Appendix A

Air Quality and GHG Assessment

3625 Peterson Way Office Project
Environmental Impact Report

City of Santa Clara

3625 PETERSON WAY OFFICE DEVELOPMENT AIR QUALITY AND GHG ASSESSMENT

San Jose, California

March 15, 2018
Updated July 20, 2019

Prepared for:

Amber Sharpe
David J. Powers & Associates, Inc.
1871 The Alameda, Suite 200
San José, CA 95126

Prepared by:

James Reyff
ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 E. Cotati Ave
Cotati, CA 94931
(707) 794-0400

Project: 18-015

Introduction

The purpose of this report is to address air quality and greenhouse gas (GHG) impacts associated with an office complex development proposed at 3625 Peterson Way in Santa Clara, CA. The project site is currently occupied by two-story light-industry office building approximately 200,000 square feet (sf) in size. The project proposes to demolish the existing structures and construct up to 687,000 sf of office space plus parking. Air pollutant and GHG emissions associated with construction and operation of the project were modeled. In addition, the potential construction health risk impact to nearby sensitive receptors and the impact of existing toxic air contaminant (TAC) sources affecting the proposed residences were evaluated. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD).

Project Description

The project proposes to demolish the existing 200,000 sf of buildings and parking lot and construct two, approximately 338,000-sf office buildings, for a total of 676,310 square feet and a parking structure. In addition, the project would include a 13,370-sf amenity area above the parking structure. The two eight-story office buildings would be approximately 130 feet tall to the parapet and 138 feet tall to the top of the roof screen. The project would provide approximately 370 surface parking spaces. The parking structure, in combination with surface parking, would provide approximately 2,190 parking spaces. Development of the project will require the excavation and export of approximately 19,000 cubic yards of soil. Construction of the project would begin in 2021 and last about 23 months.

Setting

The project is located in 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_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). 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_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ 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 Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines were published in February of 2015.[1]

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, and elementary schools. 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. There are no sensitive receptors within 1,000 feet of the project site. The closest sensitive receptors to the project site are single-family residences over 1,400 feet west-northwest, opposite of U.S. 101 on Sandia Avenue.

Regulatory Agencies

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The BAAQMD

[1] 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.

has recently published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.[2]

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 NO_X and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified DPM 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 particulate matter and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[2]

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.[3] 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

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

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

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 $PM_{2.5}$ 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_X emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, 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_X 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_X.

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 California Environmental Quality Act (*CEQA) Air Quality Guidelines*[4] 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

[4] Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.

thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions.

Bay Area Clean Air Plan

The BAAQMD is responsible for developing a Clean Air Plan which guides the region's air quality planning efforts to attain the CAAQS. The BAAQMD's 2017 Clean Air Plan is the latest Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO_X), particulate matter and greenhouse gas emissions. The Bay Area 2017 Clean Air Plan, which was adopted on April 19, 2017 by the BAAQMD's board of directors:

- Updates the Bay Area 2010 Clean Air Plan in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
- Provides a control strategy to reduce ozone, particulate matter (PM), air toxics, and greenhouse gases in a single, integrated plan;
- Reviews progress in improving air quality in recent years; and
- Continues and updates emission control measures.

BAAQMD California Environmental Quality Act (CEQA) Air Quality Guidelines

The BAAQMD *CEQA Air Quality Guidelines*[5] 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.

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 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. However, the California Supreme Court accepted a portion of CBIA's petition to review the appellate court's decision to uphold BAAQMD's adoption of the thresholds. The specific portion of the argument considered was whether CEQA requires consideration of the effects of the environment on a project (as contrasted to the effects of a proposed project on the environment). On December 17, 2015, the California Supreme Court ruled that CEQA generally does not require an analysis of the effects of existing environmental

[5] Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. May.

conditions (e.g., air quality) on a project unless the project would exacerbate those conditions somehow through its construction and/or operation. In response to the legal issues, BAAQMD revised their CEQA Guidelines in May 2017.

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.

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 below1990 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 includes *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.

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). 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). Because the Supreme Court's holding concerns the effects of the environment on a project (as contrasted to the effects of a proposed project on the environment), and not the science behind the thresholds, the significance thresholds contained in the CEQA Air Quality Guidelines are applied to this project.

Table 1. Air Quality Significance Thresholds

Criteria Air Pollutant	**Construction Thresholds**	**Operational Thresholds**	
	Average Daily Emissions (lbs./day)	**Average Daily Emissions (lbs./day)**	**Annual Average Emissions (tons/year)**
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour avg) or 20.0 ppm (1-hour avg)	
Fugitive Dust	Construction Dust Ordinance or Best Management Practices	Not Applicable	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1,000-foot zone of influence)**	
Excess Cancer Risk	>10 per one million	>100 per one million	
Hazard Index	>1.0	>10.0	
Incremental annual $PM_{2.5}$	>0.3 µg/m^3	>0.8 µg/m^3	
Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less.			

Impacts and Mitigation Measures

Impact 1: 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 $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM_{10} 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_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NO_X), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. 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 AQ-1 would implement BAAQMD-recommended best management practices*.

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate 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. The model output from CalEEMod is included as *Attachment 1*.

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 construction build-out scenario, including equipment list and schedule, was based on information provided by the project applicant. The proposed project land uses were input into CalEEMod, which included: 689,000 sf as "General Office Building," 2,281 spaces entered as "Unenclosed Parking with Elevator," and 370 spaces as "Parking Lot." The site acreage is 14.50 acres, entered for the "General Office Building" use.

A construction information worksheet was provided that included demolition volume (i.e., 39,000 tons of debris removed), export of fill (approximately 19,000 cubic yards (cy) of soil export), cement truck trips (215 loads) and asphalt trips (150 loads). The worksheet indicates the project would be built out over a period of approximately 24 months, beginning in April 2021 and last through March 2023. Equipment usage was not provided, so the CalEEMod model

was relied upon, using the default assumptions. A trenching phase was added to the construction activity assumptions. Based on the CalEEMod default usage assumptions, there are an estimated 400 construction workdays. Average daily emissions were computed by dividing the total construction emissions by the number of construction days. Table 2 shows average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 2, predicted the construction period emissions would not exceed the BAAQMD significance thresholds.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. 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 AQ-1 would implement BAAQMD-recommended best management practices*.

Table 2. Construction Period Emissions

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total construction emissions (tons)	4.68 tons	9.22 tons	0.21 tons	0.20 tons
Average daily emissions (pounds/day)[1]	**23.4 lbs./day**	**46.1 lbs./day**	**1.1 lbs./day**	**1.0 lbs./day**
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	**No**	**No**	**No**	**No**
Notes: [1]Assumes 400 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 the project could possibly be constructed and begin operating would be 2023. Emissions associated with build-out later than 2023 would be lower.

Trip Generation Rates and Vehicle Travel

Hexagon Transportation Consultants predicted daily trip generation associated with the existing and proposed land uses[6]. 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. The project includes a TDM plan that is predicted by Hexagon to decrease vehicle miles traveled by more than 10 percent[7]. The minimum effect of the TDM plan was applied by reducing mobile emissions by 10 percent. 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 the 2016 Title 24 Building Standards. The project will be subject to newer, more stringent, energy efficiency standards; however, the CalEEMod model has not yet been updated to reflect these effects.

The electricity produced emission rate was modified in CalEEMod. CalEEMod has a Statewide default emission factor of 1,002 pounds of CO_2 per megawatt of electricity produced, which is based on a 2008 emissions rate. Silicon Valley Power (SVP) is the provider of electricity to the project. The latest available emission rate is for 2017, when SVP electricity emission rate was estimated at 423 pounds of carbon dioxide (CO_2) per MW of electricity provided[8]. The City's Climate Action Plan includes goals and policies to reduce GHG emission associated with SVP's electricity generation:

General Plan Goal:	*Eliminate coal from SVP's portfolio and increase use of natural gas and renewable energy*
Policies:	*Replace the use of coal in Silicon Valley Power's portfolio with natural gas by 2020.*

As a result, SVP's emission rate be reduced further as the utility acquires renewable or non-carbon emitting sources of electricity in the future. SVP's latest projections show an emission rate of 222 pounds of CO_2 per MW in 2023[9].

Stationary Equipment

Each of the two office buildings would include an emergency generator to provide emergency backup power in the event of a power failure. These generators have been identified as a 100-

[6] Hexagon. 2019. 3*625 Peterson Way Office Development TIA*. June 24.
[7] Hexagon. 2018. *3625 Peterson Way Office Development TDM Plan*. August 22.
[8] Hughes, Kathleen. Acting Division Manager for Joint Powers, Resources Division. Silicon Valley Power. Personal communication. February 6, 2019.
[9] Hughes, Kathleen. Acting Division Manager for Joint Powers, Resources Division. Silicon Valley Power. Personal communication. October 16, 2017.

kilowatt (kW) standby gen set. Preliminary plans show that these generators would be powered by a Caterpillar Series C4.4 diesel engine. The generators 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 operation was included in the CalEEMod modeling.

Other Inputs

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

Existing Uses

The project would replace an approximate 200,000 sf General Light Industrial use building. This land use was modeled in CalEEMod as a "General Light Industrial" land use, using the traffic trip rate provided in the traffic report.

Operational Emissions

As shown in Table 3, operational emissions would not exceed the BAAQMD significance thresholds. This would be considered a *less-than-significant* impact.

Table 3. Operational Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2023 Project Operational Emissions (*tons/year*)	4.35 tons	4.87 tons	4.75 tons	1.33 tons
With TDM Implementation (-10% of mobile emissions)	4.24 tons	4.44 tons	4.28 tons	1.20 tons
Existing Uses operating in 2023	1.09 tons	0.97 tons	0.84 tons	0.25 tons
Net Increase with TDM	3.15 tons	3.47 tons	3.44 tons	0.95 tons
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	**No**	**No**	**No**	**No**
2022 Project Operational Emissions (*lbs/day*)	17.3 lbs.	19.0 lbs.	18.8 lbs.	5.2 lbs.
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	**No**	**No**	**No**	**No**
Notes: [1] Assumes 365-day operation.				

Mitigation Measure AQ-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.

Impact 2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

As discussed under Impact 1, the project would have emissions less than the BAAQMD thresholds except for NO_X emissions during construction. Therefore, the project would 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 standard. The highest measured level over any 8-hour averaging period during the last 3 years in the Bay Area is less than 3.0 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. Intersections affected by the project would have traffic volumes less than the BAAQMD screening criteria and, thus, would not cause a violation of an ambient air quality standard or have a considerable contribution to cumulative violations of these standards.[10] The project would not cause the violation of an air quality standard or worsen an existing violation of an air quality standard. This would be a *less-than-significant* impact.

Impact 3: Expose sensitive receptors to substantial pollutant concentrations?

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

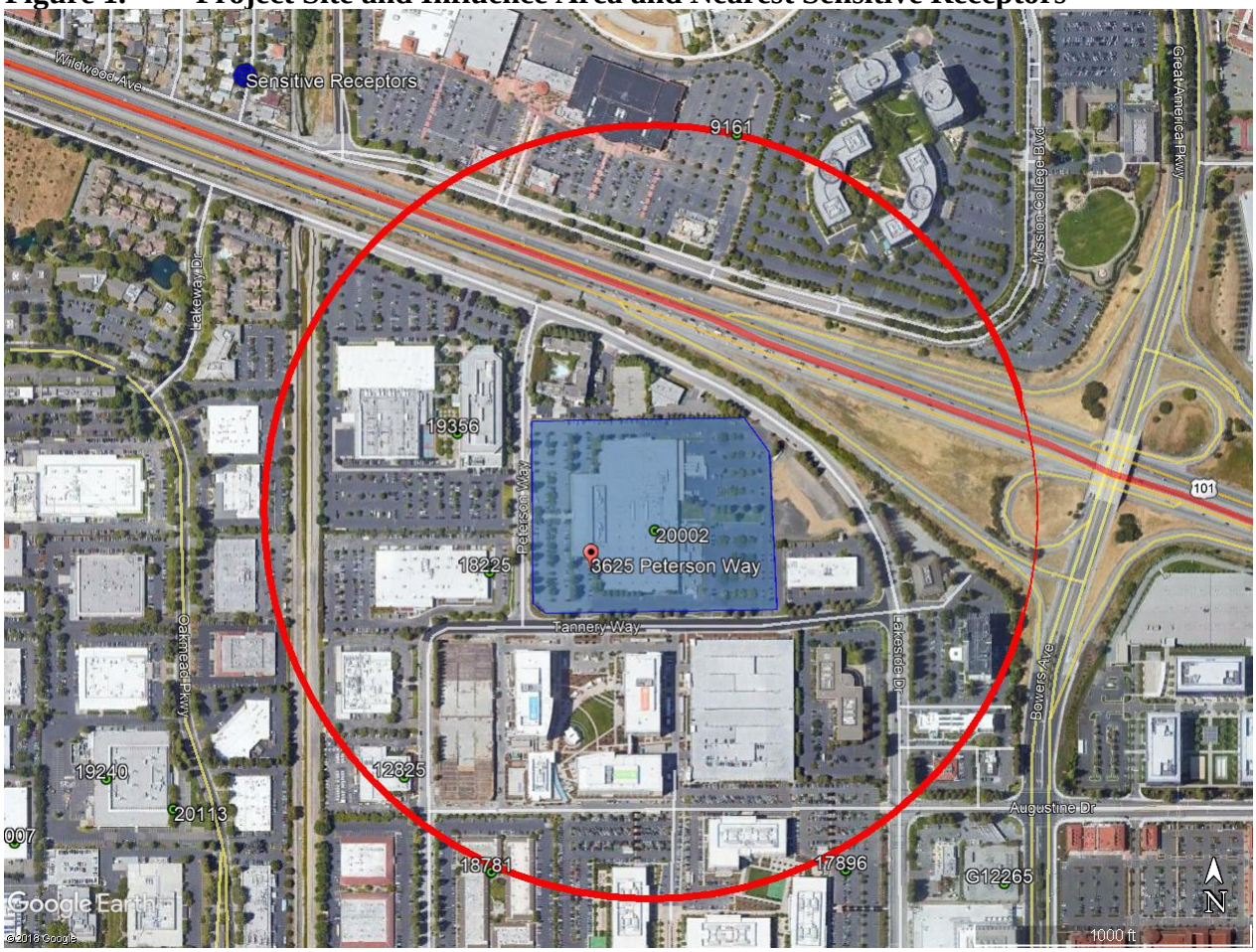
Operational Community Risk Impacts

Figure 1 shows the project and nearby sources of TACs and PM2.5. The project would include office uses, which are not considered sensitive receptors. Within the 1,000-foot influence area, depicted in Figure 1, there is U.S. 101 and three stationary sources that may affect the project site. Sensitive uses such as a daycare facility are not proposed, so no evaluation of the effect of these sources upon the project site was conducted.

Construction activities, particularly during site preparation and grading would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. 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 AQ-1 would implement BAAQMD-required best management practices.*

[10] 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 with more than 44,000 vehicles per hour.

Figure 1. Project Site and Influence Area and Nearest Sensitive Receptors



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 health risks for sensitive receptors such as surrounding residents. Construction activity is temporary, so the primary concern is to infants because of their much greater sensitivity to TAC exposure that is reflected in cancer risk assessments. Sensitive land uses where infants or small children would be exposed for extended periods have not been identified within 1,000 feet of the project site. Therefore, construction emissions are not anticipated to adversely affect sensitive receptors. This would be a *less-than-significant* impact.

Project operation would generate traffic that is mostly comprised of light-duty auto traffic. The project is not expected to generate substantial volumes of diesel truck traffic. There would be two, relatively small, emergency back-up diesel generators. Since the generators are larger than 50 horsepower, permits from BAAQMD would be required. As part of this permit process, BAAQMD evaluates potential health risks that the generator engines would pose and requires the use of best available control technology. In addition, annual testing and maintenance operation is limited to 50 hours. As a result, operational emissions are not anticipated to adversely affect sensitive receptors. This would be a *less-than-significant* impact.

Greenhouse Gases

Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2 and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

GHG Emissions

Statewide

The CARB continually updates the State's GHG emission inventory with the most recent year of data being 2015, as reported in the *California GHG Emission Inventory, 2017 Edition*[11]. The

[11] CARB 2018. See: https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2015/ghg_inventory_trends_00-15.pdf

emissions are not only computed for the most recent year, but previous computations are revised to reflect updated methods and data that have become available.

It is estimated that 440 million metric tons of CO_2e were emitted from routine statewide activities in 2015. This reflects a 1.5 $MMTCO_2e$ decrease from 2014. This represents an overall decrease of 10% since peak levels in 2004. During the period from 2000 to 2015, per capita GHG emissions decreased from a peak in 2001 of 14.0 MT per person to 11.3 MT per person in 2015 (a 19% decrease). Transportation represented the largest portion of the inventory at 37%, followed by industrial activity at 21%, electric power at 19%, and commercial and residential at 9%.

In 2007, CARB staff constructed a 1990-2004 greenhouse gas emission inventory to determine the 1990 emission level, which was approved as the 2020 limit of 427 $MMTCO_2e$. Using newer information and adopted methods, CARB approved 431 $MMTCO_2e$ as the 2020 emission limit with the approval of the First Update to the *Global Warming Solutions Act* Scoping Plan on May 22, 2014[12].

Santa Clara

The City of Santa Clara adopted the Climate Action Plan in 2013 that used 2008 as a baseline year where community-wide GHG emissions were 1.854 $MMTCO_2e$. The City of Santa Clara Climate Action Plan 2016 Annual Report shows the 2015 inventory at 1.616 $MMTCO_2e$[13]. Non-residential energy usage (primarily electricity) continued to be, by far, the largest emission sector. However, those emissions decreased by 8%. Transportation had a decrease in both vehicle miles travelled and emission rates that combined to reduce those emission by 24%.

Recent Regulatory Actions

Assembly Bill 32 (AB 32), California Global Warming Solutions Act (2006)

AB 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance

[12] CARB 2018. See: https://www.arb.ca.gov/cc/inventory/1990level/1990level.htm
[13] City of Santa Clara. 2017. Climate Action Plan 2016 Annual Report. January 2017. See: http://santaclaraca.gov/home/showdocument?id=52543

mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

Senate Bill 375, California's Regional Transportation and Land Use Planning Efforts (2008)

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g. Association of Bay Area Governments [ABAG] and Metropolitan Transportation Commission [MTC]) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

SB 350 Renewable Portfolio Standards

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

Executive Order EO-B-30-15 (2015) and SB 32 GHG Reduction Targets

In April 2015, Governor Brown signed Executive Order which extended the goals of AB 32, setting a greenhouse gas emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed SB 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*. While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

The new Scoping Plan establishes a strategy that will reduce GHG emissions in California to meet the 2030 target (note that the AB 32 Scoping Plan only addressed 2020 targets and a long-term goal). Key features of this plan are:

- Cap and Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings (note that new
- Develop fuels with an 18-percent reduction in carbon intensity;
- Develop more high-density, transit oriented housing;

- Develop walkable and bikable communities
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce "super pollutants" by reducing methane and hydrofluorocarbons or HFCs by 40 percent.

In the updated Scoping Plan, CARB recommends statewide targets of no more than 6 metric tons CO_2e per capita (statewide) by 2030 and no more than 2 metric tons CO_2e per capita by 2050. The statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer-term State emissions reduction goal of 80 percent below 1990 levels by 2050.

Significance Thresholds

The BAAQMD's CEQA Air Quality Guidelines recommended a GHG threshold of 1,100 metric tons or 4.6 metric tons per capita. These thresholds were developed based on meeting the 2020 GHG targets set in the scoping plan that addressed AB 32 that was developed in 2007. Development of the project would occur beyond 2020, so a threshold that addresses a future target is appropriate. Although BAAQMD has not published a quantified threshold for 2030 yet, this assessment uses a "Substantial Progress" efficiency metric of 2.6 MT CO_2e/year/service population. This is calculated for 2030 based on the GHG reduction goals of EO B-30-15, taking into account the 1990 inventory and the projected 2030 statewide population and employment levels.[14] The BAAQMD CEQA Air Quality Guidelines do not consider project GHG emissions to be significant if they are associated with a project that is consistent with an adopted GHG reduction strategy that meets the standards outlined in their guidelines. The City's Climate Action Plan is considered a qualified GHG reduction strategy.

Impact 4: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines.

CalEEMod Modeling

[14] Association of Environmental Professionals, 2016. *Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*. April.

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above. CalEEMod output is included in *Attachment 1*.

Service Population Emissions

The project service population efficiency rate is based on the number of future full-time employees. The number of full-time employees is estimated at 2,705 based on an approximate one employee per 250 sf of office space[15].

Construction Emissions

GHG emissions associated with construction were computed to be 2,327 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable. Best management practices assumed to be incorporated into construction of the proposed project include but are not limited to: using local building materials of at least 10 percent and recycling or reusing at least 50 percent of construction waste or demolition materials.

Operational Emissions

The CalEEMod model, along with the project vehicle trip generation rates, was used to estimate daily emissions associated with operation of the fully-developed site under the proposed project. In 2023 as shown in Table 6, annual emissions resulting from operation of the proposed project are predicted to be 7,000 MT of CO_2e. The annual emissions from operation of the existing buildings (projected to 2023) are computed as 1,453 MT of CO_2e. The net emissions resulting from the project would be 5,547 MT of CO_2e. With implementation of the TDM plan, emissions from the project would be lower at 6,553 MT of CO_2e.

In terms of service population emissions, the project would emit 2.4 MT of CO_2e per capita annually with the TDM plan in place.

Table 6. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Existing	Proposed Project in 2023	
		No TDM	With TDM
Area	<1	1	1
Energy Consumption	506	2,042	2,042
Mobile	769	4,466	4,019

[15] Hexagon. 2018. *3625 Peterson Way Office Development TDM Plan*. August 22.

Solid Waste Generation	125	322	322
Water Usage	54	169	169
Total	1,453	7,000[1]	6,553[1]
Net New Emissions		5,547	
Service Population Emissions		2.6 $MTCO_2e$/Yr./capita	2.4 $MTCO_2e$/Yr./capita

[1] The project would also include stationary sources permitted by BAAQMD that would emit a total of 6 MT/year

Attachment 1: CalEEMod Modeling and Supporting Information

3625 Peterson Air Pollutant - GHG - Santa Clara County, Annual

3625 Peterson Air Pollutant - GHG

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	689.00	1000sqft	14.50	689,000.00	0
Parking Lot	370.00	Space	0.00	148,000.00	0
Unenclosed Parking with Elevator	2,281.00	Space	0.00	912,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	222	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SVP GP Rate for 2022 per Feb 6, 2019 email from Kathleen Hughes

Land Use - total acreage is 14.5

Construction Phase - Using model default, which is longer than incomplete provided schedule

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - added

Trips and VMT - added asphalt and cement trips at vendor distances. Added 10 worker and 4 vendor trips for trenching

Demolition - Use tons since higher than sf

Grading - from construciton worksheet

Vehicle Trips - Trip rate does not include 5% TDM reduction - rates: 10.013, 2.33,0.96

Woodstoves -

Energy Use -

Water And Wastewater - all wastewater treatment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps - Two 100kW Peterson Cat4.4 gen sets. HP based on max load per specs

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	7/13/2021	8/10/2021
tblGrading	MaterialExported	0.00	19,000.00
tblGrading	MaterialImported	0.00	1,000.00
tblLandUse	LotAcreage	15.82	14.50
tblLandUse	LotAcreage	3.33	0.00
tblLandUse	LotAcreage	20.53	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	222
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	160.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblTripsAndVMT	HaulingTripLength	20.00	7.30
tblTripsAndVMT	HaulingTripLength	20.00	7.30
tblTripsAndVMT	HaulingTripNumber	0.00	430.00

tblTripsAndVMT	HaulingTripNumber	0.00	300.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblVehicleTrips	ST_TR	2.46	2.33
tblVehicleTrips	SU_TR	1.05	0.96
tblVehicleTrips	WD_TR	11.03	10.01
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	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
Year	tons/yr										MT/yr					
2021	0.4462	5.0956	3.4827	0.0136	1.1402	0.1254	1.2656	0.3035	0.1170	0.4204	0.0000	1,255.8083	1,255.8083	0.1154	0.0000	1,258.6921
2022	4.2300	4.1304	3.5450	0.0138	0.6484	0.0862	0.7346	0.1763	0.0810	0.2573	0.0000	1,270.7380	1,270.7380	0.0918	0.0000	1,273.0324
Maximum	**4.2300**	**5.0956**	**3.5450**	**0.0138**	**1.1402**	**0.1254**	**1.2656**	**0.3035**	**0.1170**	**0.4204**	**0.0000**	**1,270.7380**	**1,270.7380**	**0.1154**	**0.0000**	**1,273.0324**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.4462	5.0956	3.4827	0.0136	1.1402	0.1254	1.2656	0.3035	0.1170	0.4204	0.0000	1,255.8080	1,255.8080	0.1154	0.0000	1,258.6917
2022	4.2300	4.1304	3.5450	0.0138	0.6484	0.0862	0.7346	0.1763	0.0810	0.2573	0.0000	1,270.7377	1,270.7377	0.0918	0.0000	1,273.0322
Maximum	**4.2300**	**5.0956**	**3.5450**	**0.0138**	**1.1402**	**0.1254**	**1.2656**	**0.3035**	**0.1170**	**0.4204**	**0.0000**	**1,270.7377**	**1,270.7377**	**0.1154**	**0.0000**	**1,273.0322**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-21-2021	7-20-2021	2.3327	2.3327
2	7-21-2021	10-20-2021	1.7859	1.7859
3	10-21-2021	1-20-2022	1.7391	1.7391
4	1-21-2022	4-20-2022	1.5955	1.5955
5	4-21-2022	7-20-2022	1.5966	1.5966
6	7-21-2022	9-30-2022	0.9476	0.9476
		Highest	2.3327	2.3327

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	3.1437	2.8000e-004	0.0307	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	0.0597	0.0597	1.6000e-004	0.0000	0.0636
Energy	0.0608	0.5529	0.4644	3.3200e-003		0.0420	0.0420		0.0420	0.0420	0.0000	2,022.3988	2,022.3988	0.1971	0.0494	2,042.0554
Mobile	1.1307	4.2808	13.4717	0.0487	4.6654	0.0378	4.7032	1.2488	0.0352	1.2840	0.0000	4,462.4188	4,462.4188	0.1414	0.0000	4,465.9541
Stationary	0.0131	0.0367	0.0476	6.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	6.0928	6.0928	8.5000e-004	0.0000	6.1141
Waste						0.0000	0.0000		0.0000	0.0000	130.0705	0.0000	130.0705	7.6870	0.0000	322.2442
Water						0.0000	0.0000		0.0000	0.0000	43.3260	93.1771	136.5031	0.1613	0.0967	169.3635
Total	**4.3483**	**4.8706**	**14.0145**	**0.0521**	**4.6654**	**0.0819**	**4.7473**	**1.2488**	**0.0793**	**1.3281**	**173.3966**	**6,584.1471**	**6,757.5437**	**8.1878**	**0.1462**	**7,005.7949**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.1437	2.8000e-004	0.0307	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	0.0597	0.0597	1.6000e-004	0.0000	0.0636
Energy	0.0608	0.5529	0.4644	3.3200e-003		0.0420	0.0420		0.0420	0.0420	0.0000	1,935.3595	1,935.3595	0.1857	0.0471	1,954.0309
Mobile	1.1307	4.2808	13.4717	0.0487	4.6654	0.0378	4.7032	1.2488	0.0352	1.2840	0.0000	4,462.4188	4,462.4188	0.1414	0.0000	4,465.9541
Stationary	0.0131	0.0367	0.0476	6.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	6.0928	6.0928	8.5000e-004	0.0000	6.1141
Waste						0.0000	0.0000		0.0000	0.0000	104.0564	0.0000	104.0564	6.1496	0.0000	257.7954
Water						0.0000	0.0000		0.0000	0.0000	34.6608	74.5417	109.2025	0.1290	0.0774	135.4908
Total	**4.3483**	**4.8706**	**14.0145**	**0.0521**	**4.6654**	**0.0819**	**4.7473**	**1.2488**	**0.0793**	**1.3281**	**138.7172**	**6,478.4724**	**6,617.1897**	**6.6068**	**0.1245**	**6,819.4488**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**20.00**	**1.60**	**2.08**	**19.31**	**14.85**	**2.66**

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	4/21/2021	5/18/2021	5	20	
2	Site Preparation	Site Preparation	5/19/2021	6/1/2021	5	10	
3	Grading	Grading	6/2/2021	7/13/2021	5	30	
4	trenching	Trenching	7/14/2021	8/10/2021	5	20	added - overlap
5	Building Construction	Building Construction	7/14/2021	9/6/2022	5	300	
6	Paving	Paving	9/7/2022	10/4/2022	5	20	
7	Architectural Coating	Architectural Coating	10/5/2022	11/1/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,033,500; Non-Residential Outdoor: 344,500; Striped Parking

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	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

trenching	Excavators	1	8.00	158	0.38
trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	3,856.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	2,500.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
trenching	2	10.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	666.00	287.00	430.00	10.80	7.30	7.30	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	133.00	0.00	300.00	10.80	7.30	7.30	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Fugitive Dust					0.4173	0.0000	0.4173	0.0632	0.0000	0.0632	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**	**0.4173**	**0.0155**	**0.4328**	**0.0632**	**0.0144**	**0.0776**	**0.0000**	**34.0008**	**34.0008**	**9.5700e-003**	**0.0000**	**34.2400**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0151	0.5156	0.1124	1.5000e-003	0.0327	1.6100e-003	0.0343	8.9900e-003	1.5400e-003	0.0105	0.0000	145.1848	145.1848	6.5900e-003	0.0000	145.3495
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	3.2000e-004	3.4300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9848	0.9848	2.0000e-005	0.0000	0.9854
Total	**0.0156**	**0.5159**	**0.1158**	**1.5100e-003**	**0.0339**	**1.6200e-003**	**0.0355**	**9.3100e-003**	**1.5500e-003**	**0.0109**	**0.0000**	**146.1696**	**146.1696**	**6.6100e-003**	**0.0000**	**146.3348**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4173	0.0000	0.4173	0.0632	0.0000	0.0632	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0007	34.0007	9.5700e-003	0.0000	34.2400

Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**	**0.4173**	**0.0155**	**0.4328**	**0.0632**	**0.0144**	**0.0776**	**0.0000**	**34.0007**	**34.0007**	**9.5700e-003**	**0.0000**	**34.2400**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0151	0.5156	0.1124	1.5000e-003	0.0327	1.6100e-003	0.0343	8.9900e-003	1.5400e-003	0.0105	0.0000	145.1848	145.1848	6.5900e-003	0.0000	145.3495
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	3.2000e-004	3.4300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9848	0.9848	2.0000e-005	0.0000	0.9854
Total	**0.0156**	**0.5159**	**0.1158**	**1.5100e-003**	**0.0339**	**1.6200e-003**	**0.0355**	**9.3100e-003**	**1.5500e-003**	**0.0109**	**0.0000**	**146.1696**	**146.1696**	**6.6100e-003**	**0.0000**	**146.3348**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7179	16.7179	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0903**	**0.0102**	**0.1006**	**0.0497**	**9.4000e-003**	**0.0591**	**0.0000**	**16.7179**	**16.7179**	**5.4100e-003**	**0.0000**	**16.8530**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.9000e-004	2.0600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5909	0.5909	1.0000e-005	0.0000	0.5912
Total	**2.8000e-004**	**1.9000e-004**	**2.0600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5909**	**0.5909**	**1.0000e-005**	**0.0000**	**0.5912**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0903**	**0.0102**	**0.1006**	**0.0497**	**9.4000e-003**	**0.0591**	**0.0000**	**16.7178**	**16.7178**	**5.4100e-003**	**0.0000**	**16.8530**

Mitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.9000e-004	2.0600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5909	0.5909	1.0000e-005	0.0000	0.5912
Total	**2.8000e-004**	**1.9000e-004**	**2.0600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5909**	**0.5909**	**1.0000e-005**	**0.0000**	**0.5912**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1312	0.0000	0.1312	0.0541	0.0000	0.0541	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0629	0.6960	0.4632	9.3000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	81.7425	81.7425	0.0264	0.0000	82.4034
Total	**0.0629**	**0.6960**	**0.4632**	**9.3000e-004**	**0.1312**	**0.0298**	**0.1610**	**0.0541**	**0.0274**	**0.0815**	**0.0000**	**81.7425**	**81.7425**	**0.0264**	**0.0000**	**82.4034**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.8000e-003	0.3343	0.0728	9.7000e-004	0.0212	1.0400e-003	0.0222	5.8300e-003	1.0000e-003	6.8300e-003	0.0000	94.1291	94.1291	4.2700e-003	0.0000	94.2359
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	6.4000e-004	6.8600e-003	2.0000e-005	2.3800e-003	1.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.5000e-004	0.0000	1.9696	1.9696	4.0000e-005	0.0000	1.9708
Total	**0.0107**	**0.3349**	**0.0797**	**9.9000e-004**	**0.0236**	**1.0500e-003**	**0.0246**	**6.4600e-003**	**1.0100e-003**	**7.4800e-003**	**0.0000**	**96.0988**	**96.0988**	**4.3100e-003**	**0.0000**	**96.2067**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1312	0.0000	0.1312	0.0541	0.0000	0.0541	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0629	0.6960	0.4632	9.3000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	81.7424	81.7424	0.0264	0.0000	82.4033
Total	**0.0629**	**0.6960**	**0.4632**	**9.3000e-004**	**0.1312**	**0.0298**	**0.1610**	**0.0541**	**0.0274**	**0.0815**	**0.0000**	**81.7424**	**81.7424**	**0.0264**	**0.0000**	**82.4033**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.8000e-003	0.3343	0.0728	9.7000e-004	0.0212	1.0400e-003	0.0222	5.8300e-003	1.0000e-003	6.8300e-003	0.0000	94.1291	94.1291	4.2700e-003	0.0000	94.2359
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	6.4000e-004	6.8600e-003	2.0000e-005	2.3800e-003	1.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.5000e-004	0.0000	1.9696	1.9696	4.0000e-005	0.0000	1.9708
Total	**0.0107**	**0.3349**	**0.0797**	**9.9000e-004**	**0.0236**	**1.0500e-003**	**0.0246**	**6.4600e-003**	**1.0100e-003**	**7.4800e-003**	**0.0000**	**96.0988**	**96.0988**	**4.3100e-003**	**0.0000**	**96.2067**

3.5 trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1600e-003	0.0405	0.0553	8.0000e-005		2.1600e-003	2.1600e-003		1.9900e-003	1.9900e-003	0.0000	7.2674	7.2674	2.3500e-003	0.0000	7.3262
Total	**4.1600e-003**	**0.0405**	**0.0553**	**8.0000e-005**		**2.1600e-003**	**2.1600e-003**		**1.9900e-003**	**1.9900e-003**	**0.0000**	**7.2674**	**7.2674**	**2.3500e-003**	**0.0000**	**7.3262**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3000e-004	4.1100e-003	1.0900e-003	1.0000e-005	2.6000e-004	1.0000e-005	2.7000e-004	8.0000e-005	1.0000e-005	8.0000e-005	0.0000	1.0361	1.0361	5.0000e-005	0.0000	1.0373
Worker	3.1000e-004	2.1000e-004	2.2900e-003	1.0000e-005	7.9000e-004	0.0000	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6565	0.6565	1.0000e-005	0.0000	0.6569
Total	**4.4000e-004**	**4.3200e-003**	**3.3800e-003**	**2.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0700e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.6927**	**1.6927**	**6.0000e-005**	**0.0000**	**1.6942**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1600e-003	0.0405	0.0553	8.0000e-005		2.1600e-003	2.1600e-003		1.9900e-003	1.9900e-003	0.0000	7.2674	7.2674	2.3500e-003	0.0000	7.3261

Total	**4.1600e-003**	**0.0405**	**0.0553**	**8.0000e-005**		**2.1600e-003**	**2.1600e-003**		**1.9900e-003**	**1.9900e-003**	**0.0000**	**7.2674**	**7.2674**	**2.3500e-003**	**0.0000**	**7.3261**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3000e-004	4.1100e-003	1.0900e-003	1.0000e-005	2.6000e-004	1.0000e-005	2.7000e-004	8.0000e-005	1.0000e-005	8.0000e-005	0.0000	1.0361	1.0361	5.0000e-005	0.0000	1.0373
Worker	3.1000e-004	2.1000e-004	2.2900e-003	1.0000e-005	7.9000e-004	0.0000	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6565	0.6565	1.0000e-005	0.0000	0.6569
Total	**4.4000e-004**	**4.3200e-003**	**3.3800e-003**	**2.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0700e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.6927**	**1.6927**	**6.0000e-005**	**0.0000**	**1.6942**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1169	1.0721	1.0194	1.6600e-003		0.0590	0.0590		0.0554	0.0554	0.0000	142.4569	142.4569	0.0344	0.0000	143.3161
Total	**0.1169**	**1.0721**	**1.0194**	**1.6600e-003**		**0.0590**	**0.0590**		**0.0554**	**0.0554**	**0.0000**	**142.4569**	**142.4569**	**0.0344**	**0.0000**	**143.3161**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5000e-004	0.0137	2.6600e-003	3.0000e-005	1.1300e-003	3.0000e-005	1.1600e-003	2.9000e-004	3.0000e-005	3.2000e-004	0.0000	2.9582	2.9582	1.8000e-004	0.0000	2.9627
Vendor	0.0576	1.8138	0.4828	4.7700e-003	0.1161	4.0200e-003	0.1201	0.0336	3.8500e-003	0.0374	0.0000	457.1998	457.1998	0.0199	0.0000	457.6979
Worker	0.1262	0.0874	0.9370	2.9700e-003	0.3249	2.0400e-003	0.3269	0.0864	1.8800e-003	0.0883	0.0000	268.9130	268.9130	6.1200e-003	0.0000	269.0659
Total	**0.1841**	**1.9148**	**1.4224**	**7.7700e-003**	**0.4421**	**6.0900e-003**	**0.4482**	**0.1203**	**5.7600e-003**	**0.1260**	**0.0000**	**729.0710**	**729.0710**	**0.0262**	**0.0000**	**729.7265**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1169	1.0721	1.0194	1.6600e-003		0.0590	0.0590		0.0554	0.0554	0.0000	142.4568	142.4568	0.0344	0.0000	143.3160
Total	**0.1169**	**1.0721**	**1.0194**	**1.6600e-003**		**0.0590**	**0.0590**		**0.0554**	**0.0554**	**0.0000**	**142.4568**	**142.4568**	**0.0344**	**0.0000**	**143.3160**

Mitigated Construction Off-Site

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

Hauling	3.5000e-004	0.0137	2.6600e-003	3.0000e-005	1.1300e-003	3.0000e-005	1.1600e-003	2.9000e-004	3.0000e-005	3.2000e-004	0.0000	2.9582	2.9582	1.8000e-004	0.0000	2.9627
Vendor	0.0576	1.8138	0.4828	4.7700e-003	0.1161	4.0200e-003	0.1201	0.0336	3.8500e-003	0.0374	0.0000	457.1998	457.1998	0.0199	0.0000	457.6979
Worker	0.1262	0.0874	0.9370	2.9700e-003	0.3249	2.0400e-003	0.3269	0.0864	1.8800e-003	0.0883	0.0000	268.9130	268.9130	6.1200e-003	0.0000	269.0659
Total	**0.1841**	**1.9148**	**1.4224**	**7.7700e-003**	**0.4421**	**6.0900e-003**	**0.4482**	**0.1203**	**5.7600e-003**	**0.1260**	**0.0000**	**729.0710**	**729.0710**	**0.0262**	**0.0000**	**729.7265**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1510	1.3820	1.4482	2.3800e-003		0.0716	0.0716		0.0674	0.0674	0.0000	205.0768	205.0768	0.0491	0.0000	206.3051
Total	**0.1510**	**1.3820**	**1.4482**	**2.3800e-003**		**0.0716**	**0.0716**		**0.0674**	**0.0674**	**0.0000**	**205.0768**	**205.0768**	**0.0491**	**0.0000**	**206.3051**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.7000e-004	0.0184	3.7500e-003	4.0000e-005	1.2000e-003	4.0000e-005	1.2300e-003	3.2000e-004	3.0000e-005	3.5000e-004	0.0000	4.2030	4.2030	2.5000e-004	0.0000	4.2091
Vendor	0.0773	2.4672	0.6544	6.7900e-003	0.1671	5.0300e-003	0.1721	0.0483	4.8100e-003	0.0531	0.0000	651.6274	651.6274	0.0274	0.0000	652.3118
Worker	0.1695	0.1128	1.2393	4.1200e-003	0.4675	2.8800e-003	0.4704	0.1243	2.6500e-003	0.1270	0.0000	372.9160	372.9160	7.8900e-003	0.0000	373.1133
Total	**0.2472**	**2.5985**	**1.8974**	**0.0110**	**0.6358**	**7.9500e-003**	**0.6437**	**0.1730**	**7.4900e-003**	**0.1805**	**0.0000**	**1,028.7464**	**1,028.7464**	**0.0355**	**0.0000**	**1,029.6343**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1510	1.3820	1.4482	2.3800e-003		0.0716	0.0716		0.0674	0.0674	0.0000	205.0766	205.0766	0.0491	0.0000	206.3049
Total	**0.1510**	**1.3820**	**1.4482**	**2.3800e-003**		**0.0716**	**0.0716**		**0.0674**	**0.0674**	**0.0000**	**205.0766**	**205.0766**	**0.0491**	**0.0000**	**206.3049**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.7000e-004	0.0184	3.7500e-003	4.0000e-005	1.2000e-003	4.0000e-005	1.2300e-003	3.2000e-004	3.0000e-005	3.5000e-004	0.0000	4.2030	4.2030	2.5000e-004	0.0000	4.2091
Vendor	0.0773	2.4672	0.6544	6.7900e-003	0.1671	5.0300e-003	0.1721	0.0483	4.8100e-003	0.0531	0.0000	651.6274	651.6274	0.0274	0.0000	652.3118
Worker	0.1695	0.1128	1.2393	4.1200e-003	0.4675	2.8800e-003	0.4704	0.1243	2.6500e-003	0.1270	0.0000	372.9160	372.9160	7.8900e-003	0.0000	373.1133
Total	**0.2472**	**2.5985**	**1.8974**	**0.0110**	**0.6358**	**7.9500e-003**	**0.6437**	**0.1730**	**7.4900e-003**	**0.1805**	**0.0000**	**1,028.7464**	**1,028.7464**	**0.0355**	**0.0000**	**1,029.6343**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1113**	**0.1458**	**2.3000e-004**		**5.6800e-003**	**5.6800e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**20.0276**	**20.0276**	**6.4800e-003**	**0.0000**	**20.1895**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	2.9000e-004	3.1500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9490	0.9490	2.0000e-005	0.0000	0.9495
Total	**4.3000e-004**	**2.9000e-004**	**3.1500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9490**	**0.9490**	**2.0000e-005**	**0.0000**	**0.9495**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1113**	**0.1458**	**2.3000e-004**		**5.6800e-003**	**5.6800e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**20.0275**	**20.0275**	**6.4800e-003**	**0.0000**	**20.1895**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	2.9000e-004	3.1500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9490	0.9490	2.0000e-005	0.0000	0.9495
Total	**4.3000e-004**	**2.9000e-004**	**3.1500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9490**	**0.9490**	**2.0000e-005**	**0.0000**	**0.9495**

3.8 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										MT/yr					
Archit. Coating	3.8139					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**3.8159**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.6000e-004	0.0218	4.4300e-003	5.0000e-005	9.3000e-004	4.0000e-005	9.7000e-004	2.6000e-004	4.0000e-005	3.0000e-004	0.0000	4.9701	4.9701	2.9000e-004	0.0000	4.9773
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	3.8200e-003	2.5500e-003	0.0280	9.0000e-005	0.0106	6.0000e-005	0.0106	2.8100e-003	6.0000e-005	2.8700e-003	0.0000	8.4148	8.4148	1.8000e-004	0.0000	8.4193
Total	**4.3800e-003**	**0.0243**	**0.0324**	**1.4000e-004**	**0.0115**	**1.0000e-004**	**0.0116**	**3.0700e-003**	**1.0000e-004**	**3.1700e-003**	**0.0000**	**13.3849**	**13.3849**	**4.7000e-004**	**0.0000**	**13.3966**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.8139					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**3.8159**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Mitigated Construction Off-Site

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

Hauling	5.6000e-004	0.0218	4.4300e-003	5.0000e-005	9.3000e-004	4.0000e-005	9.7000e-004	2.6000e-004	4.0000e-005	3.0000e-004	0.0000	4.9701	4.9701	2.9000e-004	0.0000	4.9773
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	3.8200e-003	2.5500e-003	0.0280	9.0000e-005	0.0106	6.0000e-005	0.0106	2.8100e-003	6.0000e-005	2.8700e-003	0.0000	8.4148	8.4148	1.8000e-004	0.0000	8.4193
Total	**4.3800e-003**	**0.0243**	**0.0324**	**1.4000e-004**	**0.0115**	**1.0000e-004**	**0.0116**	**3.0700e-003**	**1.0000e-004**	**3.1700e-003**	**0.0000**	**13.3849**	**13.3849**	**4.7000e-004**	**0.0000**	**13.3966**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1307	4.2808	13.4717	0.0487	4.6654	0.0378	4.7032	1.2488	0.0352	1.2840	0.0000	4,462.4188	4,462.4188	0.1414	0.0000	4,465.9541
Unmitigated	1.1307	4.2808	13.4717	0.0487	4.6654	0.0378	4.7032	1.2488	0.0352	1.2840	0.0000	4,462.4188	4,462.4188	0.1414	0.0000	4,465.9541

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	6,896.89	1,605.37	661.44	12,546,632	12,546,632
Parking Lot	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	6,896.89	1,605.37	661.44	12,546,632	12,546,632

4.3 Trip Type Information

	Miles	Trip %	Trip Purpose %

Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unenclosed Parking with	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Parking Lot	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Unenclosed Parking with Elevator	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive 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	1,333.4728	1,333.4728	0.1742	0.0360	1,348.5675
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,420.5121	1,420.5121	0.1856	0.0384	1,436.5921
NaturalGas Mitigated	0.0608	0.5529	0.4644	3.3200e-003		0.0420	0.0420		0.0420	0.0420	0.0000	601.8867	601.8867	0.0115	0.0110	605.4634
NaturalGas Unmitigated	0.0608	0.5529	0.4644	3.3200e-003		0.0420	0.0420		0.0420	0.0420	0.0000	601.8867	601.8867	0.0115	0.0110	605.4634

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					
General Office Building	1.12789e+007	0.0608	0.5529	0.4644	3.3200e-003		0.0420	0.0420		0.0420	0.0420	0.0000	601.8867	601.8867	0.0115	0.0110	605.4634
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
Unenclosed 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
Total		**0.0608**	**0.5529**	**0.4644**	**3.3200e-003**		**0.0420**	**0.0420**		**0.0420**	**0.0420**	**0.0000**	**601.8867**	**601.8867**	**0.0115**	**0.0110**	**605.4634**

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					
General Office Building	1.12789e+007	0.0608	0.5529	0.4644	3.3200e-003		0.0420	0.0420		0.0420	0.0420	0.0000	601.8867	601.8867	0.0115	0.0110	605.4634
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
Unenclosed 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
Total		**0.0608**	**0.5529**	**0.4644**	**3.3200e-003**		**0.0420**	**0.0420**		**0.0420**	**0.0420**	**0.0000**	**601.8867**	**601.8867**	**0.0115**	**0.0110**	**605.4634**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
General Office Building	1.22849e+007	1,237.0558	0.1616	0.0334	1,251.0590
Parking Lot	51800	5.2161	6.8000e-004	1.4000e-004	5.2752
Unenclosed Parking with Elevator	1.77006e+006	178.2402	0.0233	4.8200e-003	180.2579
Total		**1,420.5121**	**0.1856**	**0.0384**	**1,436.5921**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	1.17502e+007	1,183.2164	0.1546	0.0320	1,196.6102
Parking Lot	41440	4.1729	5.5000e-004	1.1000e-004	4.2201
Unenclosed Parking with Elevator	1.45072e+006	146.0835	0.0191	3.9500e-003	147.7371
Total		**1,333.4728**	**0.1742**	**0.0360**	**1,348.5675**

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	3.1437	2.8000e-004	0.0307	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	0.0597	0.0597	1.6000e-004	0.0000	0.0636
Unmitigated	3.1437	2.8000e-004	0.0307	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	0.0597	0.0597	1.6000e-004	0.0000	0.0636

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	0.3814					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7594					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.8400e-003	2.8000e-004	0.0307	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	0.0597	0.0597	1.6000e-004	0.0000	0.0636
Total	**3.1437**	**2.8000e-004**	**0.0307**	**0.0000**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**0.0597**	**0.0597**	**1.6000e-004**	**0.0000**	**0.0636**

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	0.3814					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7594					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.8400e-003	2.8000e-004	0.0307	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	0.0597	0.0597	1.6000e-004	0.0000	0.0636

Total	**3.1437**	**2.8000e-004**	**0.0307**	**0.0000**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**0.0597**	**0.0597**	**1.6000e-004**	**0.0000**	**0.0636**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	109.2025	0.1290	0.0774	135.4908
Unmitigated	136.5031	0.1613	0.0967	169.3635

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	122.459 / 75.0552	136.5031	0.1613	0.0967	169.3635
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**136.5031**	**0.1613**	**0.0967**	**169.3635**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	97.9668 / 60.0442	109.2025	0.1290	0.0774	135.4908
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with El...	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**109.2025**	**0.1290**	**0.0774**	**135.4908**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	104.0564	6.1496	0.0000	257.7954
Unmitigated	130.0705	7.6870	0.0000	322.2442

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	640.77	130.0705	7.6870	0.0000	322.2442
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**130.0705**	**7.6870**	**0.0000**	**322.2442**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	512.616	104.0564	6.1496	0.0000	257.7954
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**104.0564**	**6.1496**	**0.0000**	**257.7954**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0	50	160	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (100 - 175 HP)	0.0131	0.0367	0.0476	6.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	6.0928	6.0928	8.5000e-004	0.0000	6.1141
Total	**0.0131**	**0.0367**	**0.0476**	**6.0000e-005**		**1.9300e-003**	**1.9300e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**6.0928**	**6.0928**	**8.5000e-004**	**0.0000**	**6.1141**

11.0 Vegetation

Existing 3625 Peterson Way - Santa Clara County, Annual

Existing 3625 Peterson Way

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	200.00	1000sqft	14.50	200,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	222	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - svp rate in 2023

Land Use - Existing uses

Construction Phase - no construction

Off-road Equipment - no construction

Vehicle Trips - Rate = 4.96, 0.94,0.48

Energy Use - existing use

Water And Wastewater - wastewater treatment plant

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	4.59	14.50

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	222
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	1.32	0.94
tblVehicleTrips	SU_TR	0.68	0.48
tblVehicleTrips	WD_TR	6.97	4.96
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8856	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8100e-003
Energy	0.0315	0.2868	0.2409	1.7200e-003		0.0218	0.0218		0.0218	0.0218	0.0000	502.0938	502.0938	0.0308	0.0109	506.0987
Mobile	0.1736	0.6796	2.2407	8.3800e-003	0.8133	6.4300e-003	0.8197	0.2177	5.9900e-003	0.2237	0.0000	768.2029	768.2029	0.0236	0.0000	768.7921
Waste						0.0000	0.0000		0.0000	0.0000	50.3418	0.0000	50.3418	2.9751	0.0000	124.7196
Water						0.0000	0.0000		0.0000	0.0000	16.3633	25.2004	41.5638	0.0596	0.0363	53.8613
Total	**1.0907**	**0.9664**	**2.4834**	**0.0101**	**0.8133**	**0.0282**	**0.8415**	**0.2177**	**0.0278**	**0.2455**	**66.7051**	**1,295.5007**	**1,362.2058**	**3.0891**	**0.0471**	**1,453.4755**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8856	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8100e-003
Energy	0.0315	0.2868	0.2409	1.7200e-003		0.0218	0.0218		0.0218	0.0218	0.0000	502.0938	502.0938	0.0308	0.0109	506.0987
Mobile	0.1736	0.6796	2.2407	8.3800e-003	0.8133	6.4300e-003	0.8197	0.2177	5.9900e-003	0.2237	0.0000	768.2029	768.2029	0.0236	0.0000	768.7921
Waste						0.0000	0.0000		0.0000	0.0000	50.3418	0.0000	50.3418	2.9751	0.0000	124.7196
Water						0.0000	0.0000		0.0000	0.0000	16.3633	25.2004	41.5638	0.0596	0.0363	53.8613
Total	**1.0907**	**0.9664**	**2.4834**	**0.0101**	**0.8133**	**0.0282**	**0.8415**	**0.2177**	**0.0278**	**0.2455**	**66.7051**	**1,295.5007**	**1,362.2058**	**3.0891**	**0.0471**	**1,453.4755**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

Mitigated	0.1736	0.6796	2.2407	8.3800e-003	0.8133	6.4300e-003	0.8197	0.2177	5.9900e-003	0.2237	0.0000	768.2029	768.2029	0.0236	0.0000	768.7921
Unmitigated	0.1736	0.6796	2.2407	8.3800e-003	0.8133	6.4300e-003	0.8197	0.2177	5.9900e-003	0.2237	0.0000	768.2029	768.2029	0.0236	0.0000	768.7921

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	992.00	188.00	96.00	2,187,131	2,187,131
Total	992.00	188.00	96.00	2,187,131	2,187,131

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

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

Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	189.9155	189.9155	0.0248	5.1300e-003	192.0653
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	189.9155	189.9155	0.0248	5.1300e-003	192.0653
NaturalGas Mitigated	0.0315	0.2868	0.2409	1.7200e-003		0.0218	0.0218		0.0218	0.0218	0.0000	312.1783	312.1783	5.9800e-003	5.7200e-003	314.0334
NaturalGas Unmitigated	0.0315	0.2868	0.2409	1.7200e-003		0.0218	0.0218		0.0218	0.0218	0.0000	312.1783	312.1783	5.9800e-003	5.7200e-003	314.0334

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					
General Light Industry	5.85e+006	0.0315	0.2868	0.2409	1.7200e-003		0.0218	0.0218		0.0218	0.0218	0.0000	312.1783	312.1783	5.9800e-003	5.7200e-003	314.0334
Total		**0.0315**	**0.2868**	**0.2409**	**1.7200e-003**		**0.0218**	**0.0218**		**0.0218**	**0.0218**	**0.0000**	**312.1783**	**312.1783**	**5.9800e-003**	**5.7200e-003**	**314.0334**

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					
General Light Industry	5.85e+006	0.0315	0.2868	0.2409	1.7200e-003		0.0218	0.0218		0.0218	0.0218	0.0000	312.1783	312.1783	5.9800e-003	5.7200e-003	314.0334
Total		**0.0315**	**0.2868**	**0.2409**	**1.7200e-003**		**0.0218**	**0.0218**		**0.0218**	**0.0218**	**0.0000**	**312.1783**	**312.1783**	**5.9800e-003**	**5.7200e-003**	**314.0334**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	1.886e+006	189.9155	0.0248	5.1300e-003	192.0653
Total		**189.9155**	**0.0248**	**5.1300e-003**	**192.0653**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	1.886e+006	189.9155	0.0248	5.1300e-003	192.0653
Total		**189.9155**	**0.0248**	**5.1300e-003**	**192.0653**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8856	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8100e-003
Unmitigated	0.8856	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8100e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1043					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7811					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8100e-003
Total	**0.8856**	**2.0000e-005**	**1.8400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5700e-003**	**3.5700e-003**	**1.0000e-005**	**0.0000**	**3.8100e-003**

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	0.1043					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7811					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Landscaping	1.7000e-004	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8100e-003
Total	**0.8856**	**2.0000e-005**	**1.8400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5700e-003**	**3.5700e-003**	**1.0000e-005**	**0.0000**	**3.8100e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	41.5638	0.0596	0.0363	53.8613
Unmitigated	41.5638	0.0596	0.0363	53.8613

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	46.25 / 0	41.5638	0.0596	0.0363	53.8613
Total		**41.5638**	**0.0596**	**0.0363**	**53.8613**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	46.25 / 0	41.5638	0.0596	0.0363	53.8613
Total		**41.5638**	**0.0596**	**0.0363**	**53.8613**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	50.3418	2.9751	0.0000	124.7196
Unmitigated	50.3418	2.9751	0.0000	124.7196

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	248	50.3418	2.9751	0.0000	124.7196
Total		**50.3418**	**2.9751**	**0.0000**	**124.7196**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	248	50.3418	2.9751	0.0000	124.7196
Total		**50.3418**	**2.9751**	**0.0000**	**124.7196**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Xander,
Sorry to take so long. I still do not have the 2018 number finalized (it will take a couple of weeks until all the data is verified). Use the 2019 number for now. These are the forecasted numbers through 2030 but do not account for market sales which will make the number lower in some years. These are all in LBs.

2019	2020	2021	2022	2023
341	348	271	230	222

2025 2026 2027 2028 2029
277 279 276 273 270

From: Kathleen Hughes <khughes@SantaClaraCA.gov>
Date: February 6, 2019 at 2:46:10 PM PST
To: Alexander Abbe <aabbe@SantaClaraCA.gov>
Subject: RE: NEW Carbon intensity number

From:	Kathleen Hughes
To:	Diana Fazely; Alexander Abbe
Cc:	Ann Hatcher; John Roukema
Subject:	RE: NEW Carbon intensity number
Date:	Thursday, December 13, 2018 8:38:29 AM
Attachments:	image002.png image003.png image004.png image005.png

Our 2017 carbon number for delivered energy to our retail customers was .192 MTCO2e/MWh or 423 lbsCO2e/MWh. This is with coal still in our portfolio and a very good hydro year.

We will have the 2018 numbers soon as the year closes out. We should be in within range of the 2020 goal.

Let me know if you have any questions,

Kathleen

From: Diana Fazely
Sent: Wednesday, December 12, 2018 5:11 PM
To: Kathleen Hughes <khughes@SantaClaraCA.gov>
Cc: Ann Hatcher <ahatcher@SantaClaraCA.gov>; John Roukema <JRoukema@SantaClaraCA.gov>
Subject: FW: NEW Carbon intensity number

Hi Kathleen,

Would you be able to help with Xander's question below? The information related to carbon intensity is used in the City's environmental documents for development projects. I appreciate your help. Thanks!

From: Alexander Abbe
Sent: Wednesday, December 12, 2018 5:09 PM
To: Diana Fazely
Subject: RE: NEW Carbon intensity number

Hi Diana. Would you please check with SVP to see if they have a more current carbon intensity number?

The number last year was 0.302 MTCO2e/MWh, which comes out to 665.8 lbs / MWh.

I know we have had a 2020 goal of 380 lbs / MWh for some time, so I'm wondering whether we are getting closer to that goal?

Thanks

Xander

From: Diana Fazely

Sent: Monday, October 16, 2017 4:27 PM
To: Alexander Abbe
Subject: FW: NEW Carbon intensity number

Thank you,
Diana

Diana Fazely | Deputy City Attorney
City Attorney's Office
1500 Warburton Avenue | Santa Clara, CA 95050
D: 408.615.2232 | F: 408.249.7846

From: Kathleen Hughes
Sent: Monday, October 16, 2017 4:01 PM
To: John Roukema; Ann Hatcher; Steve Hance; Larry Owens
Cc: Wendy Stone; Arielle Romero; Gwen Goodman; Diana Fazely
Subject: NEW Carbon intensity number

After further discussion and dissection with Larry. I arrived at slightly more conservative numbers. Previously, I averaged all the Natural Gas (NG) Plants emissions. This time I pulled out DVR and Cogen separately and averaged the other NG plants. Also, I used Total MWh Sales instead of Purchased Power & Generation for Retail.

2016 Average Monthly Customer Count & Total MWh Sales:

	MWH	Emissions (metric tons CO2e)
DVR	974,174	400,837
COGEN	48,254	38,997
Other NG	284,684	121,845
Coal	357,747	413,557
Unspecified	137,648	58,913
	1,802,507	1,034,149

Average Monthly Customer Count & Total MWh Sales: 3,425,802 MWh

Carbon Intensity **0.302** **MTCO2e/MWh**

Average Monthly Customer Count & Total MWh Sales – Utility Fact Sheet 2016

DVR per CARB emission reporting 2016
COGEN per CARB emission reporting 2016
Other NG (Other Natural Gas) used unspecified emission factor of .428
Coal per CARB emission reporting(includes disallowed wind RPS ADJ) 2016
Unspecified – emission factor of .428

Kathleen Smiley Hughes | Acting Division Manager, Joint Powers
www.SiliconValleyPower.com
1500 Warburton Avenue | Santa Clara, CA 95050
Office: 408.615.6632 | Mobile: 408.621.5871