407</b>	<b>1.4436</b>	<b>0.3756</b>	<b>0.0395</b>	<b>0.4151</b>	<b>31.0213</b>	<b>2,094.471</b>	<b>2,125.4926</b>	<b>2.1705</b>	<b>0.0228</b>	<b>2,186.548</b>	
											<b>3</b>					<b>7</b>	

Percent Reduction	tons/yr													MT/yr			
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
0.17		1.21	0.15	0.96	0.00	5.07	0.15	0.00	5.20	0.52	0.00	3.39	3.34	0.18	5.16	3.27	

**4.0 Operational Detail - Mobile**

**4.1 Mitigation Measures Mobile**

Category	tons/yr											MIT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	0.4985	2.0411	5.7415	0.0166	1.4029	0.0191	1.4220	0.3756	0.0179	0.3935	0.0000	1,520.408	1,520.4083	0.0587	0.0000	1,521.876
Unmitigated	0.4985	2.0411	5.7415	0.0166	1.4029	0.0191	1.4220	0.3756	0.0179	0.3935	0.0000	1,520.408	1,520.4083	0.0587	0.0000	1,521.876

#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Apartments Mid Rise	1,566.00	1,500.75	1,375.47	3,532,452	3,532,452
Enclosed Parking with Elevator	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	169.97	161.23	77.96	239,595	239,595
Total	1,735.97	1,661.98	1,453.43	3,772,047	3,772,047

#### 4.3 Trip Type Information

Land Use	Miles							Trip Purpose %				
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by			
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3			
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0			
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0			
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15			

#### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.601004	0.039123	0.186461	0.109772	0.016124	0.004965	0.012251	0.019838	0.002045	0.001602	0.005388	0.000616	0.000812
Strip Mall	0.601004	0.039123	0.186461	0.109772	0.016124	0.004965	0.012251	0.019838	0.002045	0.001602	0.005388	0.000616	0.000812

Enclosed Parking with Elevator	0.601004	0.039123	0.186461	0.109772	0.016124	0.004965	0.012251	0.019838	0.002045	0.001602	0.005388	0.000616	0.000812
Parking Lot	0.601004	0.039123	0.186461	0.109772	0.016124	0.004965	0.012251	0.019838	0.002045	0.001602	0.005388	0.000616	0.000812

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	MT/yr															
Electricity Mitigated					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	391.6758	391.6758	0.0299	6.1800e-003	394.2660
Electricity Unmitigated					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	434.0612	434.0612	0.0331	6.8500e-003	436.9317
Natural Gas Mitigated	0.0125	0.1069	0.0457	6.8000e-004	8.6400e-003	8.6400e-003	8.6400e-003	8.6400e-003	8.6400e-003	8.6400e-003	0.0000	123.7907	123.7907	2.3700e-003	2.2700e-003	124.5263
Natural Gas Unmitigated	0.0157	0.1337	0.0572	8.5000e-004	0.0108	0.0108	0.0108	0.0108	0.0108	0.0108	0.0000	154.8426	154.8426	2.9700e-003	2.8400e-003	155.7628

### 5.2 Energy by Land Use - Natural Gas

#### Unmitigated

Land Use	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	kBTU/yr	tons/yr															
Apartments Mid Rise	2.88903e+006	0.0156	0.1331	0.0567	8.5000e-004	0.0108	0.0108	0.0108	0.0108	0.0108	0.0108	0.0000	154.1695	154.1695	2.9500e-003	2.8300e-003	155.0857





Parking Lot	1408	0.2427	2.0000e-005	0.0000	0.2443
Strip Mall	58035	10.0032	7.6000e-004	1.6000e-004	10.0694
<b>Total</b>		<b>434.0612</b>	<b>0.0331</b>	<b>6.8500e-003</b>	<b>436.9317</b>

**Mitigated**

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
Apartment Mid Rise	1.12258e+006	193.4939	0.0148	3.0600e-003	194.7735
Enclosed Parking with Elevator	1.09463e+006	188.6753	0.0144	2.9800e-003	189.9230
Parking Lot	1408	0.2427	2.0000e-005	0.0000	0.2443
Strip Mall	53746.2	9.2640	7.1000e-004	1.5000e-004	9.3252
<b>Total</b>		<b>391.6758</b>	<b>0.0299</b>	<b>6.1900e-003</b>	<b>394.2660</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															

Mitigated	1.3066	0.0507	1.9641	2.8000e-004	0.0130	0.0130	0.0130	0.0130	0.0000	35.7575	35.7575	3.7600e-003	6.0000e-004	36.0294
Unmitigated	1.3066	0.0507	1.9641	2.8000e-004	0.0130	0.0130	0.0130	0.0130	0.0000	35.7575	35.7575	3.7600e-003	6.0000e-004	36.0294

## 6.2 Area by SubCategory

### Unmitigated

SubCategory	tons/yr															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	0.1906					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0527					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.2900e-003	0.0281	0.0120	1.8000e-004	2.2700e-003	2.2700e-003	2.2700e-003	0.0107	2.2700e-003	2.2700e-003	0.0000	32.5831	32.5831	6.2000e-004	6.0000e-004	32.7767
Landscaping	0.0601	0.0226	1.9521	1.0000e-004	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0000	3.1745	3.1745	3.1300e-003	0.0000	3.2527
<b>Total</b>	<b>1.3066</b>	<b>0.0507</b>	<b>1.9641</b>	<b>2.8000e-004</b>		<b>0.0130</b>	<b>0.0130</b>		<b>0.0130</b>	<b>0.0130</b>	<b>0.0000</b>	<b>35.7575</b>	<b>35.7575</b>	<b>3.7500e-003</b>	<b>6.0000e-004</b>	<b>36.0294</b>

### Mitigated

SubCategory	tons/yr															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	0.1906					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0527					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.2900e-003	0.0281	0.0120	1.8000e-004	2.2700e-003	2.2700e-003	2.2700e-003	0.0107	2.2700e-003	2.2700e-003	0.0000	32.5831	32.5831	6.2000e-004	6.0000e-004	32.7767

Landscaping	0.0601	0.0226	1.9521	1.0000e-004	0.0107	0.0107	0.0107	0.0000	3.1745	3.1745	3.1300e-003	0.0000	3.2527
<b>Total</b>	<b>1.3066</b>	<b>0.0507</b>	<b>1.9641</b>	<b>2.8000e-004</b>	<b>0.0130</b>	<b>0.0130</b>	<b>0.0130</b>	<b>0.0000</b>	<b>35.7575</b>	<b>35.7575</b>	<b>3.7500e-003</b>	<b>6.0000e-004</b>	<b>36.0294</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Category	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	28.3586	0.5687	0.0138	46.6713
Unmitigated	28.3586	0.5687	0.0138	46.6713

### 7.2 Water by Land Use

#### Unmitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Apartments Mid Rise	17.0052 / 10.7207	27.7227	0.5558	0.0134	45.6222
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.392584 / 0.240616	0.6359	0.0128	3.1000e-004	1.0491

Total	28.3586	0.5687	0.0138	46.6713
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**Mitigated**

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Apartments Mid Rise	17.0052 / 10.7207	27.7227	0.5558	0.0134	45.6222
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.392584 / 0.240616	0.6359	0.0128	3.1000e-004	1.0491
<b>Total</b>		<b>28.3586</b>	<b>0.5687</b>	<b>0.0138</b>	<b>46.6713</b>

**8.0 Waste Detail**

**8.1 Mitigation Measures Waste**

**Category/Year**

Category/Year	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	25.5018	1.5071	0.0000	63.1795
Unmitigated	25.5018	1.5071	0.0000	63.1795

## 8.2 Waste by Land Use

### Unmitigated

Land Use	Waste Disposed tons	Total CO2 CH4	N2O	CO2e
Apartment's Mid Rise	120.06	1.4403	0.0000	60.3784
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000
Strip Mall	5.57	1.1307	0.0668	2.8012
<b>Total</b>		<b>25.5018</b>	<b>1.5071</b>	<b>63.1795</b>

### Mitigated

Land Use	Waste Disposed tons	Total CO2 CH4	N2O	CO2e
Apartment's Mid Rise	120.06	1.4403	0.0000	60.3784
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000
Strip Mall	5.57	1.1307	0.0668	2.8012
<b>Total</b>		<b>25.5018</b>	<b>1.5071</b>	<b>63.1795</b>

Gateway Crossings, Phase1 +Phase 2 Operational - Santa Clara County, Annual

**Gateway Crossings, Phase1 +Phase 2 Operational**  
Santa Clara County, Annual

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	593.00	Dwelling Unit	21.30	738,000.00	1696
Strip Mall	5.30	1000sqft	0.00	5,300.00	0
Parking Lot	11.00	Space	0.10	4,400.00	0
Enclosed Parking with Elevator	1,110.00	Space	0.00	513,800.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2021

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	380	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - PG&E used to represent SVP emission rates

Land Use - Applicant provided project information

Construction Phase - only operational emissions modeled

Off-road Equipment - only operational emissions modeled

Grading -

Demolition -

Trips and VMT -

Architectural Coating -

Vehicle Trips - project trip rates from TIA

Woodstoves - no wood based fireplaces or stoves

Energy Use - title 24 2013 values

Energy Mitigation - title 24 2016 came into effect on 1st January 2017

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	1.00
tblConstructionPhase	PhaseEndDate	6/9/2017	5/15/2017
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	88.95	593.00
tblFireplaces	NumberNoFireplace	23.72	0.00
tblFireplaces	NumberWood	100.81	0.00
tblLandUse	BuildingSpaceSquareFeet	593,000.00	738,000.00
tblLandUse	BuildingSpaceSquareFeet	444,000.00	513,800.00
tblLandUse	LandUseSquareFeet	593,000.00	738,000.00
tblLandUse	LandUseSquareFeet	444,000.00	513,800.00
tblLandUse	LotAcreage	15.61	21.30
tblLandUse	LotAcreage	0.12	0.00
tblLandUse	LotAcreage	9.99	0.00
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	CO2IntensityFactor	641.35	380
tblProjectCharacteristics	OperationalYear	2018	2021
tblVehicleTrips	ST_TR	6.39	5.75
tblVehicleTrips	ST_TR	42.04	30.42
tblVehicleTrips	SU_TR	5.86	5.27
tblVehicleTrips	SU_TR	20.43	14.71
tblVehicleTrips	WD_TR	6.65	6.00
tblVehicleTrips	WD_TR	44.32	32.07
tblWoodstoves	NumberCatalytic	11.86	0.00

tbWoodstoves	NumberNoncatalytic	11.86	0.00
tbWoodstoves	WoodstoveWoodMass	582.40	0.00

## 2.0 Emissions Summary

### 2.2 Overall Operational Unmitigated Operational

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	3.6117	0.1150	4.4503	6.4000e-004	0.0295	0.0295	0.0295	0.0295	0.0295	0.0295	0.0000	81.2422	81.2422	8.4400e-003	1.3600e-003	81.8577
Energy	0.0355	0.3031	0.1292	1.9300e-003	0.0245	0.0245	0.0245	0.0245	0.0245	0.0245	0.0000	1,409.3803	1,409.3803	0.0875	0.0232	1,418.4654
Mobile	1.0737	4.5075	12.4524	0.0365	3.0739	0.0418	3.1157	0.8229	0.0393	0.8622	0.0000	3,331.3167	3,331.3167	0.1282	0.0000	3,334.5212
Waste					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	56.5025	56.5025	3.3392	0.0000	0.0000	139.9826
Water					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	12.3821	51.2406	63.6227	1.2757	0.0308	104.7041
<b>Total</b>	<b>4.7209</b>	<b>4.9255</b>	<b>17.0319</b>	<b>0.0390</b>	<b>3.0739</b>	<b>0.0958</b>	<b>3.1697</b>	<b>0.8229</b>	<b>0.0933</b>	<b>0.9162</b>	<b>68.8846</b>	<b>4,873.1798</b>	<b>4,942.0644</b>	<b>4.8390</b>	<b>0.0554</b>	<b>5,079.5311</b>

### Mitigated Operational

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	3.6117	0.1150	4.4503	6.4000e-004	0.0295	0.0295	0.0295	0.0295	0.0295	0.0295	0.0000	81.2422	81.2422	8.4400e-003	1.3600e-003	81.8577



Energy	0.0284	0.2424	0.1033	1.5500e-003	0.0196	0.0196	0.0196	0.0196	0.0196	0.0000	1,229.8927	1,229.8927	0.0778	0.0201	1,237.8379
Mobile	1.0737	4.5075	12.4524	0.0365	3.0739	0.0418	3.1157	0.8229	0.0393	0.0000	3,331.3167	3,331.3167	0.1282	0.0000	3,334.5212
Waste					0.0000	0.0000	0.0000		0.0000	56.5025	56.5025	3.3392	0.0000	139.9826	
Water					0.0000	0.0000	0.0000		0.0000	12.3821	63.6227	1.2757	0.0308	104.7041	
<b>Total</b>	<b>4.7138</b>	<b>4.8648</b>	<b>17.0060</b>	<b>0.0387</b>	<b>3.0739</b>	<b>0.0909</b>	<b>3.1648</b>	<b>0.8229</b>	<b>0.0884</b>	<b>0.9113</b>	<b>4,762.5768</b>	<b>4,762.5768</b>	<b>4.8293</b>	<b>0.0523</b>	<b>4,898.9036</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.15	1.23	0.15	0.97	0.00	5.13	0.15	0.00	5.26	0.54	0.00	3.68	3.63	0.20	5.46	3.56

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Category	tons/yr															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	1.0737	4.5075	12.4524	0.0365	3.0739	0.0418	3.1157	0.8229	0.0393	0.8622	0.0000	3,331.3167	3,331.3167	0.1282	0.0000	3,334.5212
Unmitigated	1.0737	4.5075	12.4524	0.0365	3.0739	0.0418	3.1157	0.8229	0.0393	0.8622	0.0000	3,331.3167	3,331.3167	0.1282	0.0000	3,334.5212

### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT		Mitigated Annual VMT	
	Weekday	Saturday	Sunday	Unmitigated	Mitigated	Unmitigated	Mitigated
Apartments Mid Rise	3,558.00	3,409.75	3,125.11	8,025,839	8,025,839	8,025,839	8,025,839
Enclosed Parking with Elevator	0.00	0.00	0.00				

Parking Lot	0.00	0.00	0.00	0.00	239,595	8,265,434
Strip Mall	169.97	161.23	77.96	239,595	239,595	8,265,434
Total	3,727.97	3,570.98	3,203.07	8,265,434	8,265,434	8,265,434

### 4.3 Trip Type Information

Land Use	Miles				Trip %				Trip Purpose %			
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	Primary	Diverted	Pass-by	
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3			
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0			
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0			
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15			

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.607897	0.037434	0.184004	0.107261	0.014919	0.004991	0.012447	0.020659	0.002115	0.001554	0.005334	0.000623	0.000761
Strip Mall	0.607897	0.037434	0.184004	0.107261	0.014919	0.004991	0.012447	0.020659	0.002115	0.001554	0.005334	0.000623	0.000761
Parking Lot	0.607897	0.037434	0.184004	0.107261	0.014919	0.004991	0.012447	0.020659	0.002115	0.001554	0.005334	0.000623	0.000761
Enclosed Parking with Elevator	0.607897	0.037434	0.184004	0.107261	0.014919	0.004991	0.012447	0.020659	0.002115	0.001554	0.005334	0.000623	0.000761

### 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Category	tons/yr											MIT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Electricity Mitigated					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	949.2530	949.2530	0.0724	0.0150	955.5306



Strip Mall	9082.08	5.0000e-005	4.5000e-004	3.7000e-004	0.0000	3.0000e-005	3.0000e-005	3.0000e-005	0.0000	0.4847	0.4847	1.0000e-005	1.0000e-005	0.4875
<b>Total</b>		<b>0.0284</b>	<b>0.2424</b>	<b>0.1033</b>	<b>1.5400e-003</b>	<b>0.0196</b>	<b>0.0196</b>	<b>0.0196</b>	<b>0.0000</b>	<b>280.6396</b>	<b>280.6396</b>	<b>5.3800e-003</b>	<b>5.1500e-003</b>	<b>282.3074</b>

### 5.3 Energy by Land Use - Electricity

#### Unmitigated

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
Apartment's Mid Rise	2.61571e+006	450.8563	0.0344	7.1200e-003	453.8379
Enclosed Parking with Elevator	3.46301e+006	596.9024	0.0456	9.4200e-003	600.8498
Parking Lot	3872	0.6674	5.0000e-005	1.0000e-005	0.6718
Strip Mall	58035	10.0032	7.6000e-004	1.6000e-004	10.0694
<b>Total</b>		<b>1,058.4293</b>	<b>0.0808</b>	<b>0.0167</b>	<b>1,065.4289</b>

#### Mitigated

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
Apartment's Mid Rise	2.55054e+006	439.6240	0.0336	6.9400e-003	442.5313
Enclosed Parking with Elevator	2.89907e+006	499.6977	0.0381	7.8900e-003	503.0022
Parking Lot	3872	0.6674	5.0000e-005	1.0000e-005	0.6718
Strip Mall	53746.2	9.2640	7.1000e-004	1.5000e-004	9.3252

Total	949.2530	0.0724	0.0150	955.5306
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## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	3.6117	0.1150	4.4503	6.4000e-004		0.0295	0.0295		0.0295	0.0295	0.0000	81.2422	81.2422	8.4400e-003	1.3600e-003	81.8577
Unmitigated	3.6117	0.1150	4.4503	6.4000e-004		0.0295	0.0295		0.0295	0.0295	0.0000	81.2422	81.2422	8.4400e-003	1.3600e-003	81.8577

### 6.2 Area by SubCategory

#### Unmitigated

SubCategory	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	0.5331					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.4800e-003	0.0639	0.0272	4.1000e-004		5.1700e-003	5.1700e-003		5.1700e-003	5.1700e-003	0.0000	74.0297	74.0297	1.4200e-003	1.3600e-003	74.4696
Landscaping	0.1347	0.0510	4.4231	2.3000e-004		0.0244	0.0244		0.0244	0.0244	0.0000	7.2125	7.2125	7.0200e-003	0.0000	7.3881

Total	3.6117	0.1150	4.4503	6.4000e-004	0.0295	0.0295	0.0295	0.0295	0.0000	81.2422	81.2422	8.4400e-003	1.3600e-003	81.8577
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**Mitigated**

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
tons/yr																	
MT/yr																	
Architectural Coating	0.5331					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.4800e-003	0.0639	0.0272	4.1000e-004		5.1700e-003	5.1700e-003		5.1700e-003	5.1700e-003	0.0000	74.0297	74.0297	1.4200e-003	1.3600e-003	74.4696	
Landscaping	0.1347	0.0510	4.4231	2.3000e-004		0.0244	0.0244		0.0244	0.0244	0.0000	7.2125	7.2125	7.0200e-003	0.0000	7.3881	
<b>Total</b>	<b>3.6117</b>	<b>0.1150</b>	<b>4.4503</b>	<b>6.4000e-004</b>		<b>0.0295</b>	<b>0.0295</b>		<b>0.0295</b>	<b>0.0295</b>	<b>0.0000</b>	<b>81.2422</b>	<b>81.2422</b>	<b>8.4400e-003</b>	<b>1.3600e-003</b>	<b>81.8577</b>	

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Category	Total CO2	CH4	N2O	CO2e
MT/yr				
Mitigated	63.6227	1.2757	0.0308	104.7041
Unmitigated	63.6227	1.2757	0.0308	104.7041

## 7.2 Water by Land Use

### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	38.6363 / 24.3577	62.9868	1.2628	0.0305	103.6551
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.392584 / 0.240616	0.6359	0.0128	3.1000e-004	1.0491
<b>Total</b>		<b>63.6227</b>	<b>1.2757</b>	<b>0.0308</b>	<b>104.7041</b>

### Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	38.6363 / 24.3577	62.9868	1.2628	0.0305	103.6551
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.392584 / 0.240616	0.6359	0.0128	3.1000e-004	1.0491
<b>Total</b>		<b>63.6227</b>	<b>1.2757</b>	<b>0.0308</b>	<b>104.7041</b>

## 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	56.5025	3.3392	0.0000	139.9826
Unmitigated	56.5025	3.3392	0.0000	139.9826

## 8.2 Waste by Land Use

### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	272.78	55.3719	3.2724	0.0000	137.1815
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5.57	1.1307	0.0668	0.0000	2.8012
<b>Total</b>		<b>56.5025</b>	<b>3.3392</b>	<b>0.0000</b>	<b>139.9826</b>

### Mitigated



Land Use	Waste Disposed tons	Total CO2			CO2e
		CH4	N2O	CO2e	
MT/yr					
Apartments Mid Rise	272.78	55.3719	3.2724	0.0000	137.1815
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5.57	1.1307	0.0668	0.0000	2.8012
<b>Total</b>		<b>56.5025</b>	<b>3.3392</b>	<b>0.0000</b>	<b>139.9826</b>

phase1 +phase2+phase3, operational - Santa Clara County, Annual

**phase1 +phase2+phase3, operational**  
**Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	1,025.00	Dwelling Unit	23.94	1,250,000.00	2932
Strip Mall	10.20	1000sqft	0.00	10,200.00	0
Parking Lot	18.00	Space	0.16	7,200.00	0
Enclosed Parking with Elevator	1,870.00	Space	0.00	825,600.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2022

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MMWhr)	380	CH4 Intensity (lb/MMWhr)	0.029	N2O Intensity (lb/MMWhr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - PG&E used to represent SVP emission rates

Land Use - Applicant provided project description

Construction Phase - only operational emissions modeled

Off-road Equipment - only operational emissions modeled

Vehicle Trips - trip rates from project TIA

Woodstoves - no wood burning

Energy Use - title 24 2013 values

Solid Waste -

Energy Mitigation - title 24 2016 values

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblConstructionPhase	NumDays	20.00	1.00
tblConstructionPhase	PhaseEndDate	6/9/2017	5/15/2017
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	153.75	1,025.00
tblFireplaces	NumberNoFireplace	41.00	0.00
tblFireplaces	NumberWood	174.25	0.00
tblLandUse	BuildingSpaceSquareFeet	1,025,000.00	1,250,000.00
tblLandUse	BuildingSpaceSquareFeet	748,000.00	825,600.00
tblLandUse	LandUseSquareFeet	1,025,000.00	1,250,000.00
tblLandUse	LandUseSquareFeet	748,000.00	825,600.00
tblLandUse	LotAcreage	26.97	23.94
tblLandUse	LotAcreage	0.23	0.00
tblLandUse	LotAcreage	16.83	0.00
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	CO2IntensityFactor	641.35	380
tblProjectCharacteristics	OperationalYear	2018	2022
tblVehicleTrips	ST_TR	6.39	5.75
tblVehicleTrips	ST_TR	42.04	30.42
tblVehicleTrips	SU_TR	5.86	5.27
tblVehicleTrips	SU_TR	20.43	14.71
tblVehicleTrips	WD_TR	6.65	6.00
tblVehicleTrips	WD_TR	44.32	32.07

tblWoodstoves	NumberCatalytic	20.50	0.00
tblWoodstoves	NumberNoncatalytic	20.50	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

## 2.0 Emissions Summary

### 2.2 Overall Operational Unmitigated Operational

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	6.1055	0.1985	7.6834	1.1100e-003	0.0511	0.0511	0.0511	0.0511	0.0511	0.0511	0.0000	140.4262	140.4262	0.0145	2.3500e-003	141.4887
Energy	0.0613	0.5240	0.2235	3.3400e-003	0.0424	0.0424	0.0424	0.0424	0.0424	0.0424	0.0000	2.3655319	2.3655319	0.1459	0.0389	2,380.7686
Mobile	1.4547	6.1444	16.7950	0.0579	5.3301	0.0492	5.3793	1.4268	0.0460	1.4727	0.0000	5,298.5649	5,298.5649	0.1796	0.0000	5,303.0557
Waste					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	97.8843	0.0000	97.8843	5.7848	0.0000	242.5041
Water					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	21.4268	88.6696	110.0964	2.2075	0.0534	181.1867
<b>Total</b>	<b>7.6215</b>	<b>6.8669</b>	<b>24.7019</b>	<b>0.0623</b>	<b>5.3301</b>	<b>0.1426</b>	<b>5.4728</b>	<b>1.4268</b>	<b>0.1394</b>	<b>1.5662</b>	<b>119.3111</b>	<b>7,893.1926</b>	<b>8,012.5037</b>	<b>8.3323</b>	<b>0.0946</b>	<b>8,249.0037</b>

### Mitigated Operational

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	6.1055	0.1985	7.6834	1.1100e-003	0.0511	0.0511	0.0511	0.0511	0.0511	0.0511	0.0000	140.4262	140.4262	0.0145	2.3500e-003	141.4887

Energy	0.0490	0.4190	0.1787	2.6700e-003	0.0339	0.0339	0.0339	0.0339	0.0339	0.0000	2,066.9306	2,066.9306	0.1300	0.0339	2,080.2742
Mobile	1.4547	6.1444	16.7950	0.0579	5.3301	1.4268	0.0460	1.4727	0.0000	5,298.5649	5,298.5649	0.1796	0.0000	5,303.0557	
Waste							0.0000	0.0000	0.0000	97.8843	97.8843	5.7848	0.0000	242.5041	
Water							0.0000	0.0000	0.0000	21.4268	110.0964	2.2075	0.0534	181.1867	
<b>Total</b>	<b>7.6092</b>	<b>6.7619</b>	<b>24.6571</b>	<b>0.0616</b>	<b>5.3301</b>	<b>1.4268</b>	<b>0.1309</b>	<b>1.5577</b>	<b>119.3111</b>	<b>7,594.5913</b>	<b>7,713.9024</b>	<b>8.3165</b>	<b>0.0896</b>	<b>7,948.5093</b>	

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.16	1.53	0.18	1.08	0.00	5.95	0.16	0.00	6.09	0.54	0.00	3.78	3.73	0.19	5.31	3.64

#### 4.0 Operational Detail - Mobile

#### 4.1 Mitigation Measures Mobile

Category	tons/yr															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	1.4547	6.1444	16.7950	0.0579	5.3301	0.0492	5.3793	1.4268	0.0460	1.4727	0.0000	5,298.5649	5,298.5649	0.1796	0.0000	5,303.0557
Unmitigated	1.4547	6.1444	16.7950	0.0579	5.3301	0.0492	5.3793	1.4268	0.0460	1.4727	0.0000	5,298.5649	5,298.5649	0.1796	0.0000	5,303.0557

#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT



Category	tons/yr										MT/yr								
	Electricity Mitigated	Electricity Unmitigated	Natural Gas Mitigated	Natural Gas Unmitigated	CO	NOx	SO2	PM10 Fugitive	PM10 Exhaust	PM10 Total	PM2.5 Fugitive	PM2.5 Exhaust	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
								0.0000	0.0000		0.0000	0.0000	0.0000	1,581.7502	1,581.7502	0.1207	0.0250	1,592.2106	
								0.0000	0.0000		0.0000	0.0000	0.0000	1,758.7815	1,758.7815	0.1342	0.0278	1,770.4126	
	0.0490	0.1787	2.6700e-003		0.1787		0.0339	0.0339	0.0339		0.0339	0.0339	0.0000	485.1804	485.1804	9.3000e-003	8.8900e-003	488.0636	
	0.0613	0.2235	3.3400e-003		0.2235		0.0424	0.0424	0.0424		0.0424	0.0424	0.0000	606.7504	606.7504	0.0116	0.0111	610.3560	

## 5.2 Energy by Land Use - Natural Gas

### Unmitigated

Land Use	Natural Gas Use kBTU/yr	tons/yr										MT/yr							
		ROG	NOx	CO	SO2	PM10 Fugitive	PM10 Exhaust	PM10 Total	PM2.5 Fugitive	PM2.5 Exhaust	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e		
Apartments Mid Rise	1.13458e+007	0.0612	0.5228	0.2225	3.3400e-003	0.0423	0.0423	0.0423	0.0423	0.0423	0.0423	0.0423	0.0000	605.4549	605.4549	0.0116	0.0111	609.0528	
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Parking Lot	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Strip Mall	24276	1.3000e-004	1.1900e-003	1.0000e-003	1.0000e-005	9.0000e-005	9.0000e-005	9.0000e-005	9.0000e-005	9.0000e-005	9.0000e-005	9.0000e-005	0.0000	1.2955	1.2955	2.0000e-005	2.0000e-005	1.3032	
<b>Total</b>		<b>0.0613</b>	<b>0.5240</b>	<b>0.2235</b>	<b>3.3500e-003</b>	<b>0.0424</b>	<b>0.0424</b>	<b>0.0424</b>	<b>0.0424</b>	<b>0.0424</b>	<b>0.0424</b>	<b>0.0424</b>	<b>0.0000</b>	<b>606.7504</b>	<b>606.7504</b>	<b>0.0116</b>	<b>0.0111</b>	<b>610.3560</b>	

### Mitigated

Land Use	Natural Gas Use kBTU/yr	tons/yr										MT/yr							
		ROG	NOx	CO	SO2	PM10 Fugitive	PM10 Exhaust	PM10 Total	PM2.5 Fugitive	PM2.5 Exhaust	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e		
Apartments Mid Rise	9.07446e+006	0.0489	0.4181	0.1779	2.6700e-003	0.0338	0.0338	0.0338	0.0338	0.0338	0.0338	0.0338	0.0000	484.2477	484.2477	9.2800e-003	8.8800e-003	487.1253	
<b>Total</b>		<b>0.0489</b>	<b>0.4181</b>	<b>0.1779</b>	<b>2.6700e-003</b>	<b>0.0338</b>	<b>0.0338</b>	<b>0.0338</b>	<b>0.0338</b>	<b>0.0338</b>	<b>0.0338</b>	<b>0.0338</b>	<b>0.0000</b>	<b>484.2477</b>	<b>484.2477</b>	<b>9.2800e-003</b>	<b>8.8800e-003</b>	<b>487.1253</b>	

Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	17478.7	9.0000e-005	8.6000e-004	7.2000e-004	1.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	0.9383
Total		0.0490	0.4190	0.1787	2.6800e-003	0.0339	0.0339	0.0339	0.0339	0.0339	0.0339	0.0339	0.0339	0.0339	0.0339	488.0636

### 5.3 Energy by Land Use - Electricity

#### Unmitigated

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
					MT/yr
Apartments Mid Rise	4.52124e+006	779.3047	0.0595	0.0123	784.4584
Enclosed Parking with Elevator	5.56454e+006	959.1332	0.0732	0.0151	965.4761
Parking Lot	6336	1.0921	8.0000e-005	2.0000e-005	1.0993
Strip Mall	111690	19.2515	1.4700e-003	3.0000e-004	19.3788
<b>Total</b>		<b>1,768.7815</b>	<b>0.1342</b>	<b>0.0278</b>	<b>1,770.4126</b>

#### Mitigated

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
					MT/yr
Apartments Mid Rise	4.40861e+006	759.8897	0.0580	0.0120	764.9150
Enclosed Parking with Elevator	4.65837e+006	802.9396	0.0613	0.0127	808.2496





Hearth	0.0129	0.1105	0.0470	7.1000e-004	8.9300e-003	8.9300e-003	8.9300e-003	0.0000	127.9603	127.9603	2.4500e-003	2.3500e-003	128.7207
Landscaping	0.2318	0.0880	7.6364	4.0000e-004	0.0422	0.0422	0.0422	0.0000	12.4659	12.4659	0.0121	0.0000	12.7680
<b>Total</b>	<b>6.1055</b>	<b>0.1985</b>	<b>7.6834</b>	<b>1.1100e-003</b>	<b>0.0511</b>	<b>0.0511</b>	<b>0.0511</b>	<b>0.0000</b>	<b>140.4262</b>	<b>140.4262</b>	<b>0.0145</b>	<b>2.3500e-003</b>	<b>141.4887</b>

**Mitigated**

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MT/yr															
Architectural Coating	0.8852					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.9755					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0129	0.1105	0.0470	7.1000e-004	8.9300e-003	8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.9603	127.9603	2.4500e-003	2.3500e-003	128.7207
Landscaping	0.2318	0.0880	7.6364	4.0000e-004	0.0422	0.0422	0.0422		0.0422	0.0422	0.0000	12.4659	12.4659	0.0121	0.0000	12.7680
<b>Total</b>	<b>6.1055</b>	<b>0.1985</b>	<b>7.6834</b>	<b>1.1100e-003</b>	<b>0.0511</b>	<b>0.0511</b>	<b>0.0511</b>		<b>0.0511</b>	<b>0.0511</b>	<b>0.0000</b>	<b>140.4262</b>	<b>140.4262</b>	<b>0.0145</b>	<b>2.3500e-003</b>	<b>141.4887</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Category	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	110.0964	2.2075	0.0534	181.1867

Unmitigated	110.0964	2.2075	0.0534	181.1867
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## 7.2 Water by Land Use

### Unmitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Apartments Mid Rise	66.7829 / 42.1022	108.8727	2.1828	0.0528	179.1677
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.75554 / 0.463073	1.2237	0.0247	6.0000e-004	2.0190
<b>Total</b>		<b>110.0964</b>	<b>2.2075</b>	<b>0.0534</b>	<b>181.1867</b>

### Mitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Apartments Mid Rise	66.7829 / 42.1022	108.8727	2.1828	0.0528	179.1677
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.75554 / 0.463073	1.2237	0.0247	6.0000e-004	2.0190

Total	110.0564	2.2075	0.0534	181.1867
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## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

#### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	97.8843	5.7848	0.0000	242.5041
Unmitigated	97.8843	5.7848	0.0000	242.5041

### 8.2 Waste by Land Use

#### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	471.5	95.7102	5.6563	0.0000	237.1181
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	10.71	2.1740	0.1285	0.0000	5.3861

Total	97.8843	5.7848	0.0000	242.5042
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**Mitigated**

Land Use	Waste Disposed tons	Total CO2	CH4	N2O	CO2e
		MT/yr			
Apartment's Mid Rise	471.5	95.7102	5.6563	0.0000	237.1181
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	10.71	2.1740	0.1285	0.0000	5.3861
<b>Total</b>		<b>97.8843</b>	<b>5.7848</b>	<b>0.0000</b>	<b>242.5042</b>

phase1+Phase2+Phase3+Phase4 operational emissions - Santa Clara County, Annual

**phase1+Phase2+Phase3+Phase4 operational emissions**  
**Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	2,775.00	Space	0.00	1,182,709.00	0
Parking Lot	22.00	Space	0.20	8,800.00	0
Apartments Mid Rise	1,600.00	Dwelling Unit	21.20	1,754,209.00	4576
Strip Mall	10.20	1000sqft	0.00	10,200.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2024

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	380	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - PG&E used to represent SVP

Land Use - Summation of applicant provided number of unit gives 1585. Hence, conservative analysis

Construction Phase - only operational emissions modeled

Off-road Equipment - only operational emissions modeled

Vehicle Trips - trip rates provided by TIA

Woodstoves - No wood burning

Energy Use - Title 24, 2013 values

Energy Mitigation - title 24, 2016 values cam into effect on 1st January 2017

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	1.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	240.00	2,775.00
tblFireplaces	NumberNoFireplace	64.00	0.00
tblFireplaces	NumberWood	272.00	0.00
tblLandUse	BuildingSpaceSquareFeet	1,110,000.00	1,182,709.00
tblLandUse	BuildingSpaceSquareFeet	1,600,000.00	1,754,209.00
tblLandUse	LandUseSquareFeet	1,110,000.00	1,182,709.00
tblLandUse	LandUseSquareFeet	1,600,000.00	1,754,209.00
tblLandUse	LotAcreage	24.97	0.00
tblLandUse	LotAcreage	42.11	21.20
tblLandUse	LotAcreage	0.23	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	380
tblProjectCharacteristics	OperationalYear	2018	2024
tblVehicleTrips	ST_TR	6.39	5.75
tblVehicleTrips	ST_TR	42.04	30.42
tblVehicleTrips	SU_TR	5.86	5.27
tblVehicleTrips	SU_TR	20.43	14.71
tblVehicleTrips	WD_TR	6.65	6.00
tblVehicleTrips	WD_TR	44.32	32.07
tblWoodstoves	NumberCatalytic	32.00	0.00
tblWoodstoves	NumberNoncatalytic	32.00	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

## 2.0 Emissions Summary

### 2.2 Overall Operational Unmitigated Operational

Category	ROG	NOx	CO	SO2	tons/yr				MT/yr				CO2e				
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2		Total CO2	CH4	N2O	
Area	8.6274	0.4362	12.0282	2.5400e-003		0.0901	0.0901	0.0901	0.0901	0.0901	0.0901	0.0000	365.8853	365.8853	0.0254	6.3500e-003	368.4127
Energy	0.0956	0.8173	0.3483	5.2200e-003		0.0661	0.0661	0.0661	0.0661	0.0661	0.0661	0.0000	3.557459	3.557459	0.2174	0.0586	3.580.350
Mobile	1.9253	7.4161	22.4523	0.0833	8.2232	0.0650	8.2883	2.2010	0.0605	2.2616	2.2616	0.0000	7.638.456	7.638.456	0.2376	0.0000	7.644.396
Waste						0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	151.5754	0.0000	151.5754	8.9579	0.0000	375.5216
Water						0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	33.3123	137.8591	171.1714	3.4320	0.0830	281.6954
<b>Total</b>	<b>10.6483</b>	<b>8.6695</b>	<b>34.8288</b>	<b>0.0911</b>	<b>8.2232</b>	<b>0.2212</b>	<b>8.4444</b>	<b>2.2010</b>	<b>0.2167</b>	<b>2.4177</b>	<b>2.4177</b>	<b>184.8877</b>	<b>11,699.65</b>	<b>11,884.547</b>	<b>12.8702</b>	<b>0.1479</b>	<b>12,250.37</b>
													<b>97</b>	<b>4</b>			<b>62</b>

### Mitigated Operational

Category	ROG	NOx	CO	SO2	tons/yr				MT/yr				CO2e				
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2		Total CO2	CH4	N2O	
Area	8.6274	0.4362	12.0282	2.5400e-003		0.0901	0.0901	0.0901	0.0901	0.0901	0.0901	0.0000	365.8853	365.8853	0.0254	6.3500e-003	368.4127
Energy	0.0765	0.6536	0.2785	4.1700e-003		0.0528	0.0528	0.0528	0.0528	0.0528	0.0528	0.0000	3.112.411	3.112.411	0.1943	0.0511	3.132.486
Mobile	1.9253	7.4161	22.4523	0.0833	8.2232	0.0650	8.2883	2.2010	0.0605	2.2616	2.2616	0.0000	7.638.456	7.638.456	0.2376	0.0000	7.644.396
Waste						0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	151.5754	0.0000	151.5754	8.9579	0.0000	375.5216
Water						0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	33.3123	137.8591	171.1714	3.4320	0.0830	281.6954
<b>Total</b>	<b>10.6483</b>	<b>8.6695</b>	<b>34.8288</b>	<b>0.0911</b>	<b>8.2232</b>	<b>0.2212</b>	<b>8.4444</b>	<b>2.2010</b>	<b>0.2167</b>	<b>2.4177</b>	<b>2.4177</b>	<b>184.8877</b>	<b>11,699.65</b>	<b>11,884.547</b>	<b>12.8702</b>	<b>0.1479</b>	<b>12,250.37</b>
													<b>97</b>	<b>4</b>			<b>62</b>





### 4.3 Trip Type Information

Land Use	Miles				Trip %				Trip Purpose %			
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3			
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0			
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0			
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15			

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Parking Lot	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Apartments Mid Rise	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Strip Mall	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704

### 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.355.579	2.355.5799	0.1798	0.0372	2.371.157
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.611.063	2.611.0632	0.1993	0.0412	2.628.330
												2				6

NaturalGas Mitigated	0.0765	0.6536	0.2785	4.1700e-003	0.0528	0.0528	0.0528	0.0528	0.0000	756.8315	756.8315	0.0145	0.0139	761.3290
NaturalGas Unmitigated	0.0956	0.8173	0.3483	5.2200e-003	0.0661	0.0661	0.0661	0.0661	0.0000	946.3958	946.3958	0.0181	0.0174	952.0198

## 5.2 Energy by Land Use - NaturalGas

### Unmitigated

Land Use	NaturalGas s Use	ROG	NOx	CO	SO2	tons/yr			PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
						Fugitive PM10	Exhaust PM10	PM10 Total										
Apartment s Rise	1.77105e+007	0.0955	0.8161	0.3473	5.2100e-003	0.0660	0.0660	0.0660	0.0660	0.0000	0.0660	0.0660	0.0000	945.1004	945.1004	0.0181	0.0173	950.7166
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	24276	1.3000e-004	1.1900e-003	1.0000e-003	1.0000e-005	9.0000e-005	9.0000e-005	9.0000e-005	9.0000e-005	9.0000e-005	9.0000e-005	9.0000e-005	0.0000	1.2955	1.2955	2.0000e-005	2.0000e-005	1.3032
<b>Total</b>		<b>0.0956</b>	<b>0.8173</b>	<b>0.3483</b>	<b>5.2200e-003</b>	<b>0.0661</b>	<b>0.0661</b>	<b>0.0661</b>	<b>0.0661</b>	<b>0.0661</b>	<b>0.0661</b>	<b>0.0661</b>	<b>0.0000</b>	<b>946.3958</b>	<b>946.3958</b>	<b>0.0181</b>	<b>0.0174</b>	<b>952.0198</b>

### Mitigated

Land Use	NaturalGas s Use	ROG	NOx	CO	SO2	tons/yr			PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
						Fugitive PM10	Exhaust PM10	PM10 Total										
Apartment s Rise	1.4165e+007	0.0764	0.6527	0.2778	4.1700e-003	0.0528	0.0528	0.0528	0.0528	0.0000	0.0528	0.0528	0.0000	755.8988	755.8988	0.0145	0.0139	760.3907
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	17478.7	9.0000e-005	8.6000e-004	7.2000e-004	1.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	7.0000e-005	0.0000	0.9327	0.9327	2.0000e-005	2.0000e-005	0.9383
<b>Total</b>		<b>0.0764</b>	<b>0.6527</b>	<b>0.2778</b>	<b>4.1700e-003</b>	<b>0.0528</b>	<b>0.0528</b>	<b>0.0528</b>	<b>0.0528</b>	<b>0.0528</b>	<b>0.0528</b>	<b>0.0528</b>	<b>0.0000</b>	<b>755.8988</b>	<b>755.8988</b>	<b>0.0145</b>	<b>0.0139</b>	<b>760.3907</b>

Total	0.0765	0.6536	0.2785	4.1800e-003	0.0528	0.0528	0.0528	0.0000	756.8315	756.8315	0.0145	0.0139	761.3290
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### 5.3 Energy by Land Use - Electricity

#### Unmitigated

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
Apartment Mid Rise	7.05755e+006	1,216.4757	0.0928	0.0192	1,224.5204
Enclosed Parking with Elevator	7.97146e+006	1,374.0013	0.1049	0.0217	1,383.0878
Parking Lot	7744	1.3348	1.0000e-004	2.0000e-005	1.3436
Strip Mall	111690	19.2515	1.4700e-003	3.0000e-004	19.3788
<b>Total</b>		<b>2,611.0632</b>	<b>0.1993</b>	<b>0.0412</b>	<b>2,628.3306</b>

#### Mitigated

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
Apartment Mid Rise	6.88173e+006	1,186.1693	0.0905	0.0187	1,194.0136
Enclosed Parking with Elevator	6.67332e+006	1,150.2470	0.0878	0.0182	1,157.8538
Parking Lot	7744	1.3348	1.0000e-004	2.0000e-005	1.3436
Strip Mall	103436	17.8288	1.3600e-003	2.8000e-004	17.9467
<b>Total</b>		<b>2,355.5799</b>	<b>0.1798</b>	<b>0.0372</b>	<b>2,371.1577</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Mitigated	8.6274	0.4362	12.0282	2.5400e-003	0.0901	0.0901	0.0901	0.0901	0.0901	0.0901	0.0000	365.8853	365.8853	0.0254	6.3500e-003	368.4127
Unmitigated	8.6274	0.4362	12.0282	2.5400e-003	0.0901	0.0901	0.0901	0.0901	0.0901	0.0901	0.0000	365.8853	365.8853	0.0254	6.3500e-003	368.4127

### 6.2 Area by SubCategory

#### Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Architectural Coating	1.2650				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.9679				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0350	0.2991	0.1273	1.9100e-003	0.0242	0.0242	0.0242	0.0242	0.0242	0.0242	0.0000	346.4290	346.4290	6.6400e-003	6.3500e-003	348.4877
Landscaping	0.3594	0.1371	11.9009	6.3000e-004	0.0659	0.0659	0.0659	0.0659	0.0659	0.0659	0.0000	19.4562	19.4562	0.0188	0.0000	19.9250
<b>Total</b>	<b>8.6274</b>	<b>0.4362</b>	<b>12.0282</b>	<b>2.5400e-003</b>	<b>0.0901</b>	<b>0.0901</b>	<b>0.0901</b>	<b>0.0901</b>	<b>0.0901</b>	<b>0.0901</b>	<b>0.0000</b>	<b>365.8853</b>	<b>365.8853</b>	<b>0.0254</b>	<b>6.3500e-003</b>	<b>368.4127</b>

**Mitigated**

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Architectural Coating	1.2650					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.9679					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0350	0.2991	0.1273	1.9100e-003		0.0242	0.0242		0.0242	0.0242	0.0000	346.4290	346.4290	6.6400e-003	6.3500e-003	348.4877
Landscaping	0.3594	0.1371	11.9009	6.3000e-004		0.0659	0.0659		0.0659	0.0659	0.0000	19.4562	19.4562	0.0188	0.0000	19.9250
<b>Total</b>	<b>8.6274</b>	<b>0.4362</b>	<b>12.0282</b>	<b>2.5400e-003</b>		<b>0.0901</b>	<b>0.0901</b>		<b>0.0901</b>	<b>0.0901</b>	<b>0.0000</b>	<b>365.8853</b>	<b>365.8853</b>	<b>0.0254</b>	<b>6.3500e-003</b>	<b>368.4127</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Category	Total CO2	CH4	N2O	CO2e
MT/yr				
Mitigated	171.1714	3.4320	0.0830	281.6954
Unmitigated	171.1714	3.4320	0.0830	281.6954

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	104.246 / 65.7206	169.9476	3.4073	0.0824	279.6764
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.75554 / 0.463073	1.2237	0.0247	6.0000e-004	2.0190
<b>Total</b>		<b>171.1714</b>	<b>3.4320</b>	<b>0.0830</b>	<b>281.6954</b>

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	104.246 / 65.7206	169.9476	3.4073	0.0824	279.6764
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.75554 / 0.463073	1.2237	0.0247	6.0000e-004	2.0190
<b>Total</b>		<b>171.1714</b>	<b>3.4320</b>	<b>0.0830</b>	<b>281.6954</b>

**8.0 Waste Detail**

**8.1 Mitigation Measures Waste**

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	151.5754	8.9579	0.0000	375.5216
Unmitigated	151.5754	8.9579	0.0000	375.5216

**8.2 Waste by Land Use**

**Unmitigated**

Land Use	Waste Disposed tons	Total CO2	CH4	N2O	CO2e
		MT/yr			
Apartments Mid Rise	736	149.4014	8.8294	0.0000	370.1355
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	10.71	2.1740	0.1285	0.0000	5.3861
<b>Total</b>		<b>151.5754</b>	<b>8.9579</b>	<b>0.0000</b>	<b>375.5216</b>

**Mitigated**



Land Use	Waste Disposed tons	Total CO2			CO2e
		CH4	N2O	CO2e	
MT/yr					
Apartments Mid Rise	736	149.4014	8.8294	0.0000	370.1355
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	10.71	2.1740	0.1285	0.0000	5.3861
<b>Total</b>		<b>151.5754</b>	<b>8.9579</b>	<b>0.0000</b>	<b>375.5216</b>

Coleman Browkaw Gateway Crossings Full Build Out - Santa Clara County, Annual

**Coleman Browkaw Gateway Crossings Full Build Out**  
 Santa Clara County, Annual

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	3,114.00	Space	0.00	1,245,600.00	0
Parking Lot	21.00	Space	0.00	8,400.00	0
Hotel	250.00	Room	0.00	363,000.00	0
Apartments Mid Rise	1,600.00	Dwelling Unit	24.00	1,600,000.00	4576
Strip Mall	15.00	1000sqft	0.00	15,000.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2026

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	380	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - Using future SVP Rate

Land Use - Summed up number of parking spaces

Construction Phase - Operation Run Only

Off-road Equipment -

Grading -

Vehicle Trips - Apts = 6.00/5.75/5.27, Hotel = 7.93/7.95/5.77, Retail = 32.07/30.42/14.71

Woodstoves - No wood -> 512 nat gas

Off-road Equipment -

Energy Use - Titlw 24, 2013 values

Stationary Sources - Emergency Generators and Fire Pumps - operated for emergency purposes only

Energy Mitigation - title 24, 2016 values came into effect on January 1st, 2017

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	1.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	240.00	512.00
tblFireplaces	NumberWood	272.00	0.00
tblLandUse	LotAcreage	28.03	0.00
tblLandUse	LotAcreage	0.19	0.00
tblLandUse	LotAcreage	8.33	0.00
tblLandUse	LotAcreage	42.11	24.00
tblLandUse	LotAcreage	0.34	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	380
tblProjectCharacteristics	OperationalYear	2018	2026
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	135.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	6.39	5.75
tblVehicleTrips	ST_TR	8.19	7.95
tblVehicleTrips	ST_TR	42.04	30.42
tblVehicleTrips	SU_TR	5.86	5.27
tblVehicleTrips	SU_TR	5.95	5.77
tblVehicleTrips	SU_TR	20.43	14.71
tblVehicleTrips	WD_TR	6.65	6.00
tblVehicleTrips	WD_TR	8.17	7.93
tblVehicleTrips	WD_TR	44.32	32.07

tblWoodstoves	WoodstoveWoodMass	582.40	0.00
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## 2.0 Emissions Summary

### 2.2 Overall Operational Unmitigated Operational

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	9.5214	0.1922	11.9236	9.8000e-004	0.0704	0.0704	0.0704	0.0704	0.0704	0.0704	0.0000	83.3845	83.3845	0.0200	1.1700e-003	84.2329
Energy	0.1828	1.6098	1.0140	9.9700e-003	0.1263	0.1263	0.1263	0.1263	0.1263	0.1263	0.0000	4,948.3271	4,948.3271	0.2742	0.0827	4,979.8378
Mobile	2.0762	8.2728	23.6092	0.0919	9.6498	0.0721	9.7219	2.5827	0.0671	2.6497	0.0000	8,442.1764	8,442.1764	0.2566	0.0000	8,448.5921
Stationary	5.5400e-003	0.0155	0.0201	3.0000e-005	8.1000e-004	8.1000e-004	8.1000e-004	8.1000e-004	8.1000e-004	8.1000e-004	0.0000	2.5704	2.5704	3.6000e-004	0.0000	2.5794
Waste					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	180.3839	0.0000	180.3839	10.6604	0.0000	446.8934
Water					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	35.4370	144.6619	180.0989	3.6508	0.0882	297.6593
<b>Total</b>	<b>11.7869</b>	<b>10.0904</b>	<b>36.5669</b>	<b>0.1029</b>	<b>9.6498</b>	<b>0.2697</b>	<b>9.9194</b>	<b>2.5827</b>	<b>0.2646</b>	<b>2.8473</b>	<b>215.8209</b>	<b>13,621.1203</b>	<b>13,836.9411</b>	<b>14.8623</b>	<b>0.1721</b>	<b>14,259.7948</b>

### Mitigated Operational

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	9.5214	0.1922	11.9236	9.8000e-004	0.0704	0.0704	0.0704	0.0704	0.0704	0.0704	0.0000	83.3845	83.3845	0.0200	1.1700e-003	84.2329



Apartments Mid Rise	9,600.00	9,200.00	8432.00	21,654,878	21,654,878
Enclosed Parking Structure	0.00	0.00	0.00		
Hotel	1,982.50	1,987.50	1442.50	3,621,404	3,621,404
Parking Lot	0.00	0.00	0.00		
Strip Mall	481.05	456.30	220.65	678,099	678,099
Total	12,063.55	11,643.80	10,095.15	25,954,380	25,954,380

### 4.3 Trip Type Information

Land Use	Miles					Trip %					Trip Purpose %				
	H-W or C-W	H-S or C-C	H-O or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-C	H-O or C-NW	H-O or C-NW	Primary	Diverted	Pass-by			
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3						
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0						
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4						
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0						
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15						

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.618126	0.034987	0.181060	0.102744	0.012808	0.005030	0.012887	0.022139	0.002195	0.001502	0.005204	0.000638	0.000681
Parking Lot	0.618126	0.034987	0.181060	0.102744	0.012808	0.005030	0.012887	0.022139	0.002195	0.001502	0.005204	0.000638	0.000681
Hotel	0.618126	0.034987	0.181060	0.102744	0.012808	0.005030	0.012887	0.022139	0.002195	0.001502	0.005204	0.000638	0.000681
Apartments Mid Rise	0.618126	0.034987	0.181060	0.102744	0.012808	0.005030	0.012887	0.022139	0.002195	0.001502	0.005204	0.000638	0.000681
Strip Mall	0.618126	0.034987	0.181060	0.102744	0.012808	0.005030	0.012887	0.022139	0.002195	0.001502	0.005204	0.000638	0.000681

### 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Category	tons/yr										MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,833.3984	0.2162	0.0447	2,852.136
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,139.1156	0.2396	0.0496	3,159.875
Natural Gas Mitigated	0.1419	1.2479	0.7777	7.7400e-003	0.0980	0.0980	0.0980	0.0980	0.0980	0.0000	1,403.8223	1,403.8223	0.0269	0.0257	1,412.164
Natural Gas Unmitigated	0.1828	1.6098	1.0140	9.9700e-003	0.1263	0.1263	0.1263	0.1263	0.1263	0.0000	1,809.2114	1,809.2114	0.0347	0.0332	1,819.962

## 5.2 Energy by Land Use - Natural Gas

### Unmitigated

Land Use	tons/yr										MT/yr						
	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartment Rise	1.77105e+007	0.0955	0.8161	0.3473	5.2100e-003		0.0660	0.0660		0.0660	0.0660	0.0000	945.1004	945.1004	0.0181	0.0173	950.7166
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	1.61571e+007	0.0871	0.7920	0.6653	4.7500e-003		0.0602	0.0602		0.0602	0.0602	0.0000	862.2060	862.2060	0.0165	0.0158	867.3297
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	35700	1.9000e-004	1.7500e-003	1.4700e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9051	1.9051	4.0000e-005	3.0000e-005	1.9164
<b>Total</b>		<b>0.1828</b>	<b>1.6098</b>	<b>1.0140</b>	<b>9.9700e-003</b>		<b>0.1263</b>	<b>0.1263</b>		<b>0.1263</b>	<b>0.1263</b>	<b>0.0000</b>	<b>1,809.2115</b>	<b>1,809.2115</b>	<b>0.0347</b>	<b>0.0332</b>	<b>1,819.9627</b>

### Mitigated

Land Use	tons/yr										MT/yr						
	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartment Rise	1.77105e+007	0.0955	0.8161	0.3473	5.2100e-003		0.0660	0.0660		0.0660	0.0660	0.0000	945.1004	945.1004	0.0181	0.0173	950.7166
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	1.61571e+007	0.0871	0.7920	0.6653	4.7500e-003		0.0602	0.0602		0.0602	0.0602	0.0000	862.2060	862.2060	0.0165	0.0158	867.3297
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	35700	1.9000e-004	1.7500e-003	1.4700e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9051	1.9051	4.0000e-005	3.0000e-005	1.9164
<b>Total</b>		<b>0.1828</b>	<b>1.6098</b>	<b>1.0140</b>	<b>9.9700e-003</b>		<b>0.1263</b>	<b>0.1263</b>		<b>0.1263</b>	<b>0.1263</b>	<b>0.0000</b>	<b>1,809.2115</b>	<b>1,809.2115</b>	<b>0.0347</b>	<b>0.0332</b>	<b>1,819.9627</b>

Land Use	kBTU/yr	tons/yr										MT/yr						
		0.0764	0.6527	0.2778	4.1700e-003	0.0528	0.0528	0.0528	0.0000	755.8988	755.8988	0.0145	0.0139	760.3907				
Apartments Mid Rise	1.4165e+07																	
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	1.21159e+007	0.0653	0.5939	0.4989	3.5600e-003	0.0451	0.0451	0.0451	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0124	0.0119	650.3940	650.3940
Parking Lot	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	25704	1.4000e-004	1.2600e-003	1.0600e-003	1.0000e-005	1.0000e-004	1.0000e-004	1.0000e-004	1.0000e-004	1.0000e-004	1.0000e-004	1.0000e-004	1.0000e-004	1.0000e-004	1.3717	1.3717	3.0000e-005	1.3798
<b>Total</b>		<b>0.1419</b>	<b>1.2479</b>	<b>0.7777</b>	<b>7.7400e-003</b>	<b>0.0980</b>	<b>0.0980</b>	<b>0.0980</b>	<b>0.0980</b>	<b>0.0980</b>	<b>0.0980</b>	<b>0.0000</b>	<b>1,403.8223</b>	<b>1,403.822</b>	<b>0.0269</b>	<b>0.0257</b>	<b>1,412.1645</b>	<b>1,412.1645</b>

### 5.3 Energy by Land Use - Electricity

#### Unmitigated

Land Use	Electricity Use kWh/yr	MT/yr				
		Total CO2	CH4	N2O	CO2e	CO2e
Apartments Mid Rise	7.05755e+006	1.216.4757	0.0928	0.0192	1.224.520	4
Enclosed Parking Structure	8.15868e+006	1.406.2717	0.1073	0.0222	1.415.571	6
Hotel	2.82414e+006	486.7832	0.0372	7.6900e-003	490.0024	
Parking Lot	7392	1.2741	1.0000e-004	2.0000e-005	1.2826	
Strip Mall	164250	28.3110	2.1600e-003	4.5000e-004	28.4982	
<b>Total</b>		<b>3,139.1156</b>	<b>0.2396</b>	<b>0.0496</b>	<b>3,159.875</b>	<b>1</b>

#### Mitigated



Land Use	Electricity Use	Total CO2	CH4	N2O	CO2e
	kWh/yr	MT/yr			
Apartments Mid Rise	6.88173e+006	1,186.1693	0.0905	0.0187	1,194.0136
Enclosed Parking Structure	6.79151e+006	1,170.6192	0.0893	0.0185	1,178.3607
Hotel	2.60561e+006	449.1169	0.0343	7.0900e-003	452.0870
Parking Lot	7392	1.2741	1.0000e-004	2.0000e-005	1.2826
Strip Mall	152112	26.2188	2.0000e-003	4.1000e-004	26.3922
<b>Total</b>		<b>2,833.3984</b>	<b>0.2162</b>	<b>0.0447</b>	<b>2,852.1361</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Mitigated	9.5214	0.1922	11.9236	9.8000e-004	0.0704	0.0704	0.0704	0.0704	0.0704	0.0704	0.0000	83.3845	83.3845	0.0200	1.1700e-003	84.2329
Unmitigated	9.5214	0.1922	11.9236	9.8000e-004	0.0704	0.0704	0.0704	0.0704	0.0704	0.0704	0.0000	83.3845	83.3845	0.0200	1.1700e-003	84.2329

### 6.2 Area by SubCategory

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Architectural Coating	1.3496				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.8061				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.4600e-003	0.0552	0.0235	3.5000e-004	4.4600e-003	4.4600e-003	4.4600e-003	4.4600e-003	4.4600e-003	4.4600e-003	0.0000	63.9177	63.9177	1.2300e-003	1.1700e-003	64.2976
Landscaping	0.3592	0.1370	11.9001	6.3000e-004	0.0660	0.0660	0.0660	0.0660	0.0660	0.0660	0.0000	19.4668	19.4668	0.0187	0.0000	19.9354
<b>Total</b>	<b>9.5214</b>	<b>0.1922</b>	<b>11.9236</b>	<b>9.8000e-004</b>	<b>0.0704</b>	<b>0.0704</b>	<b>0.0704</b>	<b>0.0704</b>	<b>0.0704</b>	<b>0.0704</b>	<b>0.0000</b>	<b>83.3845</b>	<b>83.3845</b>	<b>0.0200</b>	<b>1.1700e-003</b>	<b>84.2329</b>

**Mitigated**

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Architectural Coating	1.3496				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.8061				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.4600e-003	0.0552	0.0235	3.5000e-004	4.4600e-003	4.4600e-003	4.4600e-003	4.4600e-003	4.4600e-003	4.4600e-003	0.0000	63.9177	63.9177	1.2300e-003	1.1700e-003	64.2976
Landscaping	0.3592	0.1370	11.9001	6.3000e-004	0.0660	0.0660	0.0660	0.0660	0.0660	0.0660	0.0000	19.4668	19.4668	0.0187	0.0000	19.9354
<b>Total</b>	<b>9.5214</b>	<b>0.1922</b>	<b>11.9236</b>	<b>9.8000e-004</b>	<b>0.0704</b>	<b>0.0704</b>	<b>0.0704</b>	<b>0.0704</b>	<b>0.0704</b>	<b>0.0704</b>	<b>0.0000</b>	<b>83.3845</b>	<b>83.3845</b>	<b>0.0200</b>	<b>1.1700e-003</b>	<b>84.2329</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	180.0989	3.6508	0.0882	297.6593
Unmitigated	180.0989	3.6508	0.0882	297.6593

## 7.2 Water by Land Use

### Unmitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Apartments Mid Rise	104.2467 65.7206	169.9476	3.4073	0.0824	279.6764
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	6.341697 0.704632	8.3517	0.2071	4.9800e-003	15.0138
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.111097 0.680989	1.7996	0.0363	8.8000e-004	2.9690
<b>Total</b>		<b>180.0989</b>	<b>3.6508</b>	<b>0.0882</b>	<b>297.6593</b>

### Mitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Apartments Mid Rise	104.2467 65.7206	169.9476	3.4073	0.0824	279.6764
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	6.341697 0.704632	8.3517	0.2071	4.9800e-003	15.0138
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.111097 0.680989	1.7996	0.0363	8.8000e-004	2.9690
<b>Total</b>		<b>180.0989</b>	<b>3.6508</b>	<b>0.0882</b>	<b>297.6593</b>

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

#### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	180.3839	10.6604	0.0000	446.8934
Unmitigated	180.3839	10.6604	0.0000	446.8934

### 8.2 Waste by Land Use

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	736	149.4014	8.8294	0.0000	370.1355
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Hotel	136.88	27.7854	1.6421	0.0000	68.8372
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	15.75	3.1971	0.1889	0.0000	7.9207
<b>Total</b>		<b>180.3839</b>	<b>10.6604</b>	<b>0.0000</b>	<b>446.8934</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	736	149.4014	8.8294	0.0000	370.1355
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Hotel	136.88	27.7854	1.6421	0.0000	68.8372
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	15.75	3.1971	0.1889	0.0000	7.9207
<b>Total</b>		<b>180.3839</b>	<b>10.6604</b>	<b>0.0000</b>	<b>446.8934</b>

Gateway Crossings - Existing Use - Santa Clara County, Annual

**Gateway Crossings - Existing Use**  
Santa Clara County, Annual

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	272.84	1000sqft	24.00	272,840.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2026

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	380	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - Use SVP

Land Use - Existing site

Construction Phase - Operational only

Off-road Equipment -

Vehicle Trips -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	PhaseEndDate	5/11/2017	5/12/2017

tbILandUse	LotAcreage	6.26	24.00
tbIProjectCharacteristics	CO2IntensityFactor	641.35	380
tbIProjectCharacteristics	OperationalYear	2018	2026

## 2.0 Emissions Summary

### 2.2 Overall Operational Unmitigated Operational

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	1.2081	2.0000e-005	2.5000e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	4.8800e-003	4.8800e-003	1.0000e-005	0.0000	5.1900e-003
Energy	0.0390	0.3542	0.2975	2.1200e-003	0.0269	0.0269	0.0269	0.0269	0.0269	0.0269	0.0000	781.5196	781.5196	0.0376	0.0133	786.4293
Mobile	0.3140	1.2695	3.7545	0.0149	1.5821	0.0116	1.5937	0.4234	0.0108	0.4342	0.0000	1.371.671 <sup>2</sup>	1.371.6712	0.0409	0.0000	1,372.692 <sup>3</sup>
Waste					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.2080	0.0000	4.2080	0.2487	0.0000	10.4252
Water					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	42.5608	125.1209	167.6817	4.3810	0.1052	308.5532
<b>Total</b>	<b>1.5611</b>	<b>1.6236</b>	<b>4.0545</b>	<b>0.0171</b>	<b>1.5821</b>	<b>0.0386</b>	<b>1.6206</b>	<b>0.4234</b>	<b>0.0377</b>	<b>0.4612</b>	<b>46.7688</b>	<b>2,278.316<sup>5</sup></b>	<b>2,325.0853</b>	<b>4.7081</b>	<b>0.1185</b>	<b>2,478.105<sup>2</sup></b>

### Mitigated Operational

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	1.2081	2.0000e-005	2.5000e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	4.8800e-003	4.8800e-003	1.0000e-005	0.0000	5.1900e-003

Energy	0.0390	0.3542	0.2975	2.1200e-003	0.0269	0.0269	0.0269	0.0269	0.0269	0.0269	0.0000	781.5196	781.5196	0.0376	0.0133	786.4293
Mobile	0.3140	1.2695	3.7545	0.0149	1.5821	0.4234	0.4234	0.4342	0.4342	0.4342	0.0000	1,371.6712	1,371.6712	0.0409	0.0000	1,372.6923
Waste					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.2080	4.2080	0.2487	0.0000	10.4252	
Water					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	42.5608	167.6817	4.3810	0.1052	308.5532	
<b>Total</b>	<b>1.5611</b>	<b>1.6236</b>	<b>4.0545</b>	<b>0.0171</b>	<b>1.5821</b>	<b>0.4234</b>	<b>0.4234</b>	<b>0.4612</b>	<b>0.4612</b>	<b>0.4612</b>	<b>46.7688</b>	<b>2,325.0853</b>	<b>4.7081</b>	<b>0.1185</b>	<b>2,478.1052</b>	

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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

#### 4.0 Operational Detail - Mobile

#### 4.1 Mitigation Measures Mobile

Category	tons/yr															MIT/yr		
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Mitigated	0.3140	1.2695	3.7545	0.0149	1.5821	0.0116	1.5937	0.4234	0.0108	0.4342	0.0000	1,371.6712	1,371.6712	0.0409	0.0000	1,372.6923		
Unmitigated	0.3140	1.2695	3.7545	0.0149	1.5821	0.0116	1.5937	0.4234	0.0108	0.4342	0.0000	1,371.6712	1,371.6712	0.0409	0.0000	1,372.6923		

#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate		Unmitigated Annual VMT		Mitigated Annual VMT	
	Weekday	Saturday	Sunday	Saturday	Sunday	Sunday



Research & Development	2,212.73	518.40	302.85	4,255,218	4,255,218
Total	2,212.73	518.40	302.85	4,255,218	4,255,218

### 4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.618126	0.034987	0.181060	0.102744	0.012808	0.005030	0.012887	0.022139	0.002195	0.001502	0.0005204	0.000638	0.000681

### 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Category	tons/yr										MT/yr						
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	395.9766	395.9766	0.0302		6.2500e-003	398.5952
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	395.9766	395.9766	0.0302		6.2500e-003	398.5952
Natural Gas Mitigated	0.0390	0.3542	0.2975	2.1200e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.5430	385.5430	7.3900e-003		7.0700e-003	387.8341
Natural Gas Unmitigated	0.0390	0.3542	0.2975	2.1200e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.5430	385.5430	7.3900e-003		7.0700e-003	387.8341

### 5.2 Energy by Land Use - Natural Gas Unmitigated

Land Use	NaturalGas Use kBTU/yr	ROG	NOx	CO	SO2	Fugitive PM10 tons/yr	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Research & Development	7.2248e+06	0.0390	0.3542	0.2975	2.1200e-003	0.0269	0.0269	0.0269	0.0269	0.0269	0.0269	0.0000	385.5430	385.5430	7.3900e-003	7.0700e-003	387.8341
<b>Total</b>		<b>0.0390</b>	<b>0.3542</b>	<b>0.2975</b>	<b>2.1200e-003</b>	<b>0.0269</b>	<b>0.0269</b>	<b>0.0269</b>	<b>0.0269</b>	<b>0.0269</b>	<b>0.0269</b>	<b>0.0000</b>	<b>385.5430</b>	<b>385.5430</b>	<b>7.3900e-003</b>	<b>7.0700e-003</b>	<b>387.8341</b>

**Mitigated**

Land Use	NaturalGas Use kBTU/yr	ROG	NOx	CO	SO2	Fugitive PM10 tons/yr	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Research & Development	7.2248e+06	0.0390	0.3542	0.2975	2.1200e-003	0.0269	0.0269	0.0269	0.0269	0.0269	0.0269	0.0000	385.5430	385.5430	7.3900e-003	7.0700e-003	387.8341
<b>Total</b>		<b>0.0390</b>	<b>0.3542</b>	<b>0.2975</b>	<b>2.1200e-003</b>	<b>0.0269</b>	<b>0.0269</b>	<b>0.0269</b>	<b>0.0269</b>	<b>0.0269</b>	<b>0.0269</b>	<b>0.0000</b>	<b>385.5430</b>	<b>385.5430</b>	<b>7.3900e-003</b>	<b>7.0700e-003</b>	<b>387.8341</b>

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
Research & Development	2.29731e+006	395.9766	0.0302	6.2500e-003	398.5952

Total	395.9766	0.0302	6.2500e-003	398.5952
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**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Research & Development	2.29731e+006	395.9766	0.0302	6.2500e-003	398.5952
<b>Total</b>		<b>395.9766</b>	<b>0.0302</b>	<b>6.2500e-003</b>	<b>398.5952</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

Category	tons/yr										MT/yr					
	ROG	NOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	1.2081	2.0000e-005	2.5000e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	4.8800e-003	4.8800e-003	1.0000e-005	0.0000	5.1900e-003
Unmitigated	1.2081	2.0000e-005	2.5000e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	4.8800e-003	4.8800e-003	1.0000e-005	0.0000	5.1900e-003

## 6.2 Area by SubCategory

### Unmitigated

SubCategory	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	0.1423					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0656					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.3000e-004	2.0000e-005	2.5000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.8800e-003	4.8800e-003	1.0000e-005	0.0000	5.1900e-003
<b>Total</b>	<b>1.2081</b>	<b>2.0000e-005</b>	<b>2.5000e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.8800e-003</b>	<b>4.8800e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.1900e-003</b>

### Mitigated

SubCategory	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	0.1423					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0656					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.3000e-004	2.0000e-005	2.5000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.8800e-003	4.8800e-003	1.0000e-005	0.0000	5.1900e-003
<b>Total</b>	<b>1.2081</b>	<b>2.0000e-005</b>	<b>2.5000e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.8800e-003</b>	<b>4.8800e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.1900e-003</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	167.6817	4.3810	0.1052	308.5532
Unmitigated	167.6817	4.3810	0.1052	308.5532

## 7.2 Water by Land Use

### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Research & Development	134.154 / 0	167.6817	4.3810	0.1052	308.5532
<b>Total</b>		<b>167.6817</b>	<b>4.3810</b>	<b>0.1052</b>	<b>308.5532</b>

### Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

Research & Development	134.154 / 0	167.6817	4.3810	0.1052	308.5532
<b>Total</b>		<b>167.6817</b>	<b>4.3810</b>	<b>0.1052</b>	<b>308.5532</b>

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

#### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.2080	0.2487	0.0000	10.4252
Unmitigated	4.2080	0.2487	0.0000	10.4252

### 8.2 Waste by Land Use

#### Unmitigated

Waste Disposed	Total CO2	CH4	N2O	CO2e	
Land Use	tons				
	MT/yr				
Research & Development	20.73	4.2080	0.2487	0.0000	10.4252
<b>Total</b>		<b>4.2080</b>	<b>0.2487</b>	<b>0.0000</b>	<b>10.4252</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Research & Development	20.73	4.2080	0.2487	0.0000	10.4252
<b>Total</b>		<b>4.2080</b>	<b>0.2487</b>	<b>0.0000</b>	<b>10.4252</b>

Ex. General Plan, Permitted Uses, Operational - Santa Clara County, Annual

**Ex. General Plan, Permitted Uses, Operational  
Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1,025.04	1000sqft	23.53	1,025,040.00	0
Apartments Mid Rise	1,278.00	Dwelling Unit	33.63	1,278,000.00	3655

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4	Operational Year		Operational Year	2026
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	380	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

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

- Project Characteristics - SVP current CO2 emission factor
- Land Use - Existing GP permitted uses - based on 9/12/17 email (Amy Wang, DJP)
- Construction Phase - operational only run
- Off-road Equipment - operational only
- Woodstoves - No wood based fireplaces or stoves
- Energy Use - Title 24, 2013 values used
- Energy Mitigation - Title 24, 216 values came into effect on 1st january 2017
- Vehicle Trips - Adjusted to traffic with internal and transit adjustments - 5.87,5.64 ,5.17 10.13, 2.26, 0.96

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CO2IntensityFactor	641.35	380
tblProjectCharacteristics	OperationalYear	2018	2026
tblVehicleTrips	ST_TR	6.39	5.64
tblVehicleTrips	ST_TR	2.46	2.26
tblVehicleTrips	SU_TR	5.86	5.17
tblVehicleTrips	SU_TR	1.05	0.96
tblVehicleTrips	WD_TR	6.65	5.87
tblVehicleTrips	WD_TR	11.03	10.13

**2.0 Emissions Summary**

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	13.6629	0.1772	13.5501	8.5800e-003		0.6332	0.6332		0.6332	0.6332	58.2636	39.4506	97.7143	0.1085	3.8200e-003	101.5662
Energy	0.1672	1.4784	0.9717	9.1200e-003		0.1155	0.1155		0.1155	0.1155	0.0000	5,845.5045	5,845.5045	0.3515	0.0965	5,883.0520





Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

#### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.618126	0.034987	0.181060	0.102744	0.012808	0.005030	0.012887	0.022139	0.002195	0.001502	0.005204	0.000638	0.000681
Apartments Mid Rise	0.618126	0.034987	0.181060	0.102744	0.012808	0.005030	0.012887	0.022139	0.002195	0.001502	0.005204	0.000638	0.000681

#### 5.0 Energy Detail

Historical Energy Use: N

#### 5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,849.9702	3,849.9702	0.2938	0.0608	3,875.4307
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4,190.7900	4,190.7900	0.3198	0.0662	4,218.5044
NaturalGas Mitigated	0.1266	1.1173	0.7225	6.9000e-003		0.0875	0.0875		0.0875	0.0875	0.0000	1,252.5604	1,252.5604	0.0240	0.0230	1,260.0037
NaturalGas Unmitigated	0.1672	1.4784	0.9717	9.1200e-003		0.1155	0.1155		0.1155	0.1155	0.0000	1,654.7145	1,654.7145	0.0317	0.0303	1,664.5477

#### 5.2 Energy by Land Use - NaturalGas

##### Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.41463e+007	0.0763	0.6518	0.2774	4.1600e-003		0.0527	0.0527		0.0527	0.0527	0.0000	754.8989	754.8989	0.0145	0.0138	759.3849
General Office Building	1.68619e+007	0.0909	0.8266	0.6943	4.9600e-003		0.0628	0.0628		0.0628	0.0628	0.0000	899.8156	899.8156	0.0173	0.0165	905.1628
<b>Total</b>		<b>0.1672</b>	<b>1.4784</b>	<b>0.9717</b>	<b>9.1200e-003</b>		<b>0.1155</b>	<b>0.1155</b>		<b>0.1155</b>	<b>0.1155</b>	<b>0.0000</b>	<b>1,654.7145</b>	<b>1,654.7145</b>	<b>0.0317</b>	<b>0.0303</b>	<b>1,664.5477</b>

##### Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.13143e+007	0.0610	0.5214	0.2219	3.3300e-003		0.0422	0.0422		0.0422	0.0422	0.0000	603.7742	603.7742	0.0116	0.0111	607.3621
General Office Building	1.21578e+007	0.0656	0.5960	0.5006	3.5800e-003		0.0453	0.0453		0.0453	0.0453	0.0000	648.7862	648.7862	0.0124	0.0119	652.6416
<b>Total</b>		<b>0.1266</b>	<b>1.1173</b>	<b>0.7225</b>	<b>6.9100e-003</b>		<b>0.0874</b>	<b>0.0874</b>		<b>0.0874</b>	<b>0.0874</b>	<b>0.0000</b>	<b>1,252.5604</b>	<b>1,252.5604</b>	<b>0.0240</b>	<b>0.0230</b>	<b>1,260.0037</b>

#### 5.3 Energy by Land Use - Electricity

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.63722e+006	971.6599	0.0742	0.0153	978.0857
General Office Building	1.86762e+007	3,219.1301	0.2457	0.0508	3,240.4187
<b>Total</b>		<b>4,190.7900</b>	<b>0.3198</b>	<b>0.0662</b>	<b>4,218.5043</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.49678e+006	947.4527	0.0723	0.0150	953.7184
General Office Building	1.68394e+007	2,902.5175	0.2215	0.0458	2,921.7123
<b>Total</b>		<b>3,849.9702</b>	<b>0.2938</b>	<b>0.0608</b>	<b>3,875.4307</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	13.6629	0.1772	13.5501	8.5800e-003		0.6332	0.6332		0.6332	0.6332	58.2636	39.4506	97.7143	0.1085	3.8200e-003	101.5662
Unmitigated	13.6629	0.1772	13.5501	8.5800e-003		0.6332	0.6332		0.6332	0.6332	58.2636	39.4506	97.7143	0.1085	3.8200e-003	101.5662

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.4341					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.9945					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.9487	0.0679	4.0604	8.0800e-003		0.5805	0.5805		0.5805	0.5805	58.2636	23.9317	82.1953	0.0936	3.8200e-003	85.6750
Landscaping	0.2855	0.1093	9.4897	5.0000e-004		0.0526	0.0526		0.0526	0.0526	0.0000	15.5189	15.5189	0.0149	0.0000	15.8912

<b>Total</b>	<b>13.6629</b>	<b>0.1772</b>	<b>13.5501</b>	<b>8.5800e-003</b>		<b>0.6332</b>	<b>0.6332</b>		<b>0.6332</b>	<b>0.6332</b>	<b>58.2636</b>	<b>39.4506</b>	<b>97.7143</b>	<b>0.1085</b>	<b>3.8200e-003</b>	<b>101.5662</b>
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**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	tons/yr										MT/yr						
Architectural Coating	1.4341					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.9945					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.9487	0.0679	4.0604	8.0800e-003		0.5805	0.5805		0.5805	0.5805	58.2636	23.9317	82.1953	0.0936	3.8200e-003	85.6750	
Landscaping	0.2855	0.1093	9.4897	5.0000e-004		0.0526	0.0526		0.0526	0.0526	0.0000	15.5189	15.5189	0.0149	0.0000	15.8912	
<b>Total</b>	<b>13.6629</b>	<b>0.1772</b>	<b>13.5501</b>	<b>8.5800e-003</b>		<b>0.6332</b>	<b>0.6332</b>		<b>0.6332</b>	<b>0.6332</b>	<b>58.2636</b>	<b>39.4506</b>	<b>97.7143</b>	<b>0.1085</b>	<b>3.8200e-003</b>	<b>101.5662</b>	

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	430.8244	8.6762	0.2097	710.2229
Unmitigated	430.8244	8.6762	0.2097	710.2229

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	83.2668 / 52.4943	135.7457	2.7216	0.0658	223.3916
General Office Building	182.184 / 111.661	295.0787	5.9546	0.1439	486.8313
<b>Total</b>		<b>430.8244</b>	<b>8.6762</b>	<b>0.2097</b>	<b>710.2229</b>

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

Apartments Mid Rise	83,2668 / 52,4943	135,7457	2,7216	0,0658	223,3916
General Office Building	182,184 / 111,661	295,0787	5,9546	0,1439	486,8313
<b>Total</b>		<b>430,8244</b>	<b>8,6762</b>	<b>0,2097</b>	<b>710,2229</b>

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

#### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	312,8436	18,4885	0,0000	775,0567
Unmitigated	312,8436	18,4885	0,0000	775,0567

### 8.2 Waste by Land Use

#### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	587,88	119,3343	7,0525	0,0000	295,6457
General Office Building	953,29	193,5093	11,4361	0,0000	479,4110
<b>Total</b>		<b>312,8436</b>	<b>18,4885</b>	<b>0,0000</b>	<b>775,0567</b>

#### Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	587,88	119,3343	7,0525	0,0000	295,6457
General Office Building	953,29	193,5093	11,4361	0,0000	479,4110
<b>Total</b>		<b>312,8436</b>	<b>18,4885</b>	<b>0,0000</b>	<b>775,0567</b>

## 9.0 Operational Offroad

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

### Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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Gateway Crossings Phase 2, TAC Emissions - Santa Clara County, Annual

**Gateway Crossings Phase 2, TAC Emissions**  
**Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	625.00	Space	0.00	256,900.00	0
Parking Lot	7.00	Space	0.06	2,800.00	0
Apartments Mid Rise	332.00	Dwelling Unit	21.34	414,000.00	950

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2021

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MMWhr)	380	CH4 Intensity (lb/MMWhr)	0.029	N2O Intensity (lb/MMWhr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - Utility company is silicon valley power-CO2 factor from climate action plan 2020

Land Use - Applicant provided land use sizes

Construction Phase - Applicant provided construction schedule

Off-road Equipment - Applicant provided construction information

Off-road Equipment - Applicant provided construction information

Off-road Equipment - Applicant provided information

Off-road Equipment - Applicant provided construction information

Off-road Equipment - Applicant provided information

Off-road Equipment - Applicant provided information

Trips and VMT - Default trip numbers used

800 cy pf paving

800/16\*2=100

Demolition -

Grading - Soil export during grading: 19,496 cy

Vehicle Trips - From project traffic report

Woodstoves - No wood based fireplaces or woodstoves

Energy Use - title 24, 2013

Construction Off-road Equipment Mitigation - Best Management Practices

Tier 4

Energy Mitigation - title 24 106 values came into effect on 1st January, 2017

Table Name	Column Name	Default Value	New Value
tbiConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tbiConstEquipMitigation	DPF	No Change	Level 3
tbiConstEquipMitigation	DPF	No Change	Level 3
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00



tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	49.80	332.00
tblFireplaces	NumberNoFireplace	13.28	0.00
tblFireplaces	NumberWood	56.44	0.00
tblGrading	MaterialExported	0.00	19,496.00
tblLandUse	BuildingSpaceSquareFeet	250,000.00	256,900.00
tblLandUse	BuildingSpaceSquareFeet	332,000.00	414,000.00

tblLandUse	LandUseSquareFeet	250,000.00	256,900.00
tblLandUse	LandUseSquareFeet	332,000.00	414,000.00
tblLandUse	LotAcreage	5.63	0.00
tblLandUse	LotAcreage	8.74	21.34
tblProjectCharacteristics	CO2IntensityFactor	641.35	380
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblVehicleTrips	ST_TR	6.39	5.83
tblVehicleTrips	SU_TR	5.86	5.35
tblVehicleTrips	WD_TR	6.65	6.07
tblWoodstoves	NumberCatalytic	6.64	0.00
tblWoodstoves	NumberNoncatalytic	6.64	0.00



Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-1-2019	9-30-2019	2.9165	0.4231
2	10-1-2019	12-31-2019	1.7947	0.5240
3	1-1-2020	3-31-2020	2.0658	1.4736
4	4-1-2020	6-30-2020	2.1882	1.7973
		Highest	2.9165	1.7973

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/1/2019	7/26/2019	5	20	
2	Grading	Grading	7/29/2019	9/20/2019	5	40	
3	Trenching	Trenching	9/2/2019	9/27/2019	5	20	
4	Building Construction	Building Construction	9/23/2019	2/7/2020	5	100	
5	Architectural Coating	Architectural Coating	2/3/2020	6/19/2020	5	100	
6	Paving	Paving	4/1/2020	5/26/2020	5	40	

Acres of Grading (Site Preparation Phase): 80

Acres of Grading (Grading Phase): 160

Acres of Paving: 0.06

Residential Indoor: 838,350; Residential Outdoor: 279,450; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	3	8.00	367	0.48
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37

Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	3	8.00	367	0.48
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	2	8.00	158	0.38
Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Trenching	Skid Steer Loaders	1	8.00	65	0.37
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	3	8.00	63	0.31
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Other Construction Equipment	3	8.00	172	0.42
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Architectural Coating	Aerial Lifts	1	8.00	63	0.31
Architectural Coating	Air Compressors	2	3.20	78	0.48
Architectural Coating	Cranes	1	4.00	231	0.29
Architectural Coating	Forklifts	1	8.00	89	0.20
Paving	Cement and Mortar Mixers	1	4.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46

Paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37
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### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	23.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	13	33.00	0.00	2,437.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Trenching	7	18.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	17	348.00	78.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	5	70.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	100.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

### **3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

### **3.2 Site Preparation - 2019**

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Fugitive Dust					0.1629	0.0000	0.1629	0.0708	0.0000	0.0708	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0676	0.7951	0.4012	8.1000e-004	0.0333	0.0333	0.0333	0.0306	0.0306	0.0306	0.0000	72.7354	72.7354	0.0230	0.0000	73.3108

Total	0.0676	0.7951	0.4012	8.1000e-004	0.1629	0.0333	0.1961	0.0708	0.0306	0.1014	0.0000	72.7354	72.7354	0.0230	0.0000	73.3108
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**Unmitigated Construction Off-Site**

Category	tons/yr										MIT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.3000e-004	1.7000e-003	0.0000	1.7000e-004	0.0000	1.7000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1929	0.1929	1.0000e-005	0.0000	0.1932
<b>Total</b>	<b>2.8000e-004</b>	<b>1.3000e-004</b>	<b>1.7000e-003</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.1929</b>	<b>0.1929</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1932</b>

**Mitigated Construction On-Site**

Category	tons/yr										MIT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.0733	0.0000	0.0733	0.0159	0.0000	0.0159	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.0536	0.3803	8.1000e-004		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	72.7354	72.7354	0.0230	0.0000	73.3107
<b>Total</b>	<b>0.0102</b>	<b>0.0536</b>	<b>0.3803</b>	<b>8.1000e-004</b>	<b>0.0733</b>	<b>1.1400e-003</b>	<b>0.0744</b>	<b>0.0159</b>	<b>1.1400e-003</b>	<b>0.0171</b>	<b>0.0000</b>	<b>72.7354</b>	<b>72.7354</b>	<b>0.0230</b>	<b>0.0000</b>	<b>73.3107</b>

**Mitigated Construction Off-Site**





Hauling	2.9600e-003	0.1305	0.0218	1.6000e-004	1.0600e-003	1.7000e-004	1.2200e-003	2.9000e-004	1.6000e-004	4.5000e-004	0.0000	15.7860	15.7860	1.8400e-003	0.0000	15.8321
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1000e-004	3.8000e-004	4.8800e-003	1.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.3000e-004	1.0000e-005	1.4000e-004	0.0000	0.5536	0.5536	3.0000e-005	0.0000	0.5543
<b>Total</b>	<b>3.7700e-003</b>	<b>0.1309</b>	<b>0.0267</b>	<b>1.7000e-004</b>	<b>1.5500e-003</b>	<b>1.8000e-004</b>	<b>1.7200e-003</b>	<b>4.2000e-004</b>	<b>1.7000e-004</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>16.3396</b>	<b>16.3396</b>	<b>1.8700e-003</b>	<b>0.0000</b>	<b>16.3864</b>

### Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Fugitive Dust					0.0929	0.0000	0.0929	0.0170	0.0000	0.0170	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0234	0.1432	0.9585	1.8100e-003	2.6000e-003	2.6000e-003	2.6000e-003	2.6000e-003	2.6000e-003	2.6000e-003	0.0000	162.6680	162.6680	0.0515	0.0000	163.9546
<b>Total</b>	<b>0.0234</b>	<b>0.1432</b>	<b>0.9585</b>	<b>1.8100e-003</b>	<b>0.0929</b>	<b>2.6000e-003</b>	<b>0.0955</b>	<b>0.0170</b>	<b>2.6000e-003</b>	<b>0.0196</b>	<b>0.0000</b>	<b>162.6680</b>	<b>162.6680</b>	<b>0.0515</b>	<b>0.0000</b>	<b>163.9546</b>

### Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Hauling	2.9600e-003	0.1305	0.0218	1.6000e-004	1.0600e-003	1.7000e-004	1.2200e-003	2.9000e-004	1.6000e-004	4.5000e-004	0.0000	15.7860	15.7860	1.8400e-003	0.0000	15.8321
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1000e-004	3.8000e-004	4.8800e-003	1.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.3000e-004	1.0000e-005	1.4000e-004	0.0000	0.5536	0.5536	3.0000e-005	0.0000	0.5543
<b>Total</b>	<b>3.7700e-003</b>	<b>0.1309</b>	<b>0.0267</b>	<b>1.7000e-004</b>	<b>1.5500e-003</b>	<b>1.8000e-004</b>	<b>1.7200e-003</b>	<b>4.2000e-004</b>	<b>1.7000e-004</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>16.3396</b>	<b>16.3396</b>	<b>1.8700e-003</b>	<b>0.0000</b>	<b>16.3864</b>

### 3.4 Trenching - 2019

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Off-Road	0.0145	0.1535	0.1712	2.5000e-004	8.6100e-003	8.6100e-003	8.6100e-003	7.9200e-003	7.9200e-003	7.9200e-003	0.0000	22.5930	22.5930	7.1500e-003	0.0000	22.7717
<b>Total</b>	<b>0.0145</b>	<b>0.1535</b>	<b>0.1712</b>	<b>2.5000e-004</b>	<b>8.6100e-003</b>	<b>8.6100e-003</b>	<b>8.6100e-003</b>	<b>7.9200e-003</b>	<b>7.9200e-003</b>	<b>7.9200e-003</b>	<b>0.0000</b>	<b>22.5930</b>	<b>22.5930</b>	<b>7.1500e-003</b>	<b>0.0000</b>	<b>22.7717</b>

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.0000e-004	1.3300e-003	0.0000	1.3000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1510	0.1510	1.0000e-005	0.0000	0.1512
<b>Total</b>	<b>2.2000e-004</b>	<b>1.0000e-004</b>	<b>1.3300e-003</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.1510</b>	<b>0.1510</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1512</b>

#### Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	3.3400e-003	0.0239	0.1904	2.5000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	0.0000	22.5930	22.5930	7.1500e-003	0.0000	22.7717
<b>Total</b>	<b>3.3400e-003</b>	<b>0.0239</b>	<b>0.1904</b>	<b>2.5000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>22.5930</b>	<b>22.5930</b>	<b>7.1500e-003</b>	<b>0.0000</b>	<b>22.7717</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.0000e-004	1.3300e-003	0.0000	1.3000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1510	0.1510	1.0000e-005	0.0000	0.1512
<b>Total</b>	<b>2.2000e-004</b>	<b>1.0000e-004</b>	<b>1.3300e-003</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.1510</b>	<b>0.1510</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1512</b>

**3.5 Building Construction - 2019**  
**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.1821	1.5595	1.2978	1.9900e-003	0.0871	0.0871	0.0871	0.0820	0.0820	0.0820	0.0000	172.1798	172.1798	0.0453	0.0000	173.3119

Total	0.1821	1.5595	1.2978	1.9900e-003	0.0871	0.0871	0.0820	0.0820	0.0000	172.1798	172.1798	0.0453	0.0000	173.3119
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**Unmitigated Construction Off-Site**

Category	tons/yr										MIT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.1200e-003	0.1977	0.0569	2.3000e-004	2.5900e-003	4.8000e-004	3.0800e-003	7.6000e-004	4.6000e-004	1.2200e-003	0.0000	22.5198	22.5198	2.4200e-003	0.0000	22.5803
Worker	0.0154	7.2700e-003	0.0925	1.2000e-004	9.3100e-003	1.3000e-004	9.4400e-003	2.4900e-003	1.2000e-004	2.6100e-003	0.0000	10.5088	10.5088	5.1000e-004	0.0000	10.5215
<b>Total</b>	<b>0.0215</b>	<b>0.2050</b>	<b>0.1495</b>	<b>3.5000e-004</b>	<b>0.0119</b>	<b>6.1000e-004</b>	<b>0.0125</b>	<b>3.2500e-003</b>	<b>5.8000e-004</b>	<b>3.8300e-003</b>	<b>0.0000</b>	<b>33.0286</b>	<b>33.0286</b>	<b>2.9300e-003</b>	<b>0.0000</b>	<b>33.1018</b>

**Mitigated Construction On-Site**

Category	tons/yr										MIT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0280	0.3213	1.3535	1.9900e-003		2.0800e-003	2.0800e-003		2.0800e-003	2.0800e-003	0.0000	172.1796	172.1796	0.0453	0.0000	173.3117
<b>Total</b>	<b>0.0280</b>	<b>0.3213</b>	<b>1.3535</b>	<b>1.9900e-003</b>		<b>2.0800e-003</b>	<b>2.0800e-003</b>		<b>2.0800e-003</b>	<b>2.0800e-003</b>	<b>0.0000</b>	<b>172.1796</b>	<b>172.1796</b>	<b>0.0453</b>	<b>0.0000</b>	<b>173.3117</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.1200e-003	0.1977	0.0569	2.3000e-004	2.5900e-003	4.8000e-004	3.0800e-003	7.6000e-004	4.6000e-004	1.2200e-003	0.0000	22.5198	22.5198	2.4200e-003	0.0000	22.5803
Worker	0.0154	7.2700e-003	0.0925	1.2000e-004	9.3100e-003	1.3000e-004	9.4400e-003	2.4900e-003	1.2000e-004	2.6100e-003	0.0000	10.5088	10.5088	5.1000e-004	0.0000	10.5215
<b>Total</b>	<b>0.0215</b>	<b>0.2050</b>	<b>0.1495</b>	<b>3.5000e-004</b>	<b>0.0119</b>	<b>6.1000e-004</b>	<b>0.0125</b>	<b>3.2500e-003</b>	<b>5.8000e-004</b>	<b>3.8300e-003</b>	<b>0.0000</b>	<b>33.0286</b>	<b>33.0286</b>	<b>2.9300e-003</b>	<b>0.0000</b>	<b>33.1018</b>

### 3.5 Building Construction - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																
Off-Road	0.0645	0.5614	0.4975	7.8000e-004		0.0302	0.0302		0.0284	0.0284	0.0000	65.9021	65.9021	0.0174	0.0000	66.3358
<b>Total</b>	<b>0.0645</b>	<b>0.5614</b>	<b>0.4975</b>	<b>7.8000e-004</b>		<b>0.0302</b>	<b>0.0302</b>		<b>0.0284</b>	<b>0.0284</b>	<b>0.0000</b>	<b>65.9021</b>	<b>65.9021</b>	<b>0.0174</b>	<b>0.0000</b>	<b>66.3358</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																



**3.6 Architectural Coating - 2020**  
**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Archit. Coating	2.9685				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0334	0.3217	0.2643	4.6000e-004	0.0170	0.0170	0.0170	0.0161	0.0161	0.0161	0.0000	40.3814	40.3814	9.7100e-003	0.0000	40.6241
<b>Total</b>	<b>3.0019</b>	<b>0.3217</b>	<b>0.2643</b>	<b>4.6000e-004</b>	<b>0.0170</b>	<b>0.0170</b>	<b>0.0170</b>	<b>0.0161</b>	<b>0.0161</b>	<b>0.0161</b>	<b>0.0000</b>	<b>40.3814</b>	<b>40.3814</b>	<b>9.7100e-003</b>	<b>0.0000</b>	<b>40.6241</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8800e-003	1.7800e-003	0.0230	3.0000e-005	2.6000e-003	4.0000e-005	2.6400e-003	7.0000e-004	3.0000e-005	7.3000e-004	0.0000	2.8462	2.8462	1.2000e-004	0.0000	2.8493
<b>Total</b>	<b>3.8800e-003</b>	<b>1.7800e-003</b>	<b>0.0230</b>	<b>3.0000e-005</b>	<b>2.6000e-003</b>	<b>4.0000e-005</b>	<b>2.6400e-003</b>	<b>7.0000e-004</b>	<b>3.0000e-005</b>	<b>7.3000e-004</b>	<b>0.0000</b>	<b>2.8462</b>	<b>2.8462</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>2.8493</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MIT/yr																
Archit. Coating	2.9685					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3700e-003	0.0658	0.2845	4.6000e-004	7.1000e-004	7.1000e-004	7.1000e-004	7.1000e-004	7.1000e-004	7.1000e-004	0.0000	40.3813	40.3813	9.7100e-003	0.0000	40.6241
<b>Total</b>	<b>2.9749</b>	<b>0.0658</b>	<b>0.2845</b>	<b>4.6000e-004</b>	<b>7.1000e-004</b>	<b>7.1000e-004</b>	<b>7.1000e-004</b>	<b>7.1000e-004</b>	<b>7.1000e-004</b>	<b>7.1000e-004</b>	<b>0.0000</b>	<b>40.3813</b>	<b>40.3813</b>	<b>9.7100e-003</b>	<b>0.0000</b>	<b>40.6241</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MIT/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8800e-003	1.7800e-003	0.0230	3.0000e-005	2.6000e-003	4.0000e-005	2.6400e-003	7.0000e-004	3.0000e-005	7.3000e-004	0.0000	2.8462	2.8462	1.2000e-004	0.0000	2.8493
<b>Total</b>	<b>3.8800e-003</b>	<b>1.7800e-003</b>	<b>0.0230</b>	<b>3.0000e-005</b>	<b>2.6000e-003</b>	<b>4.0000e-005</b>	<b>2.6400e-003</b>	<b>7.0000e-004</b>	<b>3.0000e-005</b>	<b>7.3000e-004</b>	<b>0.0000</b>	<b>2.8462</b>	<b>2.8462</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>2.8493</b>

**3.7 Paving - 2020**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MIT/yr																
Off-Road	0.0258	0.2556	0.2500	3.7000e-004		0.0154	0.0154		0.0142	0.0142	0.0000	32.2913	32.2913	0.0103	0.0000	32.5499



Paving	8.0000e-005									0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0259</b>	<b>0.2536</b>	<b>0.2500</b>	<b>3.7000e-004</b>		<b>0.0154</b>	<b>0.0154</b>	<b>0.0142</b>	<b>0.0142</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr							
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Hauling	1.1000e-004	5.1600e-003	8.4000e-004	1.0000e-005	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.6494	0.6494	7.0000e-005	0.0000	0.6511		
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Worker	4.0000e-004	1.8000e-004	2.3600e-003	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2928	0.2928	1.0000e-005	0.0000	0.2931		
<b>Total</b>	<b>5.1000e-004</b>	<b>5.3400e-003</b>	<b>3.2000e-003</b>	<b>1.0000e-005</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>3.2000e-004</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.9422</b>	<b>0.9422</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.9442</b>		

**Mitigated Construction On-Site**

Category	tons/yr										MT/yr							
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Off-Road	5.0700e-003	0.0450	0.2745	3.7000e-004		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	32.2912	32.2912	0.0103	0.0000	32.5498		
Paving	8.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
<b>Total</b>	<b>5.1500e-003</b>	<b>0.0450</b>	<b>0.2745</b>	<b>3.7000e-004</b>		<b>5.9000e-004</b>	<b>5.9000e-004</b>		<b>5.9000e-004</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>32.2912</b>	<b>32.2912</b>	<b>0.0103</b>	<b>0.0000</b>	<b>32.5498</b>		

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
	MIT/yr															
Hauling	1.1000e-004	5.1600e-003	8.4000e-004	1.0000e-005	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.6494	0.6494	7.0000e-005	0.0000	0.6511
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	1.8000e-004	2.3600e-003	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2928	0.2928	1.0000e-005	0.0000	0.2931
<b>Total</b>	<b>5.1000e-004</b>	<b>5.3400e-003</b>	<b>3.2000e-003</b>	<b>1.0000e-005</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>3.2000e-004</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.9422</b>	<b>0.9422</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.9442</b>

Phase 3, TAC Emissions - Santa Clara County, Annual

**Phase 3, TAC Emissions  
Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	760.00	Space	0.00	311,800.00	0
Parking Lot	6.00	Space	0.05	2,400.00	0
Apartments Mid Rise	432.00	Dwelling Unit	21.35	522,000.00	1236
Strip Mall	4.90	1000sqft	0.00	4,900.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	58
<b>Climate Zone</b>	4	<b>Operational Year</b>	2022		

**Utility Company** Pacific Gas & Electric Company

<b>CO2 Intensity (lb/MMW/hr)</b>	380	<b>CH4 Intensity (lb/MMW/hr)</b>	0.029	<b>N2O Intensity (lb/MMW/hr)</b>	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - PG&E used to represent SVP. Current CO2 emission factor from Santa Clara Climate Action Plan 2020

Land Use - Applicant provided information on construction spreadsheet

Construction Phase - Applicant provided construction schedule

Off-road Equipment -

Off-road Equipment - Applicant provided information

Off-road Equipment - Applicant provided information

Off-road Equipment - Applicant provided information  
 Off-road Equipment - Applicant provided information  
 Off-road Equipment - Applicant provided information  
 Off-road Equipment - Applicant provided information  
 Trips and VMT - Paving trips= 800/16\*2  
 Grading - 20919 cy of soil hauled  
 Vehicle Trips - Project traffic report  
 Woodstoves - no woodstoves or wood based fireplaces  
 Energy Use - Title 24, 2013 values

Construction Off-road Equipment Mitigation - Best Management Practices  
 tier 4

Energy Mitigation - title 24,2016 came into effect on 1st january, 2017

Table Name	Column Name	Default Value	New Value
tbiConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00



tblLandUse	LandUseSquareFeet	432,000.00	522,000.00
tblLandUse	LotAcreage	6.84	0.00
tblLandUse	LotAcreage	11.37	21.35
tblLandUse	LotAcreage	0.11	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	380
tblProjectCharacteristics	OperationalYear	2018	2022
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblVehicleTrips	ST_TR	6.39	5.83
tblVehicleTrips	ST_TR	42.04	28.95
tblVehicleTrips	SU_TR	5.86	5.35
tblVehicleTrips	SU_TR	20.43	14.07
tblVehicleTrips	WD_TR	6.65	6.07

tbVehicleTrips	WD_TR	44.32	30.52
tbWoodstoves	NumberCatalytic	8.64	0.00
tbWoodstoves	NumberNoncatalytic	8.64	0.00
tbWoodstoves	WoodstoveWoodMass	582.40	0.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

Year	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2020	2.1046	4.7385	3.4186	6.2300e-003	0.3938	0.2119	0.6057	0.1530	0.1963	0.3493	0.0000	550.2118	550.2118	0.1489	0.0000	553.9354
2021	2.1559	0.4168	0.4435	6.5000e-004	2.1600e-003	0.0247	0.0269	5.8000e-004	0.0230	0.0236	0.0000	56.9115	56.9115	0.0156	0.0000	57.3011
<b>Maximum</b>	<b>2.1559</b>	<b>4.7385</b>	<b>3.4186</b>	<b>6.2300e-003</b>	<b>0.3938</b>	<b>0.2119</b>	<b>0.6057</b>	<b>0.1530</b>	<b>0.1963</b>	<b>0.3493</b>	<b>0.0000</b>	<b>550.2118</b>	<b>550.2118</b>	<b>0.1489</b>	<b>0.0000</b>	<b>553.9354</b>

#### Mitigated Construction

Year	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2020	1.7685	1.0184	3.5960	6.2300e-003	0.1907	9.6100e-003	0.2003	0.0396	9.5600e-003	0.0492	0.0000	550.2113	550.2113	0.1489	0.0000	553.9348
2021	2.1203	0.0876	0.4691	6.5000e-004	2.1600e-003	1.0100e-003	3.1700e-003	5.8000e-004	1.0100e-003	1.5900e-003	0.0000	56.9115	56.9115	0.0156	0.0000	57.3011
<b>Maximum</b>	<b>2.1203</b>	<b>1.0184</b>	<b>3.5960</b>	<b>6.2300e-003</b>	<b>0.1907</b>	<b>9.6100e-003</b>	<b>0.2003</b>	<b>0.0396</b>	<b>9.5600e-003</b>	<b>0.0492</b>	<b>0.0000</b>	<b>550.2113</b>	<b>550.2113</b>	<b>0.1489</b>	<b>0.0000</b>	<b>553.9348</b>

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
8.72	78.55	-5.26	0.00	51.30	95.51	67.84	73.84	95.18	86.39	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	4-1-2020	6-30-2020	2.7121	0.4043
2	7-1-2020	9-30-2020	1.5292	0.4644
3	10-1-2020	12-31-2020	2.5146	1.8668
4	1-1-2021	3-31-2021	2.5609	2.1970
		Highest	2.7121	2.1970

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2020	4/28/2020	5	20	
2	Grading	Grading	4/29/2020	6/23/2020	5	40	
3	Trenching	Trenching	6/1/2020	6/26/2020	5	20	
4	Building Construction	Building Construction	6/29/2020	11/13/2020	5	100	
5	Architectural Coating	Architectural Coating	11/2/2020	3/19/2021	5	100	
6	Paving	Paving	1/1/2021	2/25/2021	5	40	

Acres of Grading (Site Preparation Phase): 80

Acres of Grading (Grading Phase): 160

Acres of Paving: 0.05

Residential Indoor: 1,057,050; Residential Outdoor: 352,350; Non-Residential Indoor: 7,350; Non-Residential Outdoor: 2,450; Striped

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	2	8.00	97	0.37



Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	3	8.00	367	0.48
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	187	0.41
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	3	8.00	367	0.48
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	2	8.00	158	0.38
Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Trenching	Skid Steer Loaders	1	8.00	65	0.37
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	3	8.00	63	0.31
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Other Construction Equipment	3	8.00	172	0.42
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Aerial Lifts	1	8.00	63	0.31
Architectural Coating	Air Compressors	2	3.20	78	0.48
Architectural Coating	Cranes	1	4.00	81	0.73
Architectural Coating	Forklifts	1	8.00	89	0.20
Paving	Cement and Mortar Mixers	1	4.00	9	0.56
Paving	Pavers	1	8.00	130	0.42



Off-Road	0.0676	0.7247	0.3942	7.7000e-004	0.0344	0.0344	0.0317	0.0317	0.0000	67.9145	67.9145	0.0220	0.0000	68.4636
<b>Total</b>	<b>0.0676</b>	<b>0.7247</b>	<b>0.3942</b>	<b>7.7000e-004</b>	<b>0.0344</b>	<b>0.1973</b>	<b>0.0317</b>	<b>0.1024</b>	<b>0.0000</b>	<b>67.9145</b>	<b>67.9145</b>	<b>0.0220</b>	<b>0.0000</b>	<b>68.4636</b>

**Unmitigated Construction Off-Site**

Category	tons/yr															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.2000e-004	1.5100e-003	0.0000	1.7000e-004	0.0000	1.7000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1870	0.1870	1.0000e-005	0.0000	0.1872
<b>Total</b>	<b>2.5000e-004</b>	<b>1.2000e-004</b>	<b>1.5100e-003</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.1870</b>	<b>0.1870</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1872</b>

**Mitigated Construction On-Site**

Category	tons/yr															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.0733	0.0000	0.0733	0.0159	0.0000	0.0159	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7600e-003	0.0517	0.3740	7.7000e-004	1.2700e-003	1.2700e-003	1.2700e-003	1.2700e-003	1.2700e-003	1.2700e-003	0.0000	67.9144	67.9144	0.0220	0.0000	68.4636
<b>Total</b>	<b>9.7600e-003</b>	<b>0.0517</b>	<b>0.3740</b>	<b>7.7000e-004</b>	<b>0.0733</b>	<b>1.2700e-003</b>	<b>0.0746</b>	<b>0.0159</b>	<b>1.2700e-003</b>	<b>0.0172</b>	<b>0.0000</b>	<b>67.9144</b>	<b>67.9144</b>	<b>0.0220</b>	<b>0.0000</b>	<b>68.4636</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.2000e-004	1.5100e-003	0.0000	1.7000e-004	0.0000	1.7000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1870	0.1870	1.0000e-005	0.0000	0.1872
<b>Total</b>	<b>2.5000e-004</b>	<b>1.2000e-004</b>	<b>1.5100e-003</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.1870</b>	<b>0.1870</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1872</b>

### 3.3 Grading - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																
Fugitive Dust					0.2065	0.0000	0.2065	0.0755	0.0000	0.0755	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1295	1.4744	0.9223	1.8100e-003	0.0640	0.0640	0.0640	0.0589	0.0589	0.0589	0.0000	159.1077	159.1077	0.0515	0.0000	160.3941
<b>Total</b>	<b>0.1295</b>	<b>1.4744</b>	<b>0.9223</b>	<b>1.8100e-003</b>	<b>0.2065</b>	<b>0.0640</b>	<b>0.2705</b>	<b>0.0755</b>	<b>0.0589</b>	<b>0.1344</b>	<b>0.0000</b>	<b>159.1077</b>	<b>159.1077</b>	<b>0.0515</b>	<b>0.0000</b>	<b>160.3941</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																

Hauling	2.8400e-003	0.1349	0.0220	1.8000e-004	1.1300e-003	1.3000e-004	1.2600e-003	3.1000e-004	1.2000e-004	4.4000e-004	0.0000	16.9818	16.9818	1.8100e-003	0.0000	17.0270
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	3.3000e-004	4.3300e-003	1.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.3000e-004	1.0000e-005	1.4000e-004	0.0000	0.5367	0.5367	2.0000e-005	0.0000	0.5373
<b>Total</b>	<b>3.5700e-003</b>	<b>0.1352</b>	<b>0.0263</b>	<b>1.9000e-004</b>	<b>1.6200e-003</b>	<b>1.4000e-004</b>	<b>1.7600e-003</b>	<b>4.4000e-004</b>	<b>1.3000e-004</b>	<b>5.8000e-004</b>	<b>0.0000</b>	<b>17.5185</b>	<b>17.5185</b>	<b>1.8300e-003</b>	<b>0.0000</b>	<b>17.5643</b>

### Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Fugitive Dust					0.0929	0.0000	0.0929	0.0170	0.0000	0.0170	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0234	0.1432	0.9585	1.8100e-003	2.9700e-003	2.9700e-003	2.9700e-003	2.9700e-003	2.9700e-003	2.9700e-003	0.0000	159.1075	159.1075	0.0515	0.0000	160.3939
<b>Total</b>	<b>0.0234</b>	<b>0.1432</b>	<b>0.9585</b>	<b>1.8100e-003</b>	<b>0.0929</b>	<b>2.9700e-003</b>	<b>0.0959</b>	<b>0.0170</b>	<b>2.9700e-003</b>	<b>0.0200</b>	<b>0.0000</b>	<b>159.1075</b>	<b>159.1075</b>	<b>0.0515</b>	<b>0.0000</b>	<b>160.3939</b>

### Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Hauling	2.8400e-003	0.1349	0.0220	1.8000e-004	1.1300e-003	1.3000e-004	1.2600e-003	3.1000e-004	1.2000e-004	4.4000e-004	0.0000	16.9818	16.9818	1.8100e-003	0.0000	17.0270
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	3.3000e-004	4.3300e-003	1.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.3000e-004	1.0000e-005	1.4000e-004	0.0000	0.5367	0.5367	2.0000e-005	0.0000	0.5373
<b>Total</b>	<b>3.5700e-003</b>	<b>0.1352</b>	<b>0.0263</b>	<b>1.9000e-004</b>	<b>1.6200e-003</b>	<b>1.4000e-004</b>	<b>1.7600e-003</b>	<b>4.4000e-004</b>	<b>1.3000e-004</b>	<b>5.8000e-004</b>	<b>0.0000</b>	<b>17.5185</b>	<b>17.5185</b>	<b>1.8300e-003</b>	<b>0.0000</b>	<b>17.5643</b>

### 3.4 Trenching - 2020

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Off-Road	0.07133	0.1393	0.1706	2.5000e-004	7.5100e-003	7.5100e-003	7.5100e-003	6.9100e-003	6.9100e-003	6.9100e-003	0.0000	22.1026	22.1026	7.1500e-003	0.0000	22.2813
<b>Total</b>	<b>0.07133</b>	<b>0.1393</b>	<b>0.1706</b>	<b>2.5000e-004</b>	<b>7.5100e-003</b>	<b>7.5100e-003</b>	<b>7.5100e-003</b>	<b>6.9100e-003</b>	<b>6.9100e-003</b>	<b>6.9100e-003</b>	<b>0.0000</b>	<b>22.1026</b>	<b>22.1026</b>	<b>7.1500e-003</b>	<b>0.0000</b>	<b>22.2813</b>

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	9.0000e-005	1.1800e-003	0.0000	1.3000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1464	0.1464	1.0000e-005	0.0000	0.1465
<b>Total</b>	<b>2.0000e-004</b>	<b>9.0000e-005</b>	<b>1.1800e-003</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.1464</b>	<b>0.1464</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1465</b>

#### Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	3.3400e-003	0.0239	0.1904	2.5000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	4.1000e-004	0.0000	22.1026	22.1026	7.1500e-003	0.0000	22.2813
<b>Total</b>	<b>3.3400e-003</b>	<b>0.0239</b>	<b>0.1904</b>	<b>2.5000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>22.1026</b>	<b>22.1026</b>	<b>7.1500e-003</b>	<b>0.0000</b>	<b>22.2813</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	9.0000e-005	1.1800e-003	0.0000	1.3000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1464	0.1464	1.0000e-005	0.0000	0.1465
<b>Total</b>	<b>2.0000e-004</b>	<b>9.0000e-005</b>	<b>1.1800e-003</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.1464</b>	<b>0.1464</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1465</b>

**3.5 Building Construction - 2020**  
**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.1791	1.7692	1.5119	2.3800e-003		0.0949	0.0949		0.0684	0.0684	0.0000	207.1314	207.1314	0.0578	0.0000	208.5761

Total	0.1791	1.7692	1.5119	2.3800e-003	0.0949	0.0949	0.0884	0.0884	0.0000	207.1314	207.1314	0.0578	0.0000	208.5761
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**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.2500e-003	0.3277	0.0910	4.1000e-004	4.5300e-003	5.3000e-004	5.0600e-003	1.3200e-003	5.1000e-004	1.8300e-003	0.0000	39.3361	39.3361	3.8400e-003	0.0000	39.4320
Worker	0.0247	0.0113	0.1459	2.0000e-004	0.0165	2.3000e-004	0.0168	4.4200e-003	2.1000e-004	4.6300e-003	0.0000	18.0938	18.0938	7.8000e-004	0.0000	18.1133
<b>Total</b>	<b>0.0339</b>	<b>0.3390</b>	<b>0.2369</b>	<b>6.1000e-004</b>	<b>0.0211</b>	<b>7.6000e-004</b>	<b>0.0218</b>	<b>5.7400e-003</b>	<b>7.2000e-004</b>	<b>6.4600e-003</b>	<b>0.0000</b>	<b>57.4299</b>	<b>57.4299</b>	<b>4.6200e-003</b>	<b>0.0000</b>	<b>57.5453</b>

**Mitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0324	0.2956	1.6553	2.3800e-003	3.7500e-003	3.7500e-003	3.7500e-003	3.7500e-003	3.7500e-003	3.7500e-003	0.0000	207.1312	207.1312	0.0578	0.0000	208.5759
<b>Total</b>	<b>0.0324</b>	<b>0.2956</b>	<b>1.6553</b>	<b>2.3800e-003</b>	<b>3.7500e-003</b>	<b>3.7500e-003</b>	<b>3.7500e-003</b>	<b>3.7500e-003</b>	<b>3.7500e-003</b>	<b>3.7500e-003</b>	<b>0.0000</b>	<b>207.1312</b>	<b>207.1312</b>	<b>0.0578</b>	<b>0.0000</b>	<b>208.5759</b>

**Mitigated Construction Off-Site**





Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1700e-003	9.9000e-004	0.0128	2.0000e-005	1.4600e-003	2.0000e-005	1.4800e-003	3.9000e-004	2.0000e-005	2.0000e-004	3.9000e-004	1.4800e-003	1.4800e-003	3.9000e-004	2.0000e-005	4.1000e-004	2.0000e-004	1.5923	1.5923	7.0000e-005	1.5923	7.0000e-005	0.0000	0.0000	1.5940
<b>Total</b>	<b>2.1700e-003</b>	<b>9.9000e-004</b>	<b>0.0128</b>	<b>2.0000e-005</b>	<b>1.4600e-003</b>	<b>2.0000e-005</b>	<b>1.4800e-003</b>	<b>3.9000e-004</b>	<b>2.0000e-005</b>	<b>4.1000e-004</b>	<b>3.9000e-004</b>	<b>1.4800e-003</b>	<b>1.4800e-003</b>	<b>3.9000e-004</b>	<b>2.0000e-005</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>1.5923</b>	<b>1.5923</b>	<b>7.0000e-005</b>	<b>1.5923</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.5940</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	1.6569					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7100e-003	0.0286	0.1390	2.0000e-004	3.0000e-004	3.0000e-004	3.0000e-004	3.0000e-004	3.0000e-004	3.0000e-004	0.0000	17.0816	17.0816	4.0500e-003	0.0000	17.1829
<b>Total</b>	<b>1.6596</b>	<b>0.0286</b>	<b>0.1390</b>	<b>2.0000e-004</b>	<b>3.0000e-004</b>	<b>3.0000e-004</b>	<b>3.0000e-004</b>	<b>3.0000e-004</b>	<b>3.0000e-004</b>	<b>3.0000e-004</b>	<b>0.0000</b>	<b>17.0816</b>	<b>17.0816</b>	<b>4.0500e-003</b>	<b>0.0000</b>	<b>17.1829</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1700e-003	9.9000e-004	0.0128	2.0000e-005	1.4600e-003	2.0000e-005	1.4800e-003	3.9000e-004	2.0000e-005	4.1000e-004	0.0000	1.5923	1.5923	7.0000e-005	0.0000	1.5940
<b>Total</b>	<b>2.1700e-003</b>	<b>9.9000e-004</b>	<b>0.0128</b>	<b>2.0000e-005</b>	<b>1.4600e-003</b>	<b>2.0000e-005</b>	<b>1.4800e-003</b>	<b>3.9000e-004</b>	<b>2.0000e-005</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>1.5923</b>	<b>1.5923</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>1.5940</b>

**3.6 Architectural Coating - 2021**  
**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MIT/yr																
Archit. Coating	2.1088				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0207	0.1791	0.1770	2.5000e-004	0.0113	0.0113	0.0113	0.0106	0.0106	0.0106	0.0000	21.7403	21.7403	5.0900e-003	0.0000	21.8675
<b>Total</b>	<b>2.1295</b>	<b>0.1791</b>	<b>0.1770</b>	<b>2.5000e-004</b>	<b>0.0113</b>	<b>0.0113</b>	<b>0.0113</b>	<b>0.0106</b>	<b>0.0106</b>	<b>0.0106</b>	<b>0.0000</b>	<b>21.7403</b>	<b>21.7403</b>	<b>5.0900e-003</b>	<b>0.0000</b>	<b>21.8675</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MIT/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5200e-003	1.1100e-003	0.0147	2.0000e-005	1.8500e-003	2.0000e-005	1.8800e-003	5.0000e-004	2.0000e-005	5.2000e-004	0.0000	1.9577	1.9577	8.0000e-005	0.0000	1.9596
<b>Total</b>	<b>2.5200e-003</b>	<b>1.1100e-003</b>	<b>0.0147</b>	<b>2.0000e-005</b>	<b>1.8500e-003</b>	<b>2.0000e-005</b>	<b>1.8800e-003</b>	<b>5.0000e-004</b>	<b>2.0000e-005</b>	<b>5.2000e-004</b>	<b>0.0000</b>	<b>1.9577</b>	<b>1.9577</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>1.9596</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
MIT/yr																
Archit. Coating	2.1088					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4500e-003	0.0364	0.1770	2.5000e-004		3.8000e-004	3.8000e-004	3.8000e-004	3.8000e-004	3.8000e-004	0.0000	21.7403	21.7403	5.0900e-003	0.0000	21.8675
<b>Total</b>	<b>2.1122</b>	<b>0.0364</b>	<b>0.1770</b>	<b>2.5000e-004</b>		<b>3.8000e-004</b>	<b>3.8000e-004</b>		<b>3.8000e-004</b>	<b>3.8000e-004</b>	<b>0.0000</b>	<b>21.7403</b>	<b>21.7403</b>	<b>5.0900e-003</b>	<b>0.0000</b>	<b>21.8675</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
MIT/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5200e-003	1.1100e-003	0.0147	2.0000e-005	1.8500e-003	2.0000e-005	1.8800e-003	5.0000e-004	2.0000e-005	5.2000e-004	0.0000	1.9577	1.9577	8.0000e-005	0.0000	1.9596
<b>Total</b>	<b>2.5200e-003</b>	<b>1.1100e-003</b>	<b>0.0147</b>	<b>2.0000e-005</b>	<b>1.8500e-003</b>	<b>2.0000e-005</b>	<b>1.8800e-003</b>	<b>5.0000e-004</b>	<b>2.0000e-005</b>	<b>5.2000e-004</b>	<b>0.0000</b>	<b>1.9577</b>	<b>1.9577</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>1.9596</b>

**3.7 Paving - 2021**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
MIT/yr																
Off-Road	0.0234	0.2315	0.2489	3.7000e-004		0.0134	0.0134	0.0124	0.0124	0.0124	0.0000	32.2881	32.2881	0.0103	0.0000	32.5467



Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
	tons/yr										MT/yr						
Hauling	1.0000e-004	4.9600e-003	8.1000e-004	1.0000e-005	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.6426	0.6426	7.0000e-005	0.0000	0.0000	0.6442
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	1.6000e-004	2.1300e-003	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2828	0.2828	1.0000e-005	0.0000	0.0000	0.2831
<b>Total</b>	<b>4.6000e-004</b>	<b>5.1200e-003</b>	<b>2.9400e-003</b>	<b>1.0000e-005</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>3.2000e-004</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.9254</b>	<b>0.9254</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.9273</b>

Gateway Crossings, Phase 4 TAC Emissions - Santa Clara County, Annual

**Gateway Crossings, Phase 4 TAC Emissions**  
 Santa Clara County, Annual

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	905.00	Space	0.00	362,000.00	0
Parking Lot	4.00	Space	0.04	1,600.00	0
Apartments Mid Rise	556.00	Dwelling Unit	21.36	556,885.00	1590

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2024

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	380	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - PG&E used to represent SVP (Silicon Valley Power. Current CO2 emission factor from City of Santa Clara 2020 Climate Action Plan

Land Use - Applicant provided project description

Construction Phase - Applicant provided construction schedule

Off-road Equipment -

Off-road Equipment - Applicant provided equipment information

Off-road Equipment - Applicant provided equipment information

Off-road Equipment - Applicant provided equipment information

Off-road Equipment - Applicant provided equipment information  
 Off-road Equipment - Applicant provided equipment information  
 Off-road Equipment - Applicant provided equipment information

Trips and VMT - Paving trips= 800 cy= 100 trips

Grading - 18459 cy of soil export

Vehicle Trips - From Project Traffic Report

Woodstoves - No woodstoves or wood based fireplaces

Energy Use - Title 24,2013 values used

Construction Off-road Equipment Mitigation - Tier 2 Mitigation and Best Management practices

Energy Mitigation - Title 24, 2016 came into effect on 1st January, 2017

Table Name	Column Name	Default Value	New Value
tbiConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00







Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MT/yr																
2022	2.4409	5.7614	5.1310	9.7800e-003	0.5165	0.2335	0.7500	0.1962	0.2175	0.4137	0.0000	855.3373	855.3373	0.2199	0.0000	860.8354
2023	2.2094	0.6134	0.7425	1.2300e-003	5.3600e-003	0.0293	0.0346	1.4400e-003	0.0273	0.0287	0.0000	107.3268	107.3268	0.0281	0.0000	108.0293
<b>Maximum</b>	<b>2.4409</b>	<b>5.7614</b>	<b>5.1310</b>	<b>9.7800e-003</b>	<b>0.5165</b>	<b>0.2335</b>	<b>0.7500</b>	<b>0.1962</b>	<b>0.2175</b>	<b>0.4137</b>	<b>0.0000</b>	<b>855.3373</b>	<b>855.3373</b>	<b>0.2199</b>	<b>0.0000</b>	<b>860.8354</b>

**Mitigated Construction**

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MT/yr																
2022	2.0304	1.7257	5.6404	9.7800e-003	0.2570	0.0143	0.2713	0.0536	0.0142	0.0678	0.0000	855.3364	855.3364	0.2199	0.0000	860.8345
2023	2.1626	0.1780	0.8190	1.2300e-003	5.3600e-003	1.8500e-003	7.2100e-003	1.4400e-003	1.8400e-003	3.2900e-003	0.0000	107.3267	107.3267	0.0281	0.0000	108.0292
<b>Maximum</b>	<b>2.1626</b>	<b>1.7257</b>	<b>5.6404</b>	<b>9.7800e-003</b>	<b>0.2570</b>	<b>0.0143</b>	<b>0.2713</b>	<b>0.0536</b>	<b>0.0142</b>	<b>0.0678</b>	<b>0.0000</b>	<b>855.3364</b>	<b>855.3364</b>	<b>0.2199</b>	<b>0.0000</b>	<b>860.8345</b>

Percent Reduction	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
9.84	9.84	70.14	-9.98	0.00	49.72	93.85	64.50	72.16	93.43	83.93	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	3-1-2022	5-31-2022	2.2810	0.3713
2	6-1-2022	8-31-2022	1.9888	0.7011
3	9-1-2022	11-30-2022	2.7273	1.8172
4	12-1-2022	2-28-2023	2.7497	2.1702

5	3-1-2023	5-31-2023	1.2289	0.9975
		Highest	2.7497	2.1702

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days/Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/1/2022	3/28/2022	5	20	
2	Grading	Grading	3/29/2022	6/20/2022	5	60	
3	Trenching	Trenching	5/2/2022	6/24/2022	5	40	
4	Building Construction	Building Construction	6/1/2022	1/10/2023	5	160	
5	Architectural Coating	Architectural Coating	10/3/2022	4/14/2023	5	140	
6	Paving	Paving	2/1/2023	4/25/2023	5	60	

Acres of Grading (Site Preparation Phase): 80

Acres of Grading (Grading Phase): 240

Acres of Paving: 0.04

Residential Indoor: 1,127,692; Residential Outdoor: 375,897; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	3	8.00	367	0.48
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rollers	2	8.00	80	0.38

Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	3	8.00	367	0.48
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	2	8.00	158	0.38
Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Trenching	Skid Steer Loaders	1	8.00	65	0.37
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	3	8.00	63	0.31
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Other Construction Equipment	3	8.00	172	0.42
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Architectural Coating	Aerial Lifts	1	8.00	63	0.31
Architectural Coating	Air Compressors	2	3.50	78	0.48
Architectural Coating	Cranes	1	4.60	231	0.29
Architectural Coating	Forklifts	1	8.00	89	0.20
Paving	Cement and Mortar Mixers	1	5.30	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	1	5.30	97	0.37

**Trips and VMI**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	23.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	13	33.00	0.00	2,307.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Trenching	7	18.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	17	553.00	119.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	5	111.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	100.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

- Use Cleaner Engines for Construction Equipment
- Replace Ground Cover
- Water Exposed Area
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

### 3.2 Site Preparation - 2022 Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.1629	0.0000	0.1629	0.0708	0.0000	0.0708	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0520	0.5754	0.3336	8.1000e-004	0.0234	0.0234	0.0234	0.0215	0.0215	0.0215	0.0000	71.2062	71.2062	0.0230	0.0000	71.7819
<b>Total</b>	<b>0.0520</b>	<b>0.5754</b>	<b>0.3336</b>	<b>8.1000e-004</b>	<b>0.1629</b>	<b>0.0234</b>	<b>0.1863</b>	<b>0.0708</b>	<b>0.0215</b>	<b>0.0923</b>	<b>0.0000</b>	<b>71.2062</b>	<b>71.2062</b>	<b>0.0230</b>	<b>0.0000</b>	<b>71.7819</b>

### Unmitigated Construction Off-Site



Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	9.0000e-005	1.2300e-003	0.0000	1.7000e-004	0.0000	5.0000e-005	0.0000	1.7000e-004	0.0000	5.0000e-005	0.0000	0.1742	0.1742	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1744
<b>Total</b>	<b>2.1000e-004</b>	<b>9.0000e-005</b>	<b>1.2300e-003</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.1742</b>	<b>0.1742</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1744</b>

### 3.3 Grading - 2022

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Fugitive Dust					0.3090	0.0000	0.3090	0.1132	0.0000	0.1132	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1587	1.7266	1.2578	2.7200e-003	0.0725	0.0725	0.0725	0.0667	0.0667	0.0667	0.0000	238.8577	238.8577	0.0773	0.0000	240.7890
<b>Total</b>	<b>0.1587</b>	<b>1.7266</b>	<b>1.2578</b>	<b>2.7200e-003</b>	<b>0.3090</b>	<b>0.0725</b>	<b>0.3814</b>	<b>0.1132</b>	<b>0.0667</b>	<b>0.1799</b>	<b>0.0000</b>	<b>238.8577</b>	<b>238.8577</b>	<b>0.0773</b>	<b>0.0000</b>	<b>240.7890</b>
MT/yr																

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Hauling	2.2100e-003	0.1100	0.0182	1.5000e-004	1.0000e-003	8.0000e-005	1.0800e-003	2.8000e-004	8.0000e-005	3.6000e-004	0.0000	14.6708	14.6708	1.4300e-003	0.0000	14.7065
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	3.9000e-004	5.3000e-003	1.0000e-005	7.4000e-004	1.0000e-005	7.5000e-004	2.0000e-004	1.0000e-005	2.1000e-004	0.0000	0.7500	0.7500	3.0000e-005	0.0000	0.7507
<b>Total</b>	<b>3.1300e-003</b>	<b>0.1104</b>	<b>0.0235</b>	<b>1.6000e-004</b>	<b>1.7400e-003</b>	<b>9.0000e-005</b>	<b>1.8300e-003</b>	<b>4.8000e-004</b>	<b>9.0000e-005</b>	<b>5.7000e-004</b>	<b>0.0000</b>	<b>15.4208</b>	<b>15.4208</b>	<b>1.4600e-003</b>	<b>0.0000</b>	<b>15.4571</b>
MT/yr																



**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Fugitive Dust					0.1390	0.0000	0.1390	0.0255	0.0000	0.0255	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.2148	1.4378	2.7200e-003	4.4500e-003	4.4500e-003	4.4500e-003	4.4500e-003	4.4500e-003	4.4500e-003	0.0000	238.8575	238.8575	0.0773	0.0000	240.7887
<b>Total</b>	<b>0.0351</b>	<b>0.2148</b>	<b>1.4378</b>	<b>2.7200e-003</b>	<b>0.1390</b>	<b>4.4500e-003</b>	<b>0.1435</b>	<b>0.0255</b>	<b>4.4500e-003</b>	<b>0.0299</b>	<b>0.0000</b>	<b>238.8575</b>	<b>238.8575</b>	<b>0.0773</b>	<b>0.0000</b>	<b>240.7887</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	2.2100e-003	0.1100	0.0182	1.5000e-004	1.0000e-003	8.0000e-005	1.0800e-003	2.8000e-004	8.0000e-005	3.6000e-004	0.0000	14.6708	14.6708	1.4300e-003	0.0000	14.7065
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	3.9000e-004	5.3000e-003	1.0000e-005	7.4000e-004	1.0000e-005	7.5000e-004	2.0000e-004	1.0000e-005	2.1000e-004	0.0000	0.7500	0.7500	3.0000e-005	0.0000	0.7507
<b>Total</b>	<b>3.1300e-003</b>	<b>0.1104</b>	<b>0.0235</b>	<b>1.6000e-004</b>	<b>1.7400e-003</b>	<b>9.0000e-005</b>	<b>1.8300e-003</b>	<b>4.8000e-004</b>	<b>9.0000e-005</b>	<b>5.7000e-004</b>	<b>0.0000</b>	<b>15.4208</b>	<b>15.4208</b>	<b>1.4600e-003</b>	<b>0.0000</b>	<b>15.4571</b>

**3.4 Trenching - 2022**  
**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.0216	0.2198	0.3380	5.0000e-004	0.0106	0.0106	0.0106	9.7200e-003	9.7200e-003	9.7200e-003	0.0000	44.2324	44.2324	0.0143	0.0000	44.5900
<b>Total</b>	<b>0.0216</b>	<b>0.2198</b>	<b>0.3380</b>	<b>5.0000e-004</b>	<b>0.0106</b>	<b>0.0106</b>	<b>0.0106</b>	<b>9.7200e-003</b>	<b>9.7200e-003</b>	<b>9.7200e-003</b>	<b>0.0000</b>	<b>44.2324</b>	<b>44.2324</b>	<b>0.0143</b>	<b>0.0000</b>	<b>44.5900</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	1.4000e-004	1.9300e-003	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2727	0.2727	1.0000e-005	0.0000	0.2730
<b>Total</b>	<b>3.3000e-004</b>	<b>1.4000e-004</b>	<b>1.9300e-003</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2727</b>	<b>0.2727</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2730</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	6.6800e-003	0.0478	0.3808	5.0000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	0.0000	44.2323	44.2323	0.0143	0.0000	44.5900

Total	6.6800e-003	0.0478	0.3808	5.0000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	0.0000	44.2323	44.2323	0.0143	0.0000	44.5900
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**Mitigated Construction Off-Site**

Category	tons/yr										MIT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	1.4000e-004	1.9300e-003	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2727	0.2727	1.0000e-005	0.0000	0.2730
<b>Total</b>	<b>3.3000e-004</b>	<b>1.4000e-004</b>	<b>1.9300e-003</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2727</b>	<b>0.2727</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2730</b>

**3.5 Building Construction - 2022**

**Unmitigated Construction On-Site**

Category	tons/yr										MIT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.2733	2.3669	2.6067	4.1300e-003		0.1171	0.1171		0.1102	0.1102	0.0000	350.3490	350.3490	0.0896	0.0000	352.5902
<b>Total</b>	<b>0.2733</b>	<b>2.3669</b>	<b>2.6067</b>	<b>4.1300e-003</b>		<b>0.1171</b>	<b>0.1171</b>		<b>0.1102</b>	<b>0.1102</b>	<b>0.0000</b>	<b>350.3490</b>	<b>350.3490</b>	<b>0.0896</b>	<b>0.0000</b>	<b>352.5902</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0142	0.5599	0.1453	7.5000e-004	8.4100e-003	4.2000e-004	8.8300e-003	2.4500e-003	4.0000e-004	2.8500e-003	0.0000	71.7290	71.7290	6.3100e-003	0.0000	71.8867
Worker	0.0393	0.0168	0.2265	3.6000e-004	0.0315	4.1000e-004	0.0319	8.4100e-003	3.8000e-004	8.7900e-003	0.0000	32.0483	32.0483	1.1600e-003	0.0000	32.0772
<b>Total</b>	<b>0.0535</b>	<b>0.5767</b>	<b>0.3718</b>	<b>1.1100e-003</b>	<b>0.0399</b>	<b>8.3000e-004</b>	<b>0.0407</b>	<b>0.0109</b>	<b>7.8000e-004</b>	<b>0.0116</b>	<b>0.0000</b>	<b>103.7773</b>	<b>103.7773</b>	<b>7.4700e-003</b>	<b>0.0000</b>	<b>103.9639</b>
Category	MIT/yr															

**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															
Off-Road	0.0582	0.6768	2.8265	4.1300e-003	6.2300e-003	6.2300e-003	6.2300e-003	6.2300e-003	6.2300e-003	6.2300e-003	0.0000	350.3486	350.3486	0.0896	0.0000	352.5897
<b>Total</b>	<b>0.0582</b>	<b>0.6768</b>	<b>2.8265</b>	<b>4.1300e-003</b>	<b>6.2300e-003</b>	<b>6.2300e-003</b>	<b>6.2300e-003</b>	<b>6.2300e-003</b>	<b>6.2300e-003</b>	<b>6.2300e-003</b>	<b>0.0000</b>	<b>350.3486</b>	<b>350.3486</b>	<b>0.0896</b>	<b>0.0000</b>	<b>352.5897</b>
Category	MIT/yr															

**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															
Category	MIT/yr															



**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Off-Road	2.6600e-003	0.0310	0.1293	1.9000e-004	2.9000e-004	2.9000e-004	2.9000e-004	2.9000e-004	2.9000e-004	2.9000e-004	0.0000	16.0294	16.0294	4.0700e-003	0.0000	16.1311
<b>Total</b>	<b>2.6600e-003</b>	<b>0.0310</b>	<b>0.1293</b>	<b>1.9000e-004</b>	<b>2.9000e-004</b>	<b>2.9000e-004</b>	<b>2.9000e-004</b>	<b>2.9000e-004</b>	<b>2.9000e-004</b>	<b>2.9000e-004</b>	<b>0.0000</b>	<b>16.0294</b>	<b>16.0294</b>	<b>4.0700e-003</b>	<b>0.0000</b>	<b>16.1311</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1000e-004	0.0217	5.9700e-003	3.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	3.1716	3.1716	2.3000e-004	0.0000	3.1774
Worker	1.6500e-003	6.8000e-004	9.4100e-003	2.0000e-005	1.4400e-003	2.0000e-005	1.4600e-003	3.8000e-004	2.0000e-005	4.0000e-004	0.0000	1.4114	1.4114	5.0000e-005	0.0000	1.4126
<b>Total</b>	<b>2.1600e-003</b>	<b>0.0224</b>	<b>0.0154</b>	<b>5.0000e-005</b>	<b>1.8200e-003</b>	<b>3.0000e-005</b>	<b>1.8500e-003</b>	<b>4.9000e-004</b>	<b>3.0000e-005</b>	<b>5.2000e-004</b>	<b>0.0000</b>	<b>4.5831</b>	<b>4.5831</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>4.5900</b>

**3.6 Architectural Coating - 2022**

**Unmitigated Construction On-Site**



Off-Road	4.4100e-003	0.0440	0.1972	3.2000e-004	5.0000e-004	5.0000e-004	5.0000e-004	5.0000e-004	5.0000e-004	5.0000e-004	28.3140	28.3140	6.6600e-003	0.0000	28.4804
<b>Total</b>	<b>1.8597</b>	<b>0.0440</b>	<b>0.1972</b>	<b>3.2000e-004</b>	<b>5.0000e-004</b>	<b>5.0000e-004</b>	<b>5.0000e-004</b>	<b>5.0000e-004</b>	<b>5.0000e-004</b>	<b>5.0000e-004</b>	<b>28.3140</b>	<b>28.3140</b>	<b>6.6600e-003</b>	<b>0.0000</b>	<b>28.4804</b>

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3500e-003	1.4300e-003	0.0193	3.0000e-005	2.6800e-003	4.0000e-005	2.7200e-003	7.2000e-004	3.0000e-005	7.5000e-004	0.0000	2.7329	2.7329	1.0000e-004	0.0000	2.7354
<b>Total</b>	<b>3.3500e-003</b>	<b>1.4300e-003</b>	<b>0.0193</b>	<b>3.0000e-005</b>	<b>2.6800e-003</b>	<b>4.0000e-005</b>	<b>2.7200e-003</b>	<b>7.2000e-004</b>	<b>3.0000e-005</b>	<b>7.5000e-004</b>	<b>0.0000</b>	<b>2.7329</b>	<b>2.7329</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>2.7354</b>

**3.6 Architectural Coating - 2023**  
**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	2.1407					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0211	0.1953	0.2027	3.7000e-004		9.1000e-003	9.1000e-003		8.6200e-003	8.6200e-003	0.0000	32.6698	32.6698	7.6200e-003	0.0000	32.8603
<b>Total</b>	<b>2.1618</b>	<b>0.1953</b>	<b>0.2027</b>	<b>3.7000e-004</b>		<b>9.1000e-003</b>	<b>9.1000e-003</b>		<b>8.6200e-003</b>	<b>8.6200e-003</b>	<b>0.0000</b>	<b>32.6698</b>	<b>32.6698</b>	<b>7.6200e-003</b>	<b>0.0000</b>	<b>32.8603</b>

**Unmitigated Construction Off-Site**







**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Off-Road	7.8000e-003	0.0684	0.4231	5.7000e-004	9.1000e-004	9.1000e-004	9.1000e-004	9.1000e-004	9.1000e-004	9.1000e-004	0.0000	50.0041	50.0041	0.0160	0.0000	50.4034
Paving	5.0000e-005				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>7.8500e-003</b>	<b>0.0684</b>	<b>0.4231</b>	<b>5.7000e-004</b>	<b>9.1000e-004</b>	<b>9.1000e-004</b>	<b>9.1000e-004</b>	<b>9.1000e-004</b>	<b>9.1000e-004</b>	<b>9.1000e-004</b>	<b>0.0000</b>	<b>50.0041</b>	<b>50.0041</b>	<b>0.0160</b>	<b>0.0000</b>	<b>50.4034</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	7.0000e-005	3.9200e-003	6.9000e-004	1.0000e-005	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.6112	0.6112	5.0000e-005	0.0000	0.6124
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	1.9000e-004	2.6300e-003	0.0000	4.0000e-004	1.0000e-005	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3938	0.3938	1.0000e-005	0.0000	0.3941
<b>Total</b>	<b>5.3000e-004</b>	<b>4.1100e-003</b>	<b>3.3200e-003</b>	<b>1.0000e-005</b>	<b>4.4000e-004</b>	<b>1.0000e-005</b>	<b>4.6000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>1.0050</b>	<b>1.0050</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.0065</b>

Gateway Crossings, Phase 5, TAC Emissions - Santa Clara County, Annual

**Gateway Crossings, Phase 5, TAC Emissions**  
**Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	339.00	Space	0.00	142,500.00	0
Hotel	225.00	Room	21.40	182,000.00	0
Strip Mall	5.20	1000sqft	0.00	5,200.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2026

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	380	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - PG&E used to represent SVP (Silicon Valley Power).CO2 emission factor from City of Santa Clara 2020 Climate Action Plan

Land Use - Land Use Sizes from construction information provided by project applicant

Construction Phase - Applicant provided construction schedule

Off-road Equipment -

Off-road Equipment - Applicant provided information

Off-road Equipment - applicant provided information

Off-road Equipment - Applicant provided equipment information

Off-road Equipment - Applicant provided information

Off-road Equipment - Applicant provided construction information  
 Off-road Equipment - Applicant provided equipment information  
 Trips and VMT - 100 paving trips based on 800 cy of asphalt hauled  
 Grading - 7585 cy of soil off haul  
 Architectural Coating -  
 Vehicle Trips - trip rates from TIA  
 Vehicle Emission Factors -  
 Vehicle Emission Factors -  
 Vehicle Emission Factors -  
 Woodstoves -  
 Area Coating -  
 Landscape Equipment -  
 Energy Use - default 2013, title 24 values used

Construction Off-road Equipment Mitigation - Best Management Practices, tier 3 DPF Level 3

Area Mitigation -

Energy Mitigation - title 24, 2016 values became effective on 1st January, 2017

Stationary Sources - Emergency Generators and Fire Pumps - 100 kw generator in the garage

Table Name	Column Name	Default Value	New Value
tbi/AreaMitigation	UseLowVOCPaintNonresidentialInterior	100	150
tbi/AreaMitigation	UseLowVOCPaintResidentialExterior	150	100
tbi/ConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tbi/ConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbi/ConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbi/ConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbi/ConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbi/ConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbi/ConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tbi/ConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tbi/ConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbi/ConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00



tblLandUse	BuildingSpaceSquareFeet	135,600.00	142,500.00
tblLandUse	BuildingSpaceSquareFeet	326,700.00	182,000.00
tblLandUse	LandUseSquareFeet	135,600.00	142,500.00
tblLandUse	LandUseSquareFeet	326,700.00	182,000.00
tblLandUse	LotAcreage	3.05	0.00
tblLandUse	LotAcreage	7.50	2.140
tblLandUse	LotAcreage	0.12	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	380
tblProjectCharacteristics	OperationalYear	2018	2026
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblVehicleTrips	ST_TR	8.19	8.82
tblVehicleTrips	ST_TR	42.04	28.95
tblVehicleTrips	SU_TR	5.95	6.40
tblVehicleTrips	SU_TR	20.43	14.83
tblVehicleTrips	WD_TR	8.17	8.79
tblVehicleTrips	WD_TR	44.32	30.52

## 2.0 Emissions Summary

### 2.1 Overall Construction Unmitigated Construction

Year	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2024	0.9457	4.5606	5.0768	0.0109	0.4504	0.1795	0.6299	0.1586	0.1680	0.3266	0.0000	958.6107	958.6107	0.1886	0.0000	963.3245
2025	0.7441	1.4996	2.0198	3.9800e-003	0.0742	0.0592	0.1334	0.0201	0.0555	0.0756	0.0000	348.9968	348.9968	0.0677	0.0000	350.6887
<b>Maximum</b>	<b>0.9457</b>	<b>4.5606</b>	<b>5.0768</b>	<b>0.0109</b>	<b>0.4504</b>	<b>0.1795</b>	<b>0.6299</b>	<b>0.1586</b>	<b>0.1680</b>	<b>0.3266</b>	<b>0.0000</b>	<b>958.6107</b>	<b>958.6107</b>	<b>0.1886</b>	<b>0.0000</b>	<b>963.3245</b>





1	Site Preparation	1/11/2024	1/26/2024	5	20
2	Grading	1/27/2024	2/23/2024	5	20
3	Trenching	1/27/2024	2/23/2024	5	20
4	Building Construction	2/26/2024	4/18/2025	5	300
5	Architectural Coating	9/2/2024	6/6/2025	5	200
6	Paving	4/28/2025	7/18/2025	5	60

**Acres of Grading (Site Preparation Phase): 80**

**Acres of Grading (Grading Phase): 80**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 280,800; Non-Residential Outdoor: 93,600; Striped Parking Area:**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	3	8.00	367	0.48
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	3	8.00	367	0.48
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	2	8.00	158	0.38
Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Trenching	Skid Steer Loaders	1	8.00	65	0.37

Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	3	5.30	63	0.31
Building Construction	Cranes	1	4.30	231	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Other Construction Equipment	3	8.00	172	0.42
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Architectural Coating	Aerial Lifts	1	4.80	63	0.31
Architectural Coating	Air Compressors	2	2.40	78	0.48
Architectural Coating	Cranes	1	2.40	231	0.29
Architectural Coating	Forklifts	1	4.80	89	0.20
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	13	33.00	0.00	948.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	17	138.00	54.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	5	28.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	100.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

- Use Cleaner Engines for Construction Equipment
- Replace Ground Cover
- Water Exposed Area
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

**3.2 Site Preparation - 2024**  
**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Fugitive Dust					0.1629	0.0000	0.1629	0.0708	0.0000	0.0708	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0459	0.4793	0.3110	8.1000e-004		0.0192	0.0192	0.0176	0.0176	0.0176	0.0000	71.1651	71.1651	0.0230	0.0000	71.7405
<b>Total</b>	<b>0.0459</b>	<b>0.4793</b>	<b>0.3110</b>	<b>8.1000e-004</b>	<b>0.1629</b>	<b>0.0192</b>	<b>0.1820</b>	<b>0.0708</b>	<b>0.0176</b>	<b>0.0884</b>	<b>0.0000</b>	<b>71.1651</b>	<b>71.1651</b>	<b>0.0230</b>	<b>0.0000</b>	<b>71.7405</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.6000e-004	4.1300e-003	1.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.3449	1.3449	2.0000e-005	0.0000	1.3456

Total	5.8000e-004	3.6000e-004	4.1300e-003	1.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.9000e-004	1.0000e-005	5.0000e-004	1.3449	1.3449	0.0000	2.0000e-005	0.0000	1.3456
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### Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Fugitive Dust					0.0733	0.0000	0.0733	0.0159	0.0000	0.0159	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.0536	0.3803	8.1000e-004	1.3300e-003	1.3300e-003	1.3300e-003	1.3300e-003	1.3300e-003	1.3300e-003	0.0000	71.1650	71.1650	0.0230	0.0000	71.7404
<b>Total</b>	<b>0.0102</b>	<b>0.0536</b>	<b>0.3803</b>	<b>8.1000e-004</b>	<b>0.0733</b>	<b>1.3300e-003</b>	<b>0.0746</b>	<b>0.0159</b>	<b>1.3300e-003</b>	<b>0.0173</b>	<b>0.0000</b>	<b>71.1650</b>	<b>71.1650</b>	<b>0.0230</b>	<b>0.0000</b>	<b>71.7404</b>
MIT/yr																

### Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.6000e-004	4.1300e-003	1.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.3449	1.3449	2.0000e-005	0.0000	1.3456
<b>Total</b>	<b>5.8000e-004</b>	<b>3.6000e-004</b>	<b>4.1300e-003</b>	<b>1.0000e-005</b>	<b>1.8200e-003</b>	<b>1.0000e-005</b>	<b>1.8300e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>1.3449</b>	<b>1.3449</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>1.3456</b>
MIT/yr																

### **3.3 Grading - 2024**

#### Unmitigated Construction On-Site



Fugitive Dust					0.0464	0.0000	0.0464	8.4900e-003	0.0000	8.4900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0117	0.0716	0.4793	9.1000e-004	1.4800e-003	1.4800e-003	1.4800e-003	1.4800e-003	0.0000	1.4800e-003	0.0000	79.5838	0.0257	0.0000	0.0000	80.2273
<b>Total</b>	<b>0.0117</b>	<b>0.0716</b>	<b>0.4793</b>	<b>9.1000e-004</b>	<b>1.4800e-003</b>	<b>1.4800e-003</b>	<b>0.0479</b>	<b>8.4900e-003</b>	<b>1.4800e-003</b>	<b>9.9700e-003</b>	<b>0.0000</b>	<b>79.5838</b>	<b>0.0257</b>	<b>0.0000</b>	<b>0.0000</b>	<b>80.2273</b>

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr						
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Hauling	2.3700e-003	0.0749	0.0248	3.5000e-004	8.0400e-003	1.4000e-004	8.1800e-003	2.2100e-003	1.3000e-004	2.3400e-003	0.0000	33.6040	33.6040	1.4200e-003	0.0000	0.0000	33.6395
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	5.1000e-004	5.9200e-003	2.0000e-005	2.6200e-003	2.0000e-005	2.6300e-003	7.0000e-004	1.0000e-005	7.1000e-004	0.0000	1.9297	1.9297	4.0000e-005	0.0000	0.0000	1.9306
<b>Total</b>	<b>3.2100e-003</b>	<b>0.0755</b>	<b>0.0307</b>	<b>3.7000e-004</b>	<b>0.0107</b>	<b>1.6000e-004</b>	<b>0.0108</b>	<b>2.9100e-003</b>	<b>1.4000e-004</b>	<b>3.0500e-003</b>	<b>0.0000</b>	<b>35.5337</b>	<b>35.5337</b>	<b>1.4600e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>35.5701</b>

**3.4 Trenching - 2024**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr						
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Off-Road	9.5700e-003	0.0933	0.1691	2.5000e-004	4.0500e-003	4.0500e-003	4.0500e-003	3.7300e-003	3.7300e-003	3.7300e-003	0.0000	22.1365	22.1365	7.1600e-003	0.0000	0.0000	22.3155
<b>Total</b>	<b>9.5700e-003</b>	<b>0.0933</b>	<b>0.1691</b>	<b>2.5000e-004</b>	<b>4.0500e-003</b>	<b>4.0500e-003</b>	<b>4.0500e-003</b>	<b>3.7300e-003</b>	<b>3.7300e-003</b>	<b>3.7300e-003</b>	<b>0.0000</b>	<b>22.1365</b>	<b>22.1365</b>	<b>7.1600e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>22.3155</b>



Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	2.8000e-004	3.2300e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0526	1.0526	2.0000e-005	0.0000	1.0530
<b>Total</b>	<b>4.6000e-004</b>	<b>2.8000e-004</b>	<b>3.2300e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>1.0000e-005</b>	<b>1.4400e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.0526</b>	<b>1.0526</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>1.0530</b>

**3.5 Building Construction - 2024**  
**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.3321	2.8430	3.5826	5.6600e-003	0.1293	0.1293	0.1293	0.1216	0.1216	0.1216	0.0000	479.8372	479.8372	0.1189	0.0000	482.8107
<b>Total</b>	<b>0.3321</b>	<b>2.8430</b>	<b>3.5826</b>	<b>5.6600e-003</b>	<b>0.1293</b>	<b>0.1293</b>	<b>0.1293</b>	<b>0.1216</b>	<b>0.1216</b>	<b>0.1216</b>	<b>0.0000</b>	<b>479.8372</b>	<b>479.8372</b>	<b>0.1189</b>	<b>0.0000</b>	<b>482.8107</b>

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0133	0.4357	0.1339	1.5400e-003	0.0394	5.1000e-004	0.0400	0.0114	4.9000e-004	0.0119	0.0000	148.4057	148.4057	5.3900e-003	0.0000	148.5404
Worker	0.0388	0.0238	0.2748	9.9000e-004	0.1215	7.2000e-004	0.1222	0.0323	6.6000e-004	0.0330	0.0000	89.5725	89.5725	1.6600e-003	0.0000	89.6139



Total	0.0521	0.4595	0.4087	2.5300e-003	0.1609	1.2300e-003	0.1622	0.0437	1.1500e-003	0.0449	0.0000	237.9782	237.9782	7.0500e-003	0.0000	238.1543
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**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Off-Road	0.0781	0.8688	3.8966	5.6600e-003	8.5100e-003	8.5100e-003	8.5100e-003	8.5100e-003	8.5100e-003	8.5100e-003	0.0000	479.8367	479.8367	0.1189	0.0000	482.8101
<b>Total</b>	<b>0.0781</b>	<b>0.8688</b>	<b>3.8966</b>	<b>5.6600e-003</b>	<b>8.5100e-003</b>	<b>8.5100e-003</b>	<b>8.5100e-003</b>	<b>8.5100e-003</b>	<b>8.5100e-003</b>	<b>8.5100e-003</b>	<b>0.0000</b>	<b>479.8367</b>	<b>479.8367</b>	<b>0.1189</b>	<b>0.0000</b>	<b>482.8101</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0133	0.4357	0.1339	1.5400e-003	0.0394	5.1000e-004	0.0400	0.0114	4.9000e-004	0.0119	0.0000	148.4057	148.4057	5.3900e-003	0.0000	148.5404
Worker	0.0388	0.0238	0.2748	9.9000e-004	0.1215	7.2000e-004	0.1222	0.0323	6.6000e-004	0.0330	0.0000	89.5725	89.5725	1.6600e-003	0.0000	89.6139
<b>Total</b>	<b>0.0521</b>	<b>0.4595</b>	<b>0.4087</b>	<b>2.5300e-003</b>	<b>0.1609</b>	<b>1.2300e-003</b>	<b>0.1622</b>	<b>0.0437</b>	<b>1.1500e-003</b>	<b>0.0449</b>	<b>0.0000</b>	<b>237.9782</b>	<b>237.9782</b>	<b>7.0500e-003</b>	<b>0.0000</b>	<b>238.1543</b>

**3.5 Building 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															
MIT/yr																
Off-Road	0.1076	0.9124	1.2527	1.9900e-003		0.0393	0.0393		0.0369	0.0369	0.0000	168.6424	168.6424	0.0415	0.0000	169.6805
<b>Total</b>	<b>0.1076</b>	<b>0.9124</b>	<b>1.2527</b>	<b>1.9900e-003</b>		<b>0.0393</b>	<b>0.0393</b>		<b>0.0369</b>	<b>0.0369</b>	<b>0.0000</b>	<b>168.6424</b>	<b>168.6424</b>	<b>0.0415</b>	<b>0.0000</b>	<b>169.6805</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5500e-003	0.1510	0.0458	5.4000e-004	0.0139	1.8000e-004	0.0140	4.0100e-003	1.7000e-004	4.1700e-003	0.0000	51.8043	51.8043	1.8600e-003	0.0000	51.8507
Worker	0.0129	7.6100e-003	0.0895	3.3000e-004	0.0427	2.5000e-004	0.0429	0.0114	2.3000e-004	0.0116	0.0000	30.1987	30.1987	5.3000e-004	0.0000	30.2118
<b>Total</b>	<b>0.0175</b>	<b>0.1587</b>	<b>0.1353</b>	<b>8.7000e-004</b>	<b>0.0566</b>	<b>4.3000e-004</b>	<b>0.0570</b>	<b>0.0154</b>	<b>4.0000e-004</b>	<b>0.0158</b>	<b>0.0000</b>	<b>82.0029</b>	<b>82.0029</b>	<b>2.3900e-003</b>	<b>0.0000</b>	<b>82.0625</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
MIT/yr																

Off-Road	0.0275	0.3052	1.3691	1.9900e-003	2.9900e-003	2.9900e-003	2.9900e-003	2.9900e-003	0.0000	168.6422	168.6422	0.0415	0.0000	169.6803
<b>Total</b>	<b>0.0275</b>	<b>0.3052</b>	<b>1.3691</b>	<b>1.9900e-003</b>	<b>2.9900e-003</b>	<b>2.9900e-003</b>	<b>2.9900e-003</b>	<b>2.9900e-003</b>	<b>0.0000</b>	<b>168.6422</b>	<b>168.6422</b>	<b>0.0415</b>	<b>0.0000</b>	<b>169.6803</b>

**Mitigated Construction Off-Site**

Category	tons/yr													MIT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Vendor	4.5500e-003	0.1510	0.0458	5.4000e-004	0.0139	1.8000e-004	0.0140	4.0100e-003	1.7000e-004	4.1700e-003	0.0000	51.8043	51.8043	1.8600e-003	0.0000	51.8507		
Worker	0.0129	7.6100e-003	0.0895	3.3000e-004	0.0427	2.5000e-004	0.0429	0.0114	2.3000e-004	0.0116	0.0000	30.1987	30.1987	5.3000e-004	0.0000	30.2118		
<b>Total</b>	<b>0.0175</b>	<b>0.1587</b>	<b>0.1353</b>	<b>8.7000e-004</b>	<b>0.0566</b>	<b>4.3000e-004</b>	<b>0.0570</b>	<b>0.0154</b>	<b>4.0000e-004</b>	<b>0.0158</b>	<b>0.0000</b>	<b>82.0029</b>	<b>82.0029</b>	<b>2.3900e-003</b>	<b>0.0000</b>	<b>82.0625</b>		

**3.6 Architectural Coating - 2024**  
**Unmitigated Construction On-Site**

Category	tons/yr													MIT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Archit. Coating	0.4376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Off-Road	0.0140	0.1249	0.1444	2.6000e-004		5.5900e-003	5.5900e-003		5.3100e-003	5.3100e-003	0.0000	22.8564	22.8564	5.0200e-003	0.0000	22.9818		
<b>Total</b>	<b>0.4515</b>	<b>0.1249</b>	<b>0.1444</b>	<b>2.6000e-004</b>		<b>5.5900e-003</b>	<b>5.5900e-003</b>		<b>5.3100e-003</b>	<b>5.3100e-003</b>	<b>0.0000</b>	<b>22.8564</b>	<b>22.8564</b>	<b>5.0200e-003</b>	<b>0.0000</b>	<b>22.9818</b>		

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0900e-003	1.8900e-003	0.0219	8.0000e-005	9.6600e-003	6.0000e-005	9.7200e-003	2.5700e-003	5.0000e-005	2.6200e-003	0.0000	7.1223	7.1223	1.3000e-004	0.0000	7.1256
<b>Total</b>	<b>3.0900e-003</b>	<b>1.8900e-003</b>	<b>0.0219</b>	<b>8.0000e-005</b>	<b>9.6600e-003</b>	<b>6.0000e-005</b>	<b>9.7200e-003</b>	<b>2.5700e-003</b>	<b>5.0000e-005</b>	<b>2.6200e-003</b>	<b>0.0000</b>	<b>7.1223</b>	<b>7.1223</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>7.1256</b>
Category	MT/yr															

**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															
Archit. Coating	0.4376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5300e-003	0.0353	0.1613	2.6000e-004	4.0000e-004	4.0000e-004	4.0000e-004	4.0000e-004	4.0000e-004	4.0000e-004	0.0000	22.8563	22.8563	5.0200e-003	0.0000	22.9818
<b>Total</b>	<b>0.4411</b>	<b>0.0353</b>	<b>0.1613</b>	<b>2.6000e-004</b>	<b>4.0000e-004</b>	<b>4.0000e-004</b>	<b>4.0000e-004</b>	<b>4.0000e-004</b>	<b>4.0000e-004</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>22.8563</b>	<b>22.8563</b>	<b>5.0200e-003</b>	<b>0.0000</b>	<b>22.9818</b>
Category	MT/yr															

**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															

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0900e-003	1.8900e-003	0.0219	8.0000e-005	9.6600e-003	6.0000e-005	9.7200e-003	2.5700e-003	5.0000e-005	2.6200e-003	0.0000	7.1223	7.1223	1.3000e-004	0.0000	7.1256
<b>Total</b>	<b>3.0900e-003</b>	<b>1.8900e-003</b>	<b>0.0219</b>	<b>8.0000e-005</b>	<b>9.6600e-003</b>	<b>6.0000e-005</b>	<b>9.7200e-003</b>	<b>2.5700e-003</b>	<b>5.0000e-005</b>	<b>2.6200e-003</b>	<b>0.0000</b>	<b>7.1223</b>	<b>7.1223</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>7.1256</b>

### 3.6 Architectural Coating - 2025 Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	0.5683				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1509	0.1866	3.4000e-004	6.4000e-003	6.4000e-003	6.4000e-003	6.0700e-003	6.0700e-003	6.0700e-003	0.0000	29.6873	29.6873	6.5000e-003	0.0000	29.8497
<b>Total</b>	<b>0.5854</b>	<b>0.1509</b>	<b>0.1866</b>	<b>3.4000e-004</b>	<b>6.4000e-003</b>	<b>6.4000e-003</b>	<b>6.4000e-003</b>	<b>6.0700e-003</b>	<b>6.0700e-003</b>	<b>6.0700e-003</b>	<b>0.0000</b>	<b>29.6873</b>	<b>29.6873</b>	<b>6.5000e-003</b>	<b>0.0000</b>	<b>29.8497</b>

### Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7900e-003	2.2400e-003	0.0263	1.0000e-004	0.0126	7.0000e-005	0.0126	3.3400e-003	7.0000e-005	3.4000e-003	0.0000	8.8767	8.8767	1.5000e-004	0.0000	8.8806

Total	3.7900e-003	2.2400e-003	0.0263	1.0000e-004	0.0126	7.0000e-005	0.0126	0.0126	3.3400e-003	7.0000e-005	3.4000e-003	0.0000	8.8767	8.8767	1.5000e-004	0.0000	8.8806
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**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Archit. Coating	0.5683				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5800e-003	0.0458	0.2095	3.4000e-004	5.2000e-004	5.2000e-004	5.2000e-004	5.2000e-004	5.2000e-004	5.2000e-004	0.0000	29.6872	29.6872	6.5000e-003	0.0000	29.8497
<b>Total</b>	<b>0.5729</b>	<b>0.0458</b>	<b>0.2095</b>	<b>3.4000e-004</b>	<b>5.2000e-004</b>	<b>5.2000e-004</b>	<b>5.2000e-004</b>	<b>5.2000e-004</b>	<b>5.2000e-004</b>	<b>5.2000e-004</b>	<b>0.0000</b>	<b>29.6872</b>	<b>29.6872</b>	<b>6.5000e-003</b>	<b>0.0000</b>	<b>29.8497</b>
MIT/yr																

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7900e-003	2.2400e-003	0.0263	1.0000e-004	0.0126	7.0000e-005	0.0126	3.3400e-003	7.0000e-005	3.4000e-003	0.0000	8.8767	8.8767	1.5000e-004	0.0000	8.8806
<b>Total</b>	<b>3.7900e-003</b>	<b>2.2400e-003</b>	<b>0.0263</b>	<b>1.0000e-004</b>	<b>0.0126</b>	<b>7.0000e-005</b>	<b>0.0126</b>	<b>3.3400e-003</b>	<b>7.0000e-005</b>	<b>3.4000e-003</b>	<b>0.0000</b>	<b>8.8767</b>	<b>8.8767</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>8.8806</b>
MIT/yr																

**3.7 Paving - 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															
Off-Road	0.0283	0.2670	0.4073	6.1000e-004		0.0130	0.0130		0.0120	0.0120	0.0000	53.2386	53.2386	0.0169	0.0000	53.6615
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0283</b>	<b>0.2670</b>	<b>0.4073</b>	<b>6.1000e-004</b>		<b>0.0130</b>	<b>0.0130</b>		<b>0.0120</b>	<b>0.0120</b>	<b>0.0000</b>	<b>53.2386</b>	<b>53.2386</b>	<b>0.0169</b>	<b>0.0000</b>	<b>53.6615</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															
Hauling	2.5000e-004	7.7300e-003	2.6300e-003	4.0000e-005	8.5000e-004	1.0000e-005	8.6000e-004	2.3000e-004	1.0000e-005	2.5000e-004	0.0000	3.5189	3.5189	1.5000e-004	0.0000	3.5227
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2900e-003	7.6000e-004	8.9800e-003	3.0000e-005	4.2800e-003	3.0000e-005	4.3100e-003	1.1400e-003	2.0000e-005	1.1600e-003	0.0000	3.0300	3.0300	5.0000e-005	0.0000	3.0313
<b>Total</b>	<b>1.5400e-003</b>	<b>8.4900e-003</b>	<b>0.0116</b>	<b>7.0000e-005</b>	<b>5.1300e-003</b>	<b>4.0000e-005</b>	<b>5.1700e-003</b>	<b>1.3700e-003</b>	<b>3.0000e-005</b>	<b>1.4100e-003</b>	<b>0.0000</b>	<b>6.5489</b>	<b>6.5489</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>6.5540</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr															

Off-Road	8.1800e-003	0.0700	0.4469	6.1000e-004	9.7000e-004	9.7000e-004	9.7000e-004	9.7000e-004	0.0000	53.2385	53.2385	0.0169	0.0000	53.6614
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>8.1800e-003</b>	<b>0.0700</b>	<b>0.4469</b>	<b>6.1000e-004</b>	<b>9.7000e-004</b>	<b>9.7000e-004</b>	<b>9.7000e-004</b>	<b>9.7000e-004</b>	<b>0.0000</b>	<b>53.2385</b>	<b>53.2385</b>	<b>0.0169</b>	<b>0.0000</b>	<b>53.6614</b>

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	2.5000e-004	7.7300e-003	2.6300e-003	4.0000e-005	8.5000e-004	1.0000e-005	8.6000e-004	2.3000e-004	1.0000e-005	2.5000e-004	0.0000	3.5189	3.5189	1.5000e-004	0.0000	3.5227
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2900e-003	7.6000e-004	8.9800e-003	3.0000e-005	4.2800e-003	3.0000e-005	4.3100e-003	1.1400e-003	2.0000e-005	1.1600e-003	0.0000	3.0300	3.0300	5.0000e-005	0.0000	3.0313
<b>Total</b>	<b>1.5400e-003</b>	<b>8.4900e-003</b>	<b>0.0116</b>	<b>7.0000e-005</b>	<b>5.1300e-003</b>	<b>4.0000e-005</b>	<b>5.1700e-003</b>	<b>1.3700e-003</b>	<b>3.0000e-005</b>	<b>1.4100e-003</b>	<b>0.0000</b>	<b>6.5489</b>	<b>6.5489</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>6.5540</b>



Gateway Crossing, Santa Clara, California

DPM Emissions and Modeling Emission Rates

Emissions Model Year	Activity	DPM (ton/year)	Area Source	DPM Emissions			Modeled Area (m <sup>2</sup> )	DPM Emission Rate (g/s/m <sup>2</sup> )
				(lb/yr)	(lb/hr)	(g/s)		
2020	Phase2+Phase 3	0.2747	DPM	549.4	0.16725	2.11E-02	23,666	8.90E-07
2021	Phase 3	0.0241	DPM	48.2	0.01467	1.85E-03	11,834	1.56E-07
2022	Phase 4	0.2335	DPM	467.0	0.14216	1.79E-02	13,409	1.34E-06
2023	Phase 4	0.0293	DPM	58.6	0.01784	2.25E-03	13,409	1.68E-07
2024	Phase 5	0.1795	DPM	359.0	0.10928	1.38E-02	5,388	2.56E-06
2025	Phase 5	0.0592	DPM	118.4	0.03604	4.54E-03	5,388	8.43E-07
		<b>0.5015</b>		<b>1003.0</b>	<b>0.3053</b>	<b>0.0385</b>		

Operation Hours  
 hr/day = 9 (7am - 4pm)  
 days/yr = 365  
 hours/year = 3285

Gateway Crossing, Santa Clara, California

PM2.5 Fugitive Dust Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions				Modeled Area (m <sup>2</sup> )	PM2.5 Emission Rate (g/s/m <sup>2</sup> )
			(ton/year)	(lb/yr)	(lb/hr)	(g/s)		
2020	Phase2+Phase 3	FUG	0.1550	310.1	0.09439	1.19E-02	23,666	5.03E-07
2021	Phase 3	FUG	0.0003	0.6	0.00018	2.30E-05	11,834	1.94E-09
2022	Phase 4	FUG	0.1962	392.4	0.11945	1.51E-02	13,409	1.12E-06
2023	Phase 4	FUG	0.0014	2.9	0.00088	1.10E-04	13,409	8.24E-09
2024	Phase 5	FUG	0.1586	317.2	0.09656	1.22E-02	5,388	2.26E-06
2025	Phase 5	FUG	0.0201	40.2	0.01224	1.54E-03	5,388	2.86E-07
<b>Total</b>			<b>0.3763</b>	<b>752.7</b>	<b>0.2291</b>	<b>0.0289</b>		

Operation Hours  
 hr/day = 9 (7am - 4pm)  
 days/yr = 365  
 hours/year = 3285

**Gateway Crossing, Santa Clara, California**  
**Maximum DPM Cancer Risk Calculations From Construction**  
**Impacts at Building 3 Receptors-1.5 meter**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)<sup>-1</sup>  
 ASF = Age sensitivity factor for specified age group  
 ED = Exposure duration (years)  
 AT = Averaging time for lifetime cancer risk (years)  
 FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C<sub>air</sub> x DBR x A x (EF/365) x 10<sup>-6</sup>

Where: C<sub>air</sub> = concentration in air (µg/m<sup>3</sup>)  
 DBR = daily breathing rate (L/kg body weight-day)  
 A = Inhalation absorption factor  
 EF = Exposure frequency (days/year)  
 10<sup>-6</sup> = Conversion factor

**Values**

Age --> Parameter	Infant/Child				Adult
	3rd Trimester	0 - 2	2 - 9	2 - 16	16 - 30
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

\* 95th percentile breathing rates for infants and 80th percentile for children and adults

**Construction Cancer Risk by Year - Maximum Impact Receptor Location**

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Fugitive PM2.5	Total PM2.5
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor			
			Year	Annual			Year	Annual				
0	0.25	-0.25 - 0*	2022	0.6169	10	8.39	2022	-	-	-		
1	1	0 - 1	2022	0.6169	10	101.33	2022	0.6169	1	1.77	0.7602	1.377
2	1	1 - 2	2023	0.0774	10	12.70	2023	0.0774	1	0.22	0.0056	0.083
3	1	2 - 3	2024	0.0058	3	0.17	2024	0.0058	1	0.02	0.0050	0.011
4	1	3 - 4	2025	0.0019	3	0.05	2025	0.0006	1	0.00	0.0000	0.001
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
<b>Total Increased Cancer Risk</b>						<b>122.64</b>				<b>2.01</b>		

\* Third trimester of pregnancy

Gateway Crossing, Santa Clara, California

Maximum Impacts at Building 3 MEI location

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index (-)	Maximum Annual PM2.5 Concentration ( $\mu\text{g}/\text{m}^3$ )
	Exhaust PM10/DPM ( $\mu\text{g}/\text{m}^3$ )	Fugitive PM2.5 ( $\mu\text{g}/\text{m}^3$ )	Child	Adult		
	2022	0.6169	0.7602	109.7	1.8	0.123
2023	0.0774	0.0056	12.7	0.2	0.015	0.08
2024	0.0058	0.0050	0.2	0.0	0.001	0.01
2025	0.0019	0.0000	0.0	0.0	0.000	0.00
<b>Total</b>			122.6	2.0		
<b>Maximum</b>	<b>0.6169</b>	<b>0.7602</b>			<b>0.123</b>	<b>1.38</b>

## Attachment 3: Rail Impacts Evaluation Methodology

Gateway Crossings, Santa Clara, CA  
**DPM Modeling - Rail Line Information and DPM and PM2.5 Emission Rates**  
**Caltrain Without Electrification - Diesel-Powered Passenger and Freight Trains**

Year	Description	Model No. Lines	Link Width (ft)	Link Width (m)	Link Length (ft)	Link Length (miles)	Link Length (m)	Release Height (m)	No. Trains per Day	Train Travel Speed (mph)	DPM Emission Rates			
											Average Daily Emission Rate (g/mi/day)	Average Daily Emission Rate (g/day)	Link Emission Rate (g/s)	Link Emission Rate (lb/hr)
2020	Caltrain - Stop at Station	1	12	3.7	2,858	0.54	871	5.0	50	10	117.3	63.5	7.35E-04	5.83E-03
	Caltrain - Bypass Station	1	12	3.7	2,858	0.54	871	5.0	25	40	74.5	40.3	4.67E-04	3.71E-03
	Amtrak - Stop at Station	1	12	3.7	2,858	0.54	871	5.0	8	10	17.6	9.5	1.10E-04	8.76E-04
	Amtrak - Bypass Station	1	12	3.7	2,858	0.54	871	5.0	2	40	5.7	3.1	3.58E-05	2.84E-04
	Freight Trains	1	12	3.7	2,858	0.54	871	5.0	10	40	53.4	28.9	3.35E-04	2.66E-03
	<b>Total</b>	-	-	-	-	-	-	-	-	<b>95</b>	-	<b>268.5</b>	<b>145.4</b>	<b>1.68E-03</b>
2021-2025	Caltrain - Stop at Station	1	12	3.7	2,858	0.54	871	5.0	76	10	142.0	76.9	8.90E-04	7.06E-03
	Caltrain - Bypass Station	1	12	3.7	2,858	0.54	871	5.0	15	40	36.2	19.6	2.27E-04	1.80E-03
	Amtrak - Stop at Station	1	12	3.7	2,858	0.54	871	5.0	8	10	14.1	7.6	8.83E-05	7.01E-04
	Amtrak - Bypass Station	1	12	3.7	2,858	0.54	871	5.0	2	40	4.6	2.5	2.86E-05	2.27E-04
	Freight Trains	1	12	3.7	2,858	0.54	871	5.0	10	40	43.7	23.6	2.73E-04	2.17E-03
	<b>Total</b>	-	-	-	-	-	-	-	-	<b>111</b>	-	<b>240.5</b>	<b>130.2</b>	<b>1.51E-03</b>
2026-2049	Caltrain - Stop at Station	1	12	3.7	2,858	0.54	871	5.0	76	10	44.3	24.0	2.78E-04	2.20E-03
	Caltrain - Bypass Station	1	12	3.7	2,858	0.54	871	5.0	15	40	11.3	6.1	7.07E-05	5.61E-04
	Amtrak - Stop at Station	1	12	3.7	2,858	0.54	871	5.0	8	10	4.4	2.4	2.75E-05	2.19E-04
	Amtrak - Bypass Station	1	12	3.7	2,858	0.54	871	5.0	2	40	1.4	0.8	8.93E-06	7.09E-05
	Freight Trains	1	12	3.7	2,858	0.54	871	5.0	10	40	15.8	8.5	9.89E-05	7.85E-04
	<b>Total</b>	-	-	-	-	-	-	-	-	<b>111</b>	-	<b>77.2</b>	<b>41.8</b>	<b>4.84E-04</b>

Notes: Emission based on Emission Factors for Locomotives, USEPA 2009 (EPA-420-F-09-025)  
Average emissions calculated for 2020 and periods 2021-2025, 2026-2049.  
Fuel correction factors from Offroad Modeling Change Technical memo, Changes to the Locomotive Inventory, CARB July 2006.  
PM2.5 calculated as 92% of PM emissions (CARB CEIDERS PM2.5 fractions)  
Passenger trains assumed to operate for 24 hours per day  
Freight trains assumed to operate for 24 hours per day

Caltrain Diesel Trains- without electrification									
	2020			2021 - 2025			2026 - 2049		
	Stop at Station	Skip Station	Total	Stop at Station	Skip Station	Total	Stop at Station	Skip Station	Total
Arrive/Depart Station									
Passenger trains - weekday	58	34	92	94	20	114	94	20	114
Passenger trains - weekend	28	4	32	28	4	32	28	4	32
Passenger trains - Sat only	4	0	4	4	0	4	4	0	4
Total Trains	90	38	128	126	24	150	126	24	150
Annual average daily trains	50	25	75	76	15	91	76	15	91
Locomotive horsepower			3285			3285			3285
Locomotive engine load =	0.1	0.5		0.1	0.5		0.1	0.5	
Other Diesel Passenger Trains (Amtrak Capitol Corridor & Coast Starlight)									
Arrive/Depart Station									
Passenger trains - weekday	8	2	10	8	2	10	8	2	10
Passenger trains - weekend	7	2	9	7	2	9	7	2	9
Passenger trains - Sat only	0	0	0	0	0	0	0	0	0
Total Trains =	15	4	19	15	4	19	15	4	19
Annual average daily trains	8	2	10	8	2	10	8	2	10
Locomotive horsepower =			3200			3200			3200
Locomotives per train =			1			1			1
Locomotive engine load =	0.1	0.5		0.1	0.5		0.1	0.5	
Freight Trains - All Diesel & Bypass Station									
Freight trains per day			10			10			10
Locomotive horsepower			2300			2300			2300
Locomotives per train			2			2			2
Total horsepower			4600			4600			4600
Locomotive engine load			0.5			0.5			0.5

Locomotive DPM Emission Factors (g/hp-hr)			
Train Type	2020	2021-2025	2026-2049
	Passenger	0.101	0.0808
Freight	0.111	0.0904	0.033

\* average emissions for period.

PM2.5 to PM ratio = 0.92  
DPM to PM ratio = 1  
CARB Fuel Adj Factor  
2010 2011+  
Passenger 0.717 0.709  
Freight 0.851 0.840



**Gateway Crossings, Santa Clara, CA - 1st Floor Receptors (1.5 meter receptor height)  
AERMOD Railroad DPM Risk Modeling Parameters and Maximum Cancer Risk at Project Site  
Caltrain Without Electrification - Diesel-Powered Passenger and Freight Trains**

**Cancer Risk Calculation Method**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

- Where: CPF = Cancer potency factor (mg/kg-day)<sup>-1</sup>  
ASF = Age sensitivity factor for specified age group  
ED = Exposure duration (years)  
AT = Averaging time for lifetime cancer risk (years)  
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C<sub>air</sub> x DBR x A x (EF/365) x 10<sup>-6</sup>

- Where: C<sub>air</sub> = concentration in air (µg/m<sup>3</sup>)  
DBR = daily breathing rate (L/kg body weight-day)  
A = Inhalation absorption factor  
EF = Exposure frequency (days/year)  
10<sup>-6</sup> = Conversion factor

**Values**

**Cancer Potency Factors (mg/kg-day)<sup>-1</sup>**

TAC	CPF
DPM	1.10E+00

Age --> Parameter	Infant/Child			Adult
	3rd Trimester	0 - <2	2 - <16	16 - 30
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

\* 95th percentile breathing rates for infants and 80th percentile for children and adults

**Rail Locomotive Cancer Risk by Year - Maximum Impact Receptor Location**

Exposure Year	Year	Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0	2020	0.25	-0.25 - 0*	10	0.0290	0.395
1	2020	1	1	10	0.0290	4.766
2	2021	1	2	10	0.0259	4.259
3	2022	1	3	3	0.0259	0.670
4	2023	1	4	3	0.0259	0.670
5	2024	1	5	3	0.0259	0.670
6	2025	1	6	3	0.0259	0.670
7	2026	1	7	3	0.0083	0.216
8	2027	1	8	3	0.0083	0.216
9	2028	1	9	3	0.0083	0.216
10	2029	1	10	3	0.0083	0.216
11	2030	1	11	3	0.0083	0.216
12	2031	1	12	3	0.0083	0.216
13	2032	1	13	3	0.0083	0.216
14	2033	1	14	3	0.0083	0.216
15	2034	1	15	3	0.0083	0.216
16	2035	1	16	3	0.0083	0.216
17	2036	1	17	1	0.0083	0.024
18	2037	1	18	1	0.0083	0.024
19	2038	1	19	1	0.0083	0.024
20	2039	1	20	1	0.0083	0.024
21	2040	1	21	1	0.0083	0.024
22	2041	1	22	1	0.0083	0.024
23	2042	1	23	1	0.0083	0.024
24	2043	1	24	1	0.0083	0.024
25	2044	1	25	1	0.0083	0.024
26	2045	1	26	1	0.0083	0.024
27	2046	1	27	1	0.0083	0.024
28	2047	1	28	1	0.0083	0.024
29	2048	1	29	1	0.0083	0.024
30	2049	1	30	1	0.0083	0.024
<b>Total Increased Cancer Risk</b>						<b>14.6</b>

\* Third trimester of pregnancy

Gateway Crossings, Santa Clara, CA  
DPM Modeling - Rail Line Information and DPM and PM2.5 Emission Rates  
Caltrain Electrification and Diesel-Powered Freight Trains

Year	Description	Model No. Lines	Link Width (ft)	Link Width (m)	Link Length (ft)	Link Length (miles)	Link Length (m)	Release Height (m)	No. Trains per Day	Train Travel Speed (mph)	DPM Emission Rates			
											Average Daily Emission Rate (g/mi/day)	Average Daily Emission Rate (g/day)	Link Emission Rate (g/s)	Link Emission Rate (lb/hr)
2020	Caltrain - Stop at Station	1	12	3.7	2,858	0.54	871	5.0	50	10	117.3	63.5	7.35E-04	5.83E-03
	Caltrain - Bypass Station	1	12	3.7	2,858	0.54	871	5.0	25	40	74.5	40.3	4.67E-04	3.71E-03
	Amtrak - Stop at Station	1	12	3.7	2,858	0.54	871	5.0	8	10	17.6	9.5	1.10E-04	8.76E-04
	Amtrak - Bypass Station	1	12	3.7	2,858	0.54	871	5.0	2	40	5.7	3.1	3.58E-05	2.84E-04
	Freight Trains	1	12	3.7	2,858	0.54	871	5.0	10	40	53.4	28.9	3.35E-04	2.66E-03
	<b>Total</b>	-	-	-	-	-	-	-	-	<b>95</b>	-	<b>268.5</b>	<b>145.4</b>	<b>1.68E-03</b>
2021-2025	Caltrain - Stop at Station	1	12	3.7	2,858	0.54	871	5.0	1	10	1.1	0.6	7.09E-06	5.63E-05
	Caltrain - Bypass Station	1	12	3.7	2,858	0.54	871	5.0	18	40	45.3	24.5	2.83E-04	2.25E-03
	Amtrak - Stop at Station	1	12	3.7	2,858	0.54	871	5.0	8	10	14.1	7.6	8.83E-05	7.01E-04
	Amtrak - Bypass Station	1	12	3.7	2,858	0.54	871	5.0	2	40	4.6	2.5	2.86E-05	2.27E-04
	Freight Trains	1	12	3.7	2,858	0.54	871	5.0	10	40	43.7	23.6	2.73E-04	2.17E-03
	<b>Total</b>	<b>1</b>	<b>12</b>	<b>3.7</b>	<b>2,858</b>	<b>0.54</b>	<b>871</b>	<b>5.0</b>	<b>38</b>	-	-	<b>108.7</b>	<b>58.8</b>	<b>6.81E-04</b>
2026-2049	Caltrain - Stop at Station	1	12	3.7	2,858	0.54	871	5.0	0	10	0.0	0.0	0.00E+00	0.00E+00
	Caltrain - Bypass Station	1	12	3.7	2,858	0.54	871	5.0	3	40	2.2	1.2	1.38E-05	1.10E-04
	Amtrak - Stop at Station	1	12	3.7	2,858	0.54	871	5.0	8	10	4.4	2.4	2.75E-05	2.19E-04
	Amtrak - Bypass Station	1	12	3.7	2,858	0.54	871	5.0	2	40	1.4	0.8	8.93E-06	7.09E-05
	Freight Trains	1	12	3.7	2,858	0.54	871	5.0	10	40	15.8	8.5	9.89E-05	7.85E-04
	<b>Total</b>	<b>1</b>	<b>12</b>	<b>3.7</b>	<b>2,858</b>	<b>0.54</b>	<b>871</b>	<b>5.0</b>	<b>23</b>	-	-	<b>23.8</b>	<b>12.9</b>	<b>1.49E-04</b>

Notes: Emission based on Emission Factors for Locomotives, USEPA 2009 (EPA-420-F-09-025)  
Average emissions calculated for 2020 and periods 2021-2025, 2026-2049.  
Fuel correction factors from Offroad Modeling Change Technical memo, Changes to the Locomotive Inventory, CARB July 2006.  
PM2.5 calculated as 92% of PM emissions (CARB CEIDERS PM2.5 fractions)  
Passenger trains assumed to operate for 24 hours per day  
Freight trains assumed to operate for 24 hours per day

Caltrain Diesel Trains- with electrification	2020			2021 - 2025			2026 - 2049		
	Stop at Station	Skip Station	Total	Stop at Station	Skip Station	Total	Stop at Station	Skip Station	Total
Arrive/Depart Station									
Passenger trains - weekday =	58	34	92	0	24	24	0	4	4
Passenger trains - weekend =	28	4	32	0	4	4	0	0	0
Passenger trains - Sat only =	4	0	4	4	0	4	0	0	0
Total Trains =	90	38	128	4	28	32	0	4	4
Annual average daily trains =	50	25	75	1	18	19	0	3	3
Locomotive horsepower =	(before 2021) 3285			(before 2021) 3285			(before 2021) 3285		
	(2021 and later) 3467			(2021 and later) 3467			(2021 and later) 3467		
Locomotive engine load =	0.1	0.5		0.1	0.5		0.1	0.5	
<b>Other Passenger Trains (Amtrak Capitol Corridor &amp; Coast Starlight)</b>									
Arrive/Depart Station	Stop at Station	Skip Station	Total	Stop at Station	Skip Station	Total	Stop at Station	Skip Station	Total
Passenger trains - weekday =	8	2	10	8	2	10	8	2	10
Passenger trains - weekend =	7	2	9	7	2	9	7	2	9
Passenger trains - Sat only =	0	0	0	0	0	0	0	0	0
Total Trains =	15	4	19	15	4	19	15	4	19
Annual average daily trains =	8	2	10	8	2	10	8	2	10
Locomotive horsepower =	3200			3200			3200		
Locomotives per train =	1			1			1		
Locomotive engine load =	0.1	0.5		0.1	0.5		0.1	0.5	
<b>Freight</b>									
Freight trains per day =	10			10			10		
Locomotive horsepower =	2300			2300			2300		
Locomotives per train =	2			2			2		
Total horsepower =	4600			4600			4600		
Locomotive engine load =	0.5			0.5			0.5		

Train Type	Locomotive DPM Emission Factors (g/hp-hr)		2026-2049
	2019-2020	2021-2025	
Passenger	0.101	0.0808	0.025
Freight	0.111	0.0904	0.033

\* average emissions for period.

PM2.5 to PM ratio = 0.92

DPM to PM ratio = 1

CARB Fuel Adj Factor

2010 2011+

Passenger 0.717 0.709

Freight 0.851 0.840



**Gateway Crossings, Santa Clara, CA -1st Floor Rail Line DPM & PM2.5 Concentrations  
 AERMOD Risk Modeling Parameters and Maximum Concentrations  
 Caltrain Electrification and Diesel-Powered Amtrak and Freight Trains**

**Receptor Information**                      1st Floor Receptors  
 Number of Receptors                      395  
 Receptor Height =                            1.5 meters  
 Receptor distances =                        Various, receptors at residential units

**Meteorological Conditions**  
 BAAQMD San Jose Arpt Hourly Data    2006-2010  
 Land Use Classification                    urban  
 Wind speed =                                 variable  
 Wind direction =                            variable

**MEI Maximum Concentrations - Receptor Height = 1.5 m**

<b>Meteorological Data Years</b>	<b>Period Average DPM Concentration (<math>\mu\text{g}/\text{m}^3</math>)</b>		
	<b>2020</b>	<b>2021-2025</b>	<b>2026-2049</b>
2006-2010	0.02902	0.0121	0.0027
<b>Meteorological Data Years</b>	<b>Period Average PM2.5 Concentration (<math>\mu\text{g}/\text{m}^3</math>)</b>		
	<b>2020</b>	<b>2021-2025</b>	<b>2026-2049</b>
2006-2010	0.0267	0.0111	0.0025

**Gateway Crossings, Santa Clara, CA - 1st Floor Receptors (1.5 meter receptor height)**  
**AERMOD Railroad DPM Risk Modeling Parameters and Maximum Cancer Risk at Project Site**  
**Caltrain Electrification and Diesel-Powered Amtrak and Freight Trains**

**Cancer Risk Calculation Method**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

- Where: CPF = Cancer potency factor (mg/kg-day)<sup>-1</sup>  
 ASF = Age sensitivity factor for specified age group  
 ED = Exposure duration (years)  
 AT = Averaging time for lifetime cancer risk (years)  
 FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C<sub>air</sub> x DBR x A x (EF/365) x 10<sup>-6</sup>

- Where: C<sub>air</sub> = concentration in air (µg/m<sup>3</sup>)  
 DBR = daily breathing rate (L/kg body weight-day)  
 A = Inhalation absorption factor  
 EF = Exposure frequency (days/year)  
 10<sup>-6</sup> = Conversion factor

**Values**

**Cancer Potency Factors (mg/kg-day)<sup>-1</sup>**

TAC	CPF
DPM	1.10E+00

Age --> Parameter	Infant/Child			Adult
	3rd Trimester	0 - <2	2 - <16	16 - 30
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

\* 95th percentile breathing rates for infants and 80th percentile for children and adults

**Rail Locomotive Cancer Risk by Year - Maximum Impact Receptor Location**

Exposure Year	Year	Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0	2020	0.25	-0.25 - 0*	10	0.0290	0.395
1	2020	1	1	10	0.0290	4.766
2	2021	1	2	10	0.0121	1.984
3	2022	1	3	3	0.0121	0.312
4	2023	1	4	3	0.0121	0.312
5	2024	1	5	3	0.0121	0.312
6	2025	1	6	3	0.0121	0.312
7	2026	1	7	3	0.0027	0.070
8	2027	1	8	3	0.0027	0.070
9	2028	1	9	3	0.0027	0.070
10	2029	1	10	3	0.0027	0.070
11	2030	1	11	3	0.0027	0.070
12	2031	1	12	3	0.0027	0.070
13	2032	1	13	3	0.0027	0.070
14	2033	1	14	3	0.0027	0.070
15	2034	1	15	3	0.0027	0.070
16	2035	1	16	3	0.0027	0.070
17	2036	1	17	1	0.0027	0.008
18	2037	1	18	1	0.0027	0.008
19	2038	1	19	1	0.0027	0.008
20	2039	1	20	1	0.0027	0.008
21	2040	1	21	1	0.0027	0.008
22	2041	1	22	1	0.0027	0.008
23	2042	1	23	1	0.0027	0.008
24	2043	1	24	1	0.0027	0.008
25	2044	1	25	1	0.0027	0.008
26	2045	1	26	1	0.0027	0.008
27	2046	1	27	1	0.0027	0.008
28	2047	1	28	1	0.0027	0.008
29	2048	1	29	1	0.0027	0.008
30	2049	1	30	1	0.0027	0.008
<b>Total Increased Cancer Risk</b>						<b>9.2</b>

\* Third trimester of pregnancy

## Attachment 4: Generator Risk Modeling

**Gateway Crossings**  
**Standby Emergency Generator Impacts**

Rating: 100 kW  
 134 HP  
 Operating Hours per Unit: 1 hours/day  
 50 hours/year  
 Load 0.74 from CARB OFFROAD  
 Standby Emergency Generator Emissions (PER UNIT)

Units	Criteria Pollutants						
	ROG	NOX	CO	SOX	PM10	PM2.5	CO2e
tons/yr (from CalEEMod)	0.01	0.02	0.02	0.00	0.0008	0.0008	
metric tons/yr	—	—	—	—	—	—	8
g/HP-hr	0.75	2.10	2.72	0.00	0.110	0.110	
lbs/hr	0.22	0.62	0.80	0.00	0.032	0.032	
lbs/yr	11.08	31.00	40.20	0.06	1.620	1.620	
Average annual lbs/day	0.03	0.08	0.11	0.00	0.004	0.004	

**Community Risk**

	<u>Worst Location</u>	<u>Construction MEI</u>	
Cancer Risk at Source = at closest unit and constr. MEI	2.74E+00 ~160	0,33	single unit with OEHHA Adj. ~800
Annual PM2.5 at Source at closest unit and constr. MEI	0.005	<0.001	

Attachment 5: Roadway Modeling

# Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

## INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.

- County: Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.
- Roadway Direction: Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.
- Side of the Roadway: Identify on which side of the roadway the project is located.
- Distance from Roadway: Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.
- Annual Average Daily Traffic (AADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: <http://www.baqmfd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>.

Notes and References listed below the Search Boxes

## Search Parameters

County:

Roadway Direction:

Side of the Roadway:

Distance from Roadway:  feet

Annual Average Daily Traffic (AADT):

## Results

### Santa Clara County

#### NORTH-SOUTH DIRECTIONAL ROADWAY

PM2.5 annual average

0.070

( $\mu\text{g}/\text{m}^3$ )

Cancer Risk

3.08

(per million)

Coleman

Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Adjusted for EMFAC2014 for 2018

2.12

(per million)

Note that EMFAC2014 predicts DSL PM2.5 aggregate rates in 2018 that are 46% of EMFAC2011 for 2014. TOG gasoline rates are 56% of EMFAC2011 year 2014 rates. This is for light- and medium-duty vehicles traveling at 30 mph for Bay Area

## Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4. CalQtor air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

# Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

## INSTRUCTIONS:

- Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.
- County: Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.
- Roadway Direction: Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.
- Side of the Roadway: Identify on which side of the roadway the project is located.
- Distance from Roadway: Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.
- Annual Average Daily Traffic (AADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: <http://www.baqmfd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>.

Notes and References listed below the Search Boxes

## Search Parameters

County:

Roadway Direction:

Side of the Roadway:

Distance from Roadway:  feet

Annual Average Daily Traffic (AADT):

## Results

### Santa Clara County

#### EAST-WEST DIRECTIONAL ROADWAY

PM2.5 annual average

0.059

( $\mu\text{g}/\text{m}^3$ )

Cancer Risk

2.33

(per million)

Brokaw Rd

Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Adjusted for EMFAC2014 for 2018

1.60

(per million)

Note that EMFAC2014 predicts DSL PM2.5 aggregate rates in 2018 that are 46% of EMFAC2011 for 2014. TOG gasoline rates are 56% of EMFAC2011 year 2014 rates. This is for light- and medium-duty vehicles traveling at 30 mph for Bay Area

## Notes and References:

- Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
- Roadways were modeled using CALINE4 CalQor air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
- Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

## Attachment 6: Stationary Source Modeling





Cancer Risk and Chronic Hazard Index Distance Adjustment Multiplier for Diesel IC Engines		
Meters	Feet	Multiplier
25	83	0.85
30	99	0.73
35	116	0.64
40	132	0.58
50	165	0.5
60	198	0.41
70	231	0.31
80	264	0.28
90	297	0.25
100	330	0.22
110	363	0.18
120	396	0.16
130	429	0.15
131.718	435	0.140827
140	462	0.14
150	495	0.12
160	528	0.1
180	594	0.09
200	661	0.08
220	727	0.07
240	793	0.06
260	859	0.05
280	925	0.04

Cancer Risk and Chronic Hazard Index Distance Adjustment Multiplier for Gasoline Dispensing Facilities					
Meters	Feet	Multiplier	Meters	Feet	Multiplier
20	66	1	140	459	0.052
25	82	0.728	145	476	0.049
30	98	0.559	150	492	0.046
35	115	0.445	155	509	0.044
40	131	0.365	160	525	0.042
45	148	0.305	165	541	0.04
50	164	0.26	170	558	0.038
55	180	0.225	175	574	0.036
60	197	0.197	180	591	0.034
65	213	0.174	185	607	0.033
70	230	0.155	190	623	0.031
75	246	0.139	195	640	0.03
80	262	0.126	200	656	0.029
85	279	0.114	205	673	0.028
90	295	0.104	210	689	0.027
95	312	0.096	220	722	0.025
100	328	0.088	230	755	0.023
110	361	0.076	250	820	0.02
120	394	0.066	270	886	0.018
130	427	0.058	290	951	0.016



Plant# 15839 Santa Clara Police Facility  
601 El Camino Real  
Santa Clara, CA 95050

BAY AREA AIR QUALITY MANAGEMENT DISTRICT Printed: MAY 10, 2017  
DETAIL POLLUTANTS - ABATED  
MOST RECENT P/O APPROVED (2017)

[C]urrent, [A]rchive, or [F]uture? c  
[P]lant, [S]ource, [A]bate. device, or [E]mis. Point? p

Santa Clara Police Facility (P# 15839)

CURRENT Sources:

- 1 Emergency Standby Generator: 750 KW/ 1006 HP, 601 ECR, San Standby Diesel engine, 1114 hp, Caterpillar S/N BLG00565, 1649 cu in C22BG098 /,P1,
- 3 Police Department #1, 601 ECR (Benton, Santa Clara, #2474) Standby Diesel engine, 404 hp, Detroit Diesel S/N 06VF221536, 549 cu in C22AG098 /,P3,

No CURRENT Abatement Devices

CURRENT Emission Points:

- 1 train: ,S1,/
- 3 train: ,S3,/

S# SOURCE NAME

MATERIAL SOURCE CODE  
THROUGHPUT DATE POLLUTANT CODE LBS/DAY

S#	SOURCE NAME	MATERIAL	SOURCE CODE	THROUGHPUT	DATE	POLLUTANT	CODE	LBS/DAY
1	Emergency Standby Generator: 750 KW/ 1006 HP, 601 ECR, Sant							
			C22BG098					
		Benzene		41		3.37E-04		
		Formaldehyde		124		2.79E-05		
		Organics (other, including		990		1.63E-02		
		Arsenic (all)		1030		2.93E-07		
		Beryllium (all) pollutant		1040		1.72E-07		
		Cadmium		1070		7.33E-07		
		Chromium (hexavalent)		1095		1.52E-08		
		Lead (all) pollutant		1140		6.22E-07		
		Manganese		1160		9.76E-07		
		Nickel pollutant		1180		1.19E-05		
		Mercury (all) pollutant		1190		2.07E-07		
		Diesel Engine Exhaust Part		1350		2.24E-03		
		PAH's (non-speciated)		1840		1.55E-06		
		Nitrous Oxide (N2O)		2030		9.02E-05		
		Nitrogen Oxides (part not		2990		1.41E-01		
		Sulfur Dioxide (SO2)		3990		1.10E-04		
		Carbon Monoxide (CO) pollu		4990		6.23E-02		
		Carbon Dioxide, non-biogen		6960		1.13E+01		
		Methane (CH4)		6970		4.51E-04		
3	Police Department #1, 601 ECR							
			C22AG098					
		Benzene		41		1.00E-03		
		Formaldehyde		124		8.27E-05		
		Organics (other, including		990		1.17E-02		
		Arsenic (all)		1030		8.71E-07		
		Beryllium (all) pollutant		1040		5.10E-07		
		Cadmium		1070		2.18E-06		
		Chromium (hexavalent)		1095		4.50E-08		
		Lead (all) pollutant		1140		1.85E-06		
		Manganese		1160		2.90E-06		
		Nickel pollutant		1180		3.52E-05		
		Mercury (all) pollutant		1190		6.16E-07		
		Diesel Engine Exhaust Part		1350		8.00E-03		
		PAH's (non-speciated)		1840		4.59E-06		
		Nitrous Oxide (N2O)		2030		2.68E-04		
		Nitrogen Oxides (part not		2990		2.43E-01		
		Sulfur Dioxide (SO2)		3990		3.27E-04		
		Carbon Monoxide (CO) pollu		4990		1.39E-01		
		Carbon Dioxide, non-biogen		6960		3.35E+01		
		Methane (CH4)		6970		1.34E-03		

PLANT TOTAL:

lbs/day Pollutant

- 1.16E-06 Arsenic (all) (1030)
- 1.34E-03 Benzene (41)
- 6.82E-07 Beryllium (all) pollutant (1040)
- 2.91E-06 Cadmium (1070)
- 4.48E+01 Carbon Dioxide, non-biogenic CO2 (6960)
- 2.01E-01 Carbon Monoxide (CO) pollutant (4990)
- 6.02E-08 Chromium (hexavalent) (1095)
- 1.02E-02 Diesel Engine Exhaust Particulate Matter (1350)
- 1.11E-04 Formaldehyde (124)
- 2.47E-06 Lead (all) pollutant (1140)
- 3.87E-06 Manganese (1160)
- 8.23E-07 Mercury (all) pollutant (1190)
- 1.79E-03 Methane (CH4) (6970)
- 4.71E-05 Nickel pollutant (1180)
- 3.84E-01 Nitrogen Oxides (part not spec elsewhere) (2990)
- 3.58E-04 Nitrous Oxide (N2O) (2030)
- 2.80E-02 Organics (other, including CH4) (990)
- 6.14E-06 PAH's (non-speciated) (1840)
- 4.36E-04 Sulfur Dioxide (SO2) (3990)

Plant# 10821 Hewlett-Packard Aviation  
 1210 Aviation Avenue  
 San Jose, CA 95110  
 Plant Closed: 02/05/16  
 Transfer to New Plant# 23329  
 List ARCHIVED devices (Y/N)? n

Plant# 23329 Hewlett Packard Enterprise Company  
 1210 Aviation Avenue  
 San Jose, CA 95110

[C]urrent, [A]rchive, or [F]uture? c  
 [P]lant, [S]ource, [A]bate. device, or [E]mis. Point? p

CURRENT Sources:

- 1 HP Airport Olympian D200P4  
 Standby Diesel engine, 300 hp, Caterpillar, 531 cu in  
 C22AG098 /,P1,
- 2 Sk Parts Washer  
 Degreaser, Methylated siloxane solvent, 59 deg F  
 SD01A810 no train

No CURRENT Abatement Devices

CURRENT Emission Points:

- 1 train: ,S1,/

BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
 DETAIL POLLUTANTS - ABATED  
 MOST RECENT P/O APPROVED (2016)

Printed: MAY 10, 2017

Hewlett-Packard Aviation (P# 10821)

S# SOURCE NAME  
 MATERIAL SOURCE CODE  
 THROUGHPUT DATE POLLUTANT CODE LBS/DAY

S#	SOURCE NAME	MATERIAL	SOURCE CODE	THROUGHPUT	DATE	POLLUTANT	CODE	LBS/DAY
1	HP Airport Olympian D200P4							
	C22AG098							
		Benzene	41	2.19E-05				
		Formaldehyde	124	1.81E-06				
		Organics (other, including	990	1.06E-03				
		Arsenic (all)	1030	1.91E-08				
		Beryllium (all) pollutant	1040	1.12E-08				
		Cadmium	1070	4.77E-08				
		Chromium (hexavalent)	1095	9.86E-10				
		Lead (all) pollutant	1140	4.04E-08				
		Manganese	1160	6.35E-08				
		Nickel pollutant	1180	7.71E-07				
		Mercury (all) pollutant	1190	1.35E-08				
		Diesel Engine Exhaust Part	1350	2.10E-04				
		PAH's (non-speciated)	1840	1.01E-07				
		Nitrous Oxide (N2O)	2030	5.87E-06				
		Nitrogen Oxides (part not	2990	1.54E-02				
		Sulfur Dioxide (SO2)	3990	7.15E-06				
		Carbon Monoxide (CO) pollu	4990	3.35E-03				
		Carbon Dioxide, non-biogen	6960	7.33E-01				
		Methane (CH4)	6970	2.93E-05				
2	Sk Parts Washer							
	SD01A810							
		Methylated siloxane solven	810	0.00E+00				

PLANT TOTAL:  
 lbs/day Pollutant

- 1.91E-08 Arsenic (all) (1030)
- 2.19E-05 Benzene (41)
- 1.12E-08 Beryllium (all) pollutant (1040)
- 4.77E-08 Cadmium (1070)
- 7.33E-01 Carbon Dioxide, non-biogenic CO2 (6960)
- 3.35E-03 Carbon Monoxide (CO) pollutant (4990)
- 9.86E-10 Chromium (hexavalent) (1095)
- 2.10E-04 Diesel Engine Exhaust Particulate Matter (1350)
- 1.81E-06 Formaldehyde (124)
- 4.04E-08 Lead (all) pollutant (1140)
- 6.35E-08 Manganese (1160)
- 1.35E-08 Mercury (all) pollutant (1190)
- 2.93E-05 Methane (CH4) (6970)
- 0.00E+00 Methylated siloxane solvent (810)
- 7.71E-07 Nickel pollutant (1180)
- 1.54E-02 Nitrogen Oxides (part not spec elsewhere) (2990)
- 5.87E-06 Nitrous Oxide (N2O) (2030)
- 1.06E-03 Organics (other, including CH4) (990)
- 1.01E-07 PAH's (non-speciated) (1840)
- 7.15E-06 Sulfur Dioxide (SO2) (3990)