

4TH AND ST. JOHN MIXED-USE STUDENT HOUSING PROJECT AIR QUALITY & GREENHOUSE GAS ASSESSMENT

San José, California

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Prepared for:

**Tyler Rogers
Assistant Project Manager
David J. Powers & Associates, Inc.
1736 Franklin Street, 3rd Floor
Oakland, CA 94612**

Prepared by:

**Casey Divine,
Mimi McNamara &
James Reyff**

ILLINGWORTH & RODKIN, INC.
//// Acoustics • Air Quality ///
429 East Cotati Avenue
Cotati, CA 94931
(707) 794-0400

I&R Job No.: 17-051

Introduction

The purpose of this report is to address air quality impacts and compute greenhouse gas (GHG) emissions associated with the 4th and St. John Mixed-Use Student Housing project on the northeast corner of N. 4th Street and E. St. John Street in San José, California. The air quality impacts and GHG emissions would be associated with the demolition of the existing uses at the site, construction of the new building and infrastructure, and operation of the project. Air pollutant and GHG emissions associated with the construction and operation of the project were predicted using models. 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).¹

Project Description

The one-acre project site is currently occupied by paved and unpaved parking and two vacant residences. The proposed project is seeking a Rezoning and Site Development Permit to allow for the relocation of the existing single-family homes off-site and the construction of a 23-story, mixed-use building with up to 298 student housing units and approximately 8,978 square feet (sf) of ground floor retail space. The project site would be rezoned to DC – Downtown Commercial. Three levels of parking would be provided above the ground floor retail and parking, for a total of 287 parking spaces. The 5th through 23rd floors would consist of student housing units. The proposed project falls within the boundary limits of the Downtown San José Strategy Plan 2040 (DTS 2040). Applicable mitigation measures from the DTS 2040 will be applied to this project.

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 (PM₁₀), 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 (PM₁₀) and fine particulate matter where particles have a diameter of 2.5

¹ Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

micrometers or less (PM_{2.5}). Elevated concentrations of PM₁₀ 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 2015.² See *Attachment 1* for a detailed description of the community risk modeling methodology used in this assessment.

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. The project would introduce new sensitive receptors in the form of residences. The closest sensitive receptors to the project site are in the adjacent single- and multi-family residences to the north and east of the project site. There are additional residences at further distances to the north, east, and south of the site.

² 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.

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 (PM₁₀ 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.³

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.⁴ In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

³ USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

⁴ California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

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*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.

⁵ Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.

San José Envision 2040 General Plan

The San José Envision 2040 General Plan includes goals, policies, and actions to reduce exposure of the City’s sensitive population to exposure of air pollution and toxic air contaminants or TACs. The following goals, policies, and actions are applicable to the proposed project and this assessment:

Applicable Goals – Air Pollutant Emission Reduction

Goal MS-10 Minimize emissions from new development.

Applicable Policies – Air Pollutant Emission Reduction

- MS-10.1* Assess projected air emissions from new development in conformance with the BAAQMD CEQA Guidelines and relative to state and federal standards. Identify and implement feasible air emission reduction measures.
- MS-10.2* Consider the cumulative air quality impacts from proposed developments for proposed land use designation changes and new development, consistent with the region’s Clean Air Plan and State law.
- MS-10.3* Promote the expansion and improvement of public transportation services and facilities, where appropriate, to both encourage energy conservation and reduce air pollution.

Applicable Goals – Toxic Air Contaminants

Goal MS-11 Minimize exposure of people to air pollution and toxic air contaminants such as ozone, carbon monoxide, lead, and particulate matter.

Applicable Policies – Toxic Air Contaminants

- MS-11.1* Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution such as freeways and industrial uses. Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety.
- MS-11.4* Encourage the installation of appropriate air filtration at existing schools, residences, and other sensitive receptor uses adversely affected by pollution sources.
- MS-11.5* Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses.

Actions – Toxic Air Contaminants

MS-11.7 Consult with BAAQMD to identify stationary and mobile TAC sources and determine the need for and requirements of a health risk assessment for proposed developments.

MS-11.8 For new projects that generate truck traffic, require signage which reminds drivers that the State truck idling law limits truck idling to five minutes.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District’s 2011 *CEQA Air Quality Guidelines*. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the *CEQA Air Quality Guidelines* in 2017 to include the latest significance thresholds that were used in this analysis are summarized in Table 1. The City’s 2040 General Plan includes a policy to reduce exposure of new sensitive receptors to hazardous pollutants (Guiding Policy 12.6-G-1). Therefore, the effect of existing air pollutant and TAC sources upon the project site was assessed.

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 average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other 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	>10.0 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	
Greenhouse Gas Emissions			
Land Use Projects – direct and indirect emissions	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons annually or 4.6 metric tons per capita (for 2020) 660 metric tons annually or 2.6 metric tons per capita (for 2030) *		
Note: ROG = reactive organic gases, NO _x = nitrogen oxides, PM ₁₀ = coarse 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. GHG = greenhouse gases.			
*BAAQMD does not have a recommended post-2020 GHG threshold.			

Air Quality Impacts and Mitigation Measures

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

The Bay Area is considered a non-attainment area for ground-level ozone and PM_{2.5} under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM₁₀ 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 PM₁₀, 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), PM₁₀, and PM_{2.5} and apply to both construction period and operational period impacts.

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 2*.

Construction period emissions

CalEEMod provided annual emissions for construction and estimates emissions 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: 298 dwelling units and 525,849-sf entered as “Apartments High Rise”, 8,978-sf entered as “Strip Mall”, and 287 spaces entered as “Enclosed Parking with Elevator” all on a 1-acre site. In addition, 650 tons of existing pavement demolition, 6,500 cubic yards (cy) of soil exported during the grading phase, and 2,600 cement truck round trips during building construction were entered into the model.

Construction was assumed to begin May 2020 and last 27 months. There were an estimated 566 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, PM₁₀ 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.

Table 2. Construction Period Emissions

Scenario	ROG	NOx	PM₁₀ Exhaust	PM_{2.5} Exhaust
Total construction emissions (tons)	4.1 tons	3.1 tons	<0.1 tons	<0.1 tons
Average daily emissions (pounds)¹	14.5 lbs./day	11.1 lbs./day	0.2 lbs./day	0.2 lbs./day
<i>BAAQMD Thresholds (pounds per day)</i>	54 lbs./day	54 lbs./day	82 lbs./day	54 lbs./day
Exceed Threshold?	No	No	No	No

Notes: ¹Assumes 566 workdays.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM₁₀ 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.

The proposed project falls within *the Downtown San José Strategy Plan 2040 EIR* plan area, which included mitigation measures to control dust and exhaust during construction. The *Downtown San José Strategy Plan 2040* requires that all projects shall implement the following BAAQMD-recommended best management practices for construction equipment exhaust controls:

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. Additional measures are identified to reduce construction equipment exhaust emissions. 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.

Effectiveness of Measure

The measures above are consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines. The impact would be considered *less-than-significant* with the inclusion of these measures.

Operational Period Emissions

Operational air pollutant 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 also 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 for the construction period modeling.

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

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

Saturday and Sunday trip rates were assumed to be the weekday rate adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips. The project traffic analysis provided project trip generation values for the residential and retail land uses.⁶ The weekday trip rate used for the residential land use was 3.21 trips per dwelling unit, which included a 4% *Residential – Retail Reduction*, a 22% *Location Based Reduction (Urban High-Transit)*, and a 4% *VMT Reduction*. This changed the Saturday trip rate for the residential land use to 3.73 trips per unit and the Sunday trip rate to 2.79 trips per unit. The weekday trip rate used for the retail land use was 18.16 trips per 1,000-sf, which also included a 15% *Residential – Retail Reduction* and a 17% *Location Based Reduction (Urban High-Transit)*. The Saturday trip rate for the office land use changed to 17.23 trips per 1,000-sf and the Sunday trip rate changed to 8.37 trips per 1,000-sf.

Energy

CalEEMod defaults for energy use were used, which include the 2016 Title 24 Building Standards. Indirect emissions from electricity were computed in CalEEMod. The model has a default rate of 641.3 pounds of CO₂ per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. The rate was adjusted to account for PG&E's projected 2020 CO₂ intensity rate. This 2020 rate is based, in part, on the requirement of a renewable energy portfolio standard of 33 percent by the year 2020. The derived 2020 rate for PG&E was estimated at 290 pounds of CO₂ per megawatt of electricity delivered.⁷

Other Inputs

Default model assumptions for emissions associated with solid waste generation use were applied to the project. Water/wastewater use were changed to 100% aerobic conditions to represent wastewater treatment plant conditions. All hearths were assumed to be powered by gas.

Existing Uses

The existing land uses on the project site includes two vacant single-family homes and a vacant parking lot. This use produces low operational and traffic emissions that it would not make a considerable offset to the proposed project. Therefore, the existing uses emissions were not included.

Computed 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.

⁶ Hexagon Transportation Consultants, Inc., "Fourth Street and St. John Street Student Housing Local Transportation Analysis", June 2019.

⁷ Pacific Gas & Electric, 2015. *Greenhouse Gas Emission Factors: Guidance for PG&E Customers*. November.

Table 3. Operational Emissions

Scenario	ROG	NOx	PM ₁₀	PM _{2.5}
2023 Project Operational Emissions (<i>tons/year</i>)	2.8 tons	1.0 tons	0.9 tons	0.3 tons
<i>BAAQMD Thresholds (tons/year)</i>	<i>10 tons</i>	<i>10 tons</i>	<i>15 tons</i>	<i>10 tons</i>
<i>Exceed Threshold?</i>	No	No	No	No
2023 Project Operational Emissions (<i>lbs/day</i>) ¹	15.3 lbs.	5.6 lbs.	5.2 lbs.	1.5 lbs.
<i>BAAQMD Thresholds (pounds/day)</i>	<i>54 lbs.</i>	<i>54 lbs.</i>	<i>82 lbs.</i>	<i>54 lbs.</i>
<i>Exceed Threshold?</i>	No	No	No	No

Notes: ¹ Assumes 365-day operation.

Impact: 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.

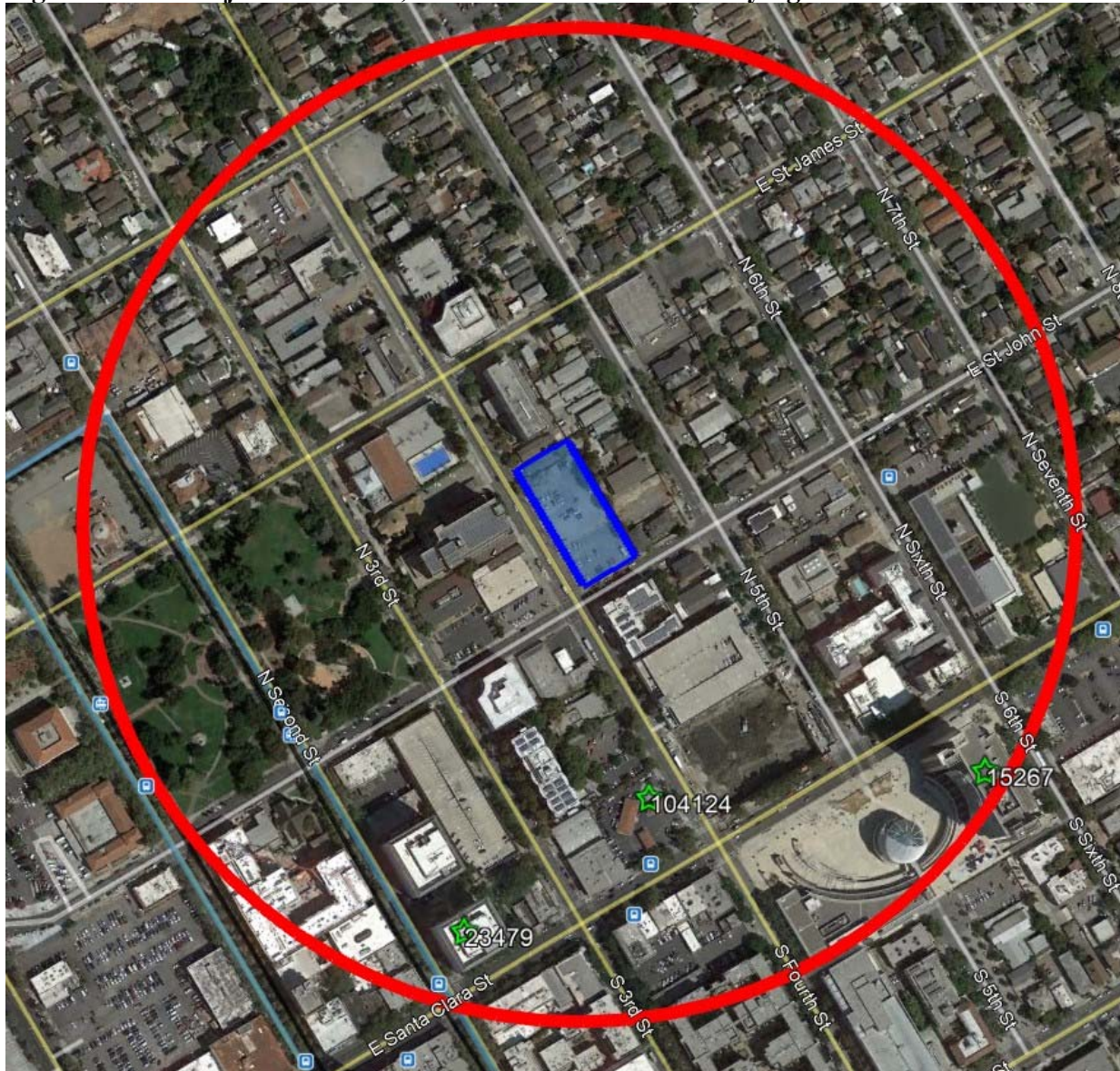
The project would introduce new residents that are sensitive receptors. There are several sources of TACs and localized air pollutants in the vicinity of the project. The impacts of these sources upon the project were assessed. Temporary project construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors. A construction health risk assessment was prepared to address construction impacts caused by the project. Operation of the project is not expected to be a source of TAC or localized air pollutant emissions, as the project would not generate substantial truck traffic or include stationary sources of emissions, such as generators powered by diesel engines.

Community risk impacts are addressed by predicting increased lifetime cancer risk, the increase in annual PM_{2.5} concentrations and computing the Hazard Index (HI) for non-cancer health risks. The methodology for computing community risks impacts is contained in *Attachment 1*.

Operational Community Health Risk Impacts

Community health risk assessments typically look at all substantial sources of TACs located within 1,000 feet of project sites. These sources include railways, freeways or highways, busy surface streets, and stationary sources identified by BAAQMD. A review of the project area indicates that traffic on E. Santa Clara Street has average daily traffic (ADT) volumes of over 10,000 vehicles, which are sources of TACs. All other roadways within the area are assumed to have ADTs less than 10,000 vehicles. Three stationary sources were identified within the 1,000-foot influence area using the BAAQMD’s stationary source website map and Google Earth map. This project would not introduce any new TAC sources, such as substantial truck traffic or generators powered by diesel engines. Figure 1 shows the sources affecting the project site. Community risk impacts from these sources upon the project site are reported in Table 4. Details of the screening, modeling, and community risk calculations are included in *Attachment 3*.

Figure 1. Project Site and 1,000-Foot Radius for Identifying TAC Sources



Local Roadways

For local roadways, BAAQMD has provided the *Roadway Screening Analysis Calculator* to assess whether roadways with traffic volumes of over 10,000 vehicles per day may have a potentially significant effect on a proposed project. Note this is a screening model and more refined modeling could be conducted if potentially significant impacts are identified. Two adjustments were made to the cancer risk predictions made by this calculator: (1) adjustment for latest vehicle emissions rates and (2) adjustment of cancer risk to reflect new OEHHA guidance (see *Attachment 1*).

The calculator uses EMFAC2011 emission rates for the year 2014. In addition, a new version of the emissions factor model, EMFAC2014 is available. This version predicts lower emission rates. An adjustment factor of 0.5 was developed by comparing emission rates of total organic gases (TOG) for running exhaust and running losses developed using EMFAC2011 for year 2014 and

those from EMFAC2014 for 2018. The predicted cancer risk was then adjusted using a factor of 1.3744 to account for new OEHHA guidance. This factor was provided by BAAQMD for use with their CEQA screening tools that are used to predict cancer risk.⁸

The ADT on E. Santa Clara Street was estimated to be 28,145 vehicles and the ADT on Paseo Padre Parkway was estimated to be 14,000 vehicles. These estimates were based on the peak hour turning movement counts included in the project's July 2017 traffic analysis,⁹ as the June 2019 traffic study did not include existing or future project traffic volumes since the project is covered under DTS 2040. The a.m. and p.m. peak-hour volumes for the background plus project scenario were averaged and then multiplied by 10 to estimate the ADT.

The BAAQMD *Roadway Screening Analysis Calculator* for Santa Clara County was used for these roadways. E. Santa Clara Street was identified as an east-west roadway with the project site north of the roadway. Estimated risk values for the roadway upon the project's sensitive receptors are listed in Table 4. Note that BAAQMD has found that non-cancer hazards from all local roadways would be below a HI of 0.03.

Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Stationary Source Risk & Hazard Analysis Tool*. This mapping tool uses Google Earth and identifies the location of nearby stationary sources and their estimated risk and hazard impacts. In addition, BAAQMD's *Permitted Stationary Sources 2017* GIS website¹⁰ was used to locate updated nearby permitted stationary sources. A Stationary Source Information Form (SSIF) containing the identified sources was prepared and submitted to BAAQMD. BAAQMD provided updated emissions data.¹¹ Those data were input into BAAQMD's *Risk and Hazards Emissions Screening Calculator* which computes the cancer risk, annual PM_{2.5} concentrations, and HI using adjustments to account for new OEHHA guidance and distance from the sources.

Three stationary sources were identified; Plant #104124 is a gas dispensing facility, Plant #15267 has multiple sources, and Plant #23479 has diesel-powered equipment. Concentrations and community risk impacts from these sources upon the project site are reported in Table 4.

Cumulative Community Health Risk at Project Site

Community risk impacts from combined sources upon the project site are reported in Table 4. As shown, the annual cancer risks, annual PM_{2.5} concentrations, and HI are all below their respective single and cumulative source significance thresholds and would be considered a *less-than significant* impact.

⁸ Correspondence with Alison Kirk, BAAQMD, November 23, 2015.

⁹ Hexagon Transportation Consultants, Inc., "4th Street & St. John Street Housing Traffic Impact Analysis," July 2017.

¹⁰ BAAQMD,

<https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65>

¹¹ Correspondence with Areana Flores, BAAQMD, July 10, 2019.

Table 4. Community Risk Impact to New Project Residences

Source	Cancer Risk (per million)	Annual PM _{2.5} (µg/m ³)	Hazard Index
E. Santa Clara Street (east-west) at 625 feet north, ADT 14,000	1.0	0.03	<0.03
Plant #104124 (Gas Station) at 445 feet	0.2	--	<0.01
Plant #15267 (Generator and Boilers) at 800 feet	0.3	0.03	<0.01
Plant #23479 (Generator and Pump) at 750 feet	0.2	<0.01	<0.01
<i>BAAQMD Single-Source Threshold</i>	>10.0	>0.3	>1.0
<i>Significant?</i>	<i>No</i>	<i>No</i>	<i>No</i>
Cumulative Total	1.7	<0.07	<0.06
<i>BAAQMD Cumulative Source Threshold</i>	>100	>0.8	>10.0
<i>Significant?</i>	<i>No</i>	<i>No</i>	<i>No</i>

Construction Community Health Risk Impacts

Project Construction Activity

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. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to PM_{2.5}. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and PM_{2.5}.¹² This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Construction Emissions

The CalEEMod model provided total annual PM₁₀ exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages as 0.2587 tons (517 pounds). The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive PM_{2.5} dust emissions were calculated by CalEEMod as 0.2315 tons (463 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and PM_{2.5} at sensitive receptors (residences) in the vicinity of the project construction area. The AERMOD

¹² DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.¹³ For each of the construction sites modeled, the modeling utilized two area sources to represent the on-site construction emissions, one for exhaust emissions and one for fugitive dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 6 meters (19.7 feet) was used for the area sources. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive PM_{2.5} emissions, a near-ground level release height of 2 meters (6.6 feet) was used for the area sources. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Construction emissions were modeled as occurring daily between 7 a.m. to 4 p.m., when the majority of construction activity would occur.

The modeling used a 5-year meteorological data set (2006-2010) from the San José Airport prepared for use with the AERMOD model by the BAAQMD. Annual DPM and PM_{2.5} concentrations from construction activities at the project site during the 2020-2021 period were calculated using the model. DPM and PM_{2.5} concentrations were calculated at nearby sensitive receptor locations. Receptor heights of 1.5 meters (4.9 feet), 6.1 meters (20 feet), and 9.1 meters (30 feet) were used to represent the breathing height of nearby residences on the first, second, and third floors of nearby apartments and single-family homes.

The maximum-modeled annual DPM and PM_{2.5} concentrations, which includes both the DPM and fugitive PM_{2.5} concentrations, were identified at nearby sensitive receptors (as shown in Figure 2) to find the maximally exposed individuals (MEIs). Using the maximum annual modeled DPM concentrations, the maximum increased cancer risks were calculated using BAAQMD recommended methods and exposure parameters described in *Attachment 1*. Non-cancer health hazards and maximum PM_{2.5} concentrations were also calculated and identified.

Results of this assessment indicated that the construction MEI was located on the second floor (6.1 meters) of the multi-family apartment building located south of the project site. The maximum excess residential cancer risks and annual maximum PM_{2.5} concentration at this location would be greater than the BAAQMD significance thresholds of 10 in one million for cancer risk and 0.3 µg/m³ for PM_{2.5} concentration. Table 5 summarizes the maximum cancer risks, PM_{2.5} concentrations, and health hazard indexes for project related construction activities affecting the residential MEI. *Attachment 4* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

¹³ Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0*. May.

Figure 2. Project Construction Site and Locations of Off-Site Sensitive Receptors and Maximum TAC Impacts



Cumulative Community Health Risk at Construction MEI

Cumulative TAC impacts were assessed by predicting the combined community risk impacts to the construction MEI and nearby sources. Table 5 reports both the project and cumulative community risk impacts. The project would have a *significant* impact with respect to community risk caused by project construction activities, since the maximum cancer risk is above the single-source threshold of 10.0 per million. *Mitigation Measures AQ-1 would reduce these impacts to less-than-significant levels.* As shown in Table 5, the combined cancer, PM_{2.5}, hazard risk values, which includes unmitigated and mitigated, would not exceed the cumulative thresholds.

Table 5. Impacts from Combined Sources at Construction MEI

Source		Cancer Risk (per million)	Annual PM _{2.5} (µg/m ³)	Hazard Index
Project Construction	Unmitigated	42.1 (infant)	0.19	0.03
	Mitigated ¹	4.3 (infant)	0.06	<0.01
BAAQMD Single-Source Threshold		>10.0	>0.3	>1.0
<i>Significant?</i>	Unmitigated	<i>Yes</i>	<i>No</i>	<i>No</i>
	Mitigated ¹	<i>No</i>	<i>No</i>	<i>No</i>
E. Santa Clara Street (east-west) at 550 feet north, ADT 14,000		1.2	0.03	<0.03
Plant #104124 (Gas Station) at 415 feet		0.3	--	<0.01
Plant #15267 (Generator and Boilers) at 750 feet		0.4	0.04	<0.01
Plant #23479 (Generator and Pump) at 800 feet		0.2	<0.01	<0.01
<i>Cumulative Total</i>	Unmitigated	44.2	<0.27	<0.09
	Mitigated ¹	6.4	<0.14	<0.07
BAAQMD Cumulative Source Threshold		>100	>0.8	>10.0
<i>Significant?</i>	Unmitigated	<i>No</i>	<i>No</i>	<i>No</i>
	Mitigated ¹	<i>No</i>	<i>No</i>	<i>No</i>

¹ Based on modeling results that assume the use of equipment meeting U.S. EPA Tier 4 Interim standards and incorporation of construction best management practices to control dust.

Mitigation Measure AQ-1: Selection of equipment during construction to minimize emissions. Such equipment selection would include the following:

The project shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average 80 percent reduction in particulate matter exhaust emissions or greater. One feasible plan to achieve this reduction would include the following:

- All diesel-powered off-road equipment, larger than 25 horsepower, operating on the site for more than two days continuously shall, at a minimum, meet U.S. EPA particulate matter emissions standards for Tier 4 Interim engines or equivalent. The use of equipment with CARB-certified Level 3 Diesel Particulate Filters¹⁴ would also meet this requirement. Alternatively, the use of equipment that includes electric or alternatively-fueled equipment (i.e., non-diesel) would meet this requirement.
- Use of electric cranes during building exterior construction.
- Where appropriate, use line power to provide electricity to avoid use of diesel-powered generators, air compressors, welders, cranes, etc.
- Implement the *Downtown San José Strategy Plan 2040* construction best management practices that implements measures to control dust and equipment exhaust during construction.

Effectiveness of Mitigation Measure

Project construction activities were analyzed with the assumption of Tier 4 interim equipment usage under Mitigation Measure AQ-1. With this implementation of this mitigation, the computed maximum increased lifetime residential cancer risk from construction, assuming infant exposure, would be 4.3 in one million or less, the maximum annual PM_{2.5} concentration would be 0.06 µg/m³, and the HI would be less than 0.01. As a result, impacts would be reduced to *less-than-significant* with respect to community risk caused by construction activities.

¹⁴ See <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>

Greenhouse Gas Emissions

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 (CO₂) and water vapor but there are also several others, most importantly methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO₂ and N₂O are byproducts of fossil fuel combustion.
- N₂O is associated with agricultural operations such as fertilization of crops.
- CH₄ 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 CO₂ 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 CO₂ equivalents (CO₂e).

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.

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 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;
- 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.

BAAQMD Significance Thresholds

The BAAQMD’s CEQA Air Quality Guidelines recommended a GHG threshold of 1,100 metric tons or 4.6 metric tons (MT) per capita. These thresholds were developed based on meeting the 2020 GHG targets set in the scoping plan that addressed AB 32. 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 and a bright-line threshold of 660 MT CO_{2e}/year based on the GHG reduction goals of EO B-30-15. The service population metric of 2.6 is calculated for 2030 based on the 1990 inventory and the projected 2030 statewide population and employment levels.¹⁵ The 2030 bright-line threshold is a 40 percent reduction of the 2020 1,100 MT CO_{2e}/year threshold.

Impact: 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.

¹⁵ 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.

Emissions for the proposed project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines.

CalEEMod Modeling

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 within the operational period emissions. CalEEMod output is included in *Attachment 2*.

Service Population Emissions

The project service population efficiency rate is based on the number of future residents and future full-time employees. According to the project description, the project will add 1,424 beds. This analysis assumes that as student housing, there would be one person per bed. Therefore, number of future student residents is estimated to be 1,424. The number of retail workers was estimated based on approximately one worker per 250-sf of small retail space.¹⁶ Based on the project's proposed 8,978-sf of retail use, there would be 36 future full-time employees. The project's total service population is estimated to be 1,460.

Construction Emissions

GHG emissions associated with construction were computed to be 979 MT of CO₂e 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.

¹⁶ Strategic Economics. 2016. *San Jose Market Overview and Employment Lands Analysis*. January 20.

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. As shown in Table 6, annual emissions resulting from operation of the proposed project are predicted to be 1,404 MT of CO_{2e} for the year 2023 and 1,255 MT of CO_{2e} for the year 2030. The 2023 and 2030 emissions exceed the 2030 “Substantial Progress” threshold of 660 MT of CO_{2e}/yr. The Service Population Emissions for the year 2023 would be 1.0 and 0.9 for the year 2030. The 2023 and 2030 Service Population Emissions do not exceed the “Substantial Progress” efficiency metric of 2.6 MT CO_{2e}/year/service population.

To be considered significant, the project must exceed both the GHG significance threshold in metric tons per year and the service population significance threshold. This project does not exceed the service population significance threshold. Therefore, the project would have a *less-than-significant* impact regarding GHG emissions.

Table 6. Annual Project GHG Emissions (CO_{2e}) in Metric Tons

Source Category	Proposed Project in 2023	Proposed Project in 2030
Area	16	16
Energy Consumption	405	405
Mobile	876	727
Solid Waste Generation	74	74
Water Usage	33	33
Total	1,404	1,255
<i>Significance Threshold</i>	<i>660 MT CO_{2e}/yr</i>	
Service Population Emissions (MT CO _{2e} /year/service population)	1.0	0.9
<i>Significance Threshold</i>	<i>2.6</i>	
<i>Significant? (Exceeds both thresholds)</i>	<i>No</i>	<i>No</i>

Supporting Documentation

Attachment 1 is the methodology used to compute community risk impacts, including the methods to compute lifetime cancer risk from exposure to project emissions.

Attachment 2 includes the CalEEMod output for project construction and operational criteria air pollutant and GHG emissions. The operational output for existing uses is also included in this attachment. Also included are any modeling assumptions.

Attachment 3 includes the screening community risk calculations from sources affecting the project and construction MEI. BAAQMD's *Risk and Hazards Emissions Screening Calculator* files for this assessment, which are quite voluminous, are available upon request.

Attachment 4 is the construction health risk assessment. AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.¹⁷ These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.¹⁸ This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.¹⁹ Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

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

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

¹⁷ 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.

¹⁸ CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.

¹⁹ BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD.

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

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

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

Where:

- CPF = Cancer potency factor (mg/kg-day)⁻¹
- ASF = Age sensitivity factor for specified age group
- ED = Exposure duration (years)
- AT = Averaging time for lifetime cancer risk (years)
- FAH = Fraction of time spent at home (unitless)

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

Where:

- C_{air} = concentration in air (µg/m³)
- DBR = daily breathing rate (L/kg body weight-day)
- A = Inhalation absorption factor
- EF = Exposure frequency (days/year)
- 10⁻⁶ = Conversion factor

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

Parameter	Exposure Type →	Infant		Child		Adult
	Age Range →	3 rd Trimester	0<2	2 < 9	2 < 16	16 - 30
DPM Cancer Potency Factor (mg/kg-day) ⁻¹		1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80 th Percentile Rate		273	758	631	572	261
Daily Breathing Rate (L/kg-day) 95 th Percentile Rate		361	1,090	861	745	335
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time (years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	14	14
Exposure Frequency (days/year)		350	350	350	350	350
Age Sensitivity Factor		10	10	3	3	1
Fraction of Time at Home		0.85-1.0	0.85-1.0	0.72-1.0	0.72-1.0	0.73

Non-Cancer Hazards

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

Annual PM_{2.5} Concentrations

While not a TAC, fine particulate matter (PM_{2.5}) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for PM_{2.5} (project level and cumulative) are in terms of an increase in the annual average concentration. When considering PM_{2.5} impacts, the contribution from all sources of PM_{2.5} emissions should be included. For projects with potential impacts from nearby local roadways, the PM_{2.5} impacts should include those from vehicle exhaust emissions, PM_{2.5} generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 2: CalEEMod Modeling Output

17-051 4th and St. John (Rev 2019) AQ - Santa Clara County, Annual

**17-051 4th and St. John (Rev 2019) AQ
Santa Clara County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	287.00	Space	0.00	115,700.00	0
Apartments High Rise	298.00	Dwelling Unit	1.00	525,849.00	852
Strip Mall	8.98	1000sqft	0.00	8,978.00	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/MW hr)	290	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 290 rate

Land Use - Applicant provided land uses, 1 acre site, Student housing: 298 dwelling units (525,849-sqft for both housing and other), retail (8,978-sqft) & parking garage 287 spaces (115,700-sqft)

Construction Phase - Applicant construction schedule using the total workdays provided in the sheet

Off-road Equipment - Project applicant construction equipment. Other equipment --> man lift

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Trips and VMT - 2,600 total cement round-trips during building construction

Demolition - 650 tons of pavement demolished

Grading - 6500-cy of soil hauled during grading

Vehicle Trips - Residential w/reduction: weekday 3.21, Sat 3.73, Sun 2.79. Strip mall w/reduction: weekday 18.16, Sat 17.23, Sun 8.37

Woodstoves - No wood all gas

Energy Use -

Water And Wastewater - 100% aerobic

Construction Off-road Equipment Mitigation - Electrical cranes

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstructionPhase	NumDays	5.00	275.00
tblConstructionPhase	NumDays	100.00	350.00
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	1.00	5.00
tblConstructionPhase	PhaseEndDate	10/21/2020	7/4/2022
tblConstructionPhase	PhaseEndDate	10/7/2020	1/17/2022
tblConstructionPhase	PhaseEndDate	5/15/2020	6/5/2020
tblConstructionPhase	PhaseEndDate	5/20/2020	7/24/2020
tblConstructionPhase	PhaseEndDate	10/14/2020	5/3/2022
tblConstructionPhase	PhaseEndDate	5/18/2020	6/12/2020
tblConstructionPhase	PhaseStartDate	10/15/2020	6/15/2021
tblConstructionPhase	PhaseStartDate	5/21/2020	9/15/2020
tblConstructionPhase	PhaseStartDate	5/19/2020	6/15/2020
tblConstructionPhase	PhaseStartDate	10/8/2020	4/20/2022

tblConstructionPhase	PhaseStartDate	5/16/2020	6/8/2020
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	44.70	95.36
tblFireplaces	NumberWood	50.66	0.00
tblGrading	MaterialExported	0.00	6,500.00
tblLandUse	LandUseSquareFeet	114,800.00	115,700.00
tblLandUse	LandUseSquareFeet	298,000.00	525,849.00
tblLandUse	LandUseSquareFeet	8,980.00	8,978.00
tblLandUse	LotAcreage	2.58	0.00
tblLandUse	LotAcreage	4.81	1.00
tblLandUse	LotAcreage	0.21	0.00
tblOffRoadEquipment	HorsePower	172.00	20.00
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.42	0.03
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	2.90
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	6.30
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	3.10
tblOffRoadEquipment	UsageHours	8.00	0.50
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.80
tblOffRoadEquipment	UsageHours	7.00	0.80
tblOffRoadEquipment	UsageHours	8.00	1.60
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.50
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	1.60
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripNumber	813.00	812.00
tblTripsAndVMT	HaulingTripNumber	0.00	5,200.00
tblVehicleTrips	ST_TR	4.98	3.73
tblVehicleTrips	ST_TR	42.04	17.23
tblVehicleTrips	SU_TR	3.65	2.79
tblVehicleTrips	SU_TR	20.43	8.37

tblVehicleTrips	WD_TR	4.20	3.21
tblVehicleTrips	WD_TR	44.32	18.16
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
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0917	0.9926	0.6440	2.7500e-003	0.1567	0.0223	0.1789	0.0428	0.0206	0.0634	0.0000	255.5440	255.5440	0.0242	0.0000	256.1482
2021	2.1964	1.986	1.6183	7.0900e-003	0.3915	0.0357	0.4272	0.1053	0.0334	0.1387	0.0000	657.6828	657.6828	0.0431	0.0000	658.7590
2022	1.8241	0.1585	0.2504	7.1000e-004	0.0746	4.78E-03	0.0794	0.0192	4.61E-03	0.0239	0.0000	64.1214	64.1214	5.3400e-003	0.0000	64.2550
Maximum	2.1964	1.9860	1.6183	7.0900e-003	0.3915	0.0357	0.4272	0.1053	0.0334	0.1387	0.0000	657.6828	657.6828	0.0431	0.0000	658.7590

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					
2020	0.071	0.7462	0.5473	2.75E-03	0.1567	0.0121	0.1688	0.0428	0.0113	0.0541	0.0000	232.3738	232.3738	0.0167	0.0000	232.7906
2021	2.1539	1.4877	1.4145	7.09E-03	0.3915	0.0155	0.407	0.1053	0.0148	0.1201	0.0000	605.5915	605.5915	0.0262	0.0000	606.2465
2022	1.8225	0.1404	0.2422	7.10E-04	0.0746	4.03E-03	0.0786	0.0192	3.92E-03	0.0232	0.0000	61.9256	61.9256	4.6300e-003	0.0000	62.0414
Maximum	2.1539	1.4877	1.4145	7.0900e-003	0.3915	0.0155	0.4070	0.1053	0.0148	0.1201	0.0000	605.5915	605.5915	0.0262	0.0000	606.2465

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	1.58	24.32	12.28	0.00	0.00	49.60	4.54	0.00	48.87	12.68	0.00	7.93	7.93	34.54	0.00	7.97

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-4-2020	8-3-2020	0.3407	0.2745
2	8-4-2020	11-3-2020	0.3480	0.2461
3	11-4-2020	2-3-2021	0.5642	0.4185
4	2-4-2021	5-3-2021	0.5090	0.3773
5	5-4-2021	8-3-2021	1.0397	0.9036
6	8-4-2021	11-3-2021	1.4810	1.3448
7	11-4-2021	2-3-2022	1.3804	1.2727
8	2-4-2022	5-3-2022	0.9247	0.9247
9	5-4-2022	8-3-2022	0.6423	0.6423
		Highest	1.4810	1.3448

2.2 Overall Operational

Unmitigated Operational

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	5/4/2020	6/5/2020	5	25	
2	Site Preparation	Site Preparation	6/8/2020	6/12/2020	5	5	
3	Grading	Grading	6/15/2020	7/24/2020	5	30	
4	Trenching	Trenching	6/28/2020	8/14/2020	5	35	
5	Building Construction	Building Construction	9/15/2020	1/17/2022	5	350	
6	Architectural Coating	Architectural Coating	6/15/2021	7/4/2022	5	275	
7	Paving	Paving	4/20/2022	5/3/2022	5	10	

Acres of Grading (Site Preparation Phase): 1.25

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,064,844; Residential Outdoor: 354,948; Non-Residential Indoor: 13,467; Non-Residential Outdoor: 4,489; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Demolition	Rubber Tired Dozers	1	1.60	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	1.60	97	0.37
Site Preparation	Graders	1	4.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	4.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Grading	Graders	0	0.00	187	0.41
Grading	Rubber Tired Dozers	0	0.00	247	0.40

Grading	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Demolition	Excavators	1	3.20	158	0.38
Grading	Excavators	1	5.30	158	0.38
Building Construction	Cranes	1	6.30	231	0.29
Building Construction	Forklifts	1	3.10	89	0.20
Building Construction	Generator Sets	1	0.50	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Building Construction	Welders	1	0.50	46	0.45
Trenching	Cranes	1	6.90	231	0.29
Architectural Coating	Air Compressors	1	2.90	78	0.48
Trenching	Tractors/Loaders/Backhoes	1	1.30	97	0.37
Paving	Pavers	0	0.00	130	0.42
Paving	Paving Equipment	1	0.80	132	0.36
Paving	Rollers	1	0.80	80	0.38
Trenching	Bore/Drill Rigs	1	6.00	221	0.50
Architectural Coating	Aerial Lifts	2	3.30	63	0.31
Architectural Coating	Other Construction Equipment	1	7.00	20	0.03

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	3	8.00	0.00	64.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	2	5.00	0.00	812.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	266.00	52.00	5,200.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	4	53.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.9500e-003	0.0000	6.9500e-003	1.0500e-003	0.0000	1.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4500e-003	0.0457	0.0324	5.0000e-005		2.3000e-003	2.3000e-003		2.1200e-003	2.1200e-003	0.0000	4.8270	4.8270	1.5600e-003	0.0000	4.8660
Total	4.4500e-003	0.0457	0.0324	5.0000e-005	6.9500e-003	2.3000e-003	9.2500e-003	1.0500e-003	2.1200e-003	3.1700e-003	0.0000	4.8270	4.8270	1.5600e-003	0.0000	4.8660

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	9.2900e-003	1.9000e-003	3.0000e-005	5.4000e-004	3.0000e-005	5.7000e-004	1.5000e-004	3.0000e-005	1.8000e-004	0.0000	2.4407	2.4407	1.1000e-004	0.0000	2.4435
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.4000e-004	2.5000e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6802	0.6802	2.0000e-005	0.0000	0.6806
Total	6.0000e-004	9.5300e-003	4.4000e-003	4.0000e-005	1.3300e-003	4.0000e-005	1.3700e-003	3.6000e-004	3.0000e-005	4.0000e-004	0.0000	3.1208	3.1208	1.3000e-004	0.0000	3.1240

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					6.9500e-003	0.0000	6.9500e-003	1.0500e-003	0.0000	1.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4500e-003	0.0457	0.0324	5.0000e-005		2.3000e-003	2.3000e-003		2.1200e-003	2.1200e-003	0.0000	4.8270	4.8270	1.5600e-003	0.0000	4.8660
Total	4.4500e-003	0.0457	0.0324	5.0000e-005	6.9500e-003	2.3000e-003	9.2500e-003	1.0500e-003	2.1200e-003	3.1700e-003	0.0000	4.8270	4.8270	1.5600e-003	0.0000	4.8660

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	9.2900e-003	1.9000e-003	3.0000e-005	5.4000e-004	3.0000e-005	5.7000e-004	1.5000e-004	3.0000e-005	1.8000e-004	0.0000	2.4407	2.4407	1.1000e-004	0.0000	2.4435
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.4000e-004	2.5000e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6802	0.6802	2.0000e-005	0.0000	0.6806
Total	6.0000e-004	9.5300e-003	4.4000e-003	4.0000e-005	1.3300e-003	4.0000e-005	1.3700e-003	3.6000e-004	3.0000e-005	4.0000e-004	0.0000	3.1208	3.1208	1.3000e-004	0.0000	3.1240

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

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

Fugitive Dust					8.1900e-003	0.0000	8.1900e-003	4.2100e-003	0.0000	4.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2100e-003	0.0247	0.0103	2.0000e-005		1.1100e-003	1.1100e-003		1.0200e-003	1.0200e-003	0.0000	2.0081	2.0081	6.5000e-004	0.0000	2.0243
Total	2.2100e-003	0.0247	0.0103	2.0000e-005	8.1900e-003	1.1100e-003	9.3000e-003	4.2100e-003	1.0200e-003	5.2300e-003	0.0000	2.0081	2.0081	6.5000e-004	0.0000	2.0243

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1360	0.1360	0.0000	0.0000	0.1361
Total	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1360	0.1360	0.0000	0.0000	0.1361

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					8.1900e-003	0.0000	8.1900e-003	4.2100e-003	0.0000	4.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2100e-003	0.0247	0.0103	2.0000e-005		1.1100e-003	1.1100e-003		1.0200e-003	1.0200e-003	0.0000	2.0081	2.0081	6.5000e-004	0.0000	2.0243
Total	2.2100e-003	0.0247	0.0103	2.0000e-005	8.1900e-003	1.1100e-003	9.3000e-003	4.2100e-003	1.0200e-003	5.2300e-003	0.0000	2.0081	2.0081	6.5000e-004	0.0000	2.0243

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1360	0.1360	0.0000	0.0000	0.1361
Total	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1360	0.1360	0.0000	0.0000	0.1361

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7000e-004	0.0000	3.7000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0100e-003	0.0398	0.0496	7.0000e-005		2.1600e-003	2.1600e-003		1.9900e-003	1.9900e-003	0.0000	6.5550	6.5550	2.1200e-003	0.0000	6.6080
Total	4.0100e-003	0.0398	0.0496	7.0000e-005	3.7000e-004	2.1600e-003	2.5300e-003	6.0000e-005	1.9900e-003	2.0500e-003	0.0000	6.5550	6.5550	2.1200e-003	0.0000	6.6080

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	3.3700e-003	0.1178	0.0241	3.2000e-004	6.8800e-003	3.8000e-004	7.2600e-003	1.8900e-003	3.7000e-004	2.2600e-003	0.0000	30.9659	30.9659	1.4200e-003	0.0000	31.0014
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.8000e-004	1.8800e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5101	0.5101	1.0000e-005	0.0000	0.5104
Total	3.6200e-003	0.1180	0.0260	3.3000e-004	7.4700e-003	3.8000e-004	7.8600e-003	2.0500e-003	3.7000e-004	2.4200e-003	0.0000	31.4761	31.4761	1.4300e-003	0.0000	31.5118

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7000e-004	0.0000	3.7000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0100e-003	0.0398	0.0496	7.0000e-005		2.1600e-003	2.1600e-003		1.9900e-003	1.9900e-003	0.0000	6.5550	6.5550	2.1200e-003	0.0000	6.6080
Total	4.0100e-003	0.0398	0.0496	7.0000e-005	3.7000e-004	2.1600e-003	2.5300e-003	6.0000e-005	1.9900e-003	2.0500e-003	0.0000	6.5550	6.5550	2.1200e-003	0.0000	6.6080

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	3.3700e-003	0.1178	0.0241	3.2000e-004	6.8800e-003	3.8000e-004	7.2600e-003	1.8900e-003	3.7000e-004	2.2600e-003	0.0000	30.9659	30.9659	1.4200e-003	0.0000	31.0014

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.8000e-004	1.8800e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5101	0.5101	1.0000e-005	0.0000	0.5104
Total	3.6200e-003	0.1180	0.0260	3.3000e-004	7.4700e-003	3.8000e-004	7.8600e-003	2.0500e-003	3.7000e-004	2.4200e-003	0.0000	31.4761	31.4761	1.4300e-003	0.0000	31.5118

3.5 Trenching - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0111	0.1333	0.0656	2.2000e-004		5.0500e-003	5.0500e-003		4.6400e-003	4.6400e-003	0.0000	19.2611	19.2611	6.2300e-003	0.0000	19.4168
Total	0.0111	0.1333	0.0656	2.2000e-004		5.0500e-003	5.0500e-003		4.6400e-003	4.6400e-003	0.0000	19.2611	19.2611	6.2300e-003	0.0000	19.4168

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	4.7000e-004	3.3000e-004	3.5000e-003	1.0000e-005	1.1100e-003	1.0000e-005	1.1200e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9522	0.9522	2.0000e-005	0.0000	0.9528
Total	4.7000e-004	3.3000e-004	3.5000e-003	1.0000e-005	1.1100e-003	1.0000e-005	1.1200e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9522	0.9522	2.0000e-005	0.0000	0.9528

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	4.2500e-003	0.0524	0.0339	2.2000e-004		1.7200e-003	1.7200e-003		1.5800e-003	1.5800e-003	0.0000	11.6598	11.6598	3.7700e-003	0.0000	11.7541
Total	4.2500e-003	0.0524	0.0339	2.2000e-004		1.7200e-003	1.7200e-003		1.5800e-003	1.5800e-003	0.0000	11.6598	11.6598	3.7700e-003	0.0000	11.7541

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	4.7000e-004	3.3000e-004	3.5000e-003	1.0000e-005	1.1100e-003	1.0000e-005	1.1200e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9522	0.9522	2.0000e-005	0.0000	0.9528
Total	4.7000e-004	3.3000e-004	3.5000e-003	1.0000e-005	1.1100e-003	1.0000e-005	1.1200e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9522	0.9522	2.0000e-005	0.0000	0.9528

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0179	0.1975	0.0961	2.2000e-004		8.9800e-003	8.9800e-003		8.3100e-003	8.3100e-003	0.0000	19.4349	19.4349	5.8400e-003	0.0000	19.5808
Total	0.0179	0.1975	0.0961	2.2000e-004		8.9800e-003	8.9800e-003		8.3100e-003	8.3100e-003	0.0000	19.4349	19.4349	5.8400e-003	0.0000	19.5808

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	4.8100e-003	0.1681	0.0344	4.6000e-004	0.0355	5.5000e-004	0.0360	9.0000e-003	5.2000e-004	9.5200e-003	0.0000	44.1935	44.1935	2.0200e-003	0.0000	44.2440
Vendor	8.0400e-003	0.2309	0.0615	5.5000e-004	0.0133	1.1400e-003	0.0145	3.8600e-003	1.0900e-003	4.9500e-003	0.0000	53.0206	53.0206	2.4300e-003	0.0000	53.0814
Worker	0.0345	0.0248	0.2596	7.8000e-004	0.0823	5.3000e-004	0.0828	0.0219	4.9000e-004	0.0224	0.0000	70.5587	70.5587	1.7300e-003	0.0000	70.6020
Total	0.0473	0.4238	0.3556	1.7900e-003	0.1311	2.2200e-003	0.1333	0.0347	2.1000e-003	0.0368	0.0000	167.7728	167.7728	6.1800e-003	0.0000	167.9274

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.9800e-003	0.0319	0.0312	2.2000e-004		2.1500e-003	2.1500e-003		2.0300e-003	2.0300e-003	0.0000	3.8660	3.8660	8.0000e-004	0.0000	3.8860

Total	3.9800e-003	0.0319	0.0312	2.2000e-004		2.1500e-003	2.1500e-003		2.0300e-003	2.0300e-003	0.0000	3.8660	3.8660	8.0000e-004	0.0000	3.8860
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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	4.8100e-003	0.1681	0.0344	4.6000e-004	0.0355	5.5000e-004	0.0360	9.0000e-003	5.2000e-004	9.5200e-003	0.0000	44.1935	44.1935	2.0200e-003	0.0000	44.2440
Vendor	8.0400e-003	0.2309	0.0615	5.5000e-004	0.0133	1.1400e-003	0.0145	3.8600e-003	1.0900e-003	4.9500e-003	0.0000	53.0206	53.0206	2.4300e-003	0.0000	53.0814
Worker	0.0345	0.0248	0.2596	7.8000e-004	0.0823	5.3000e-004	0.0828	0.0219	4.9000e-004	0.0224	0.0000	70.5587	70.5587	1.7300e-003	0.0000	70.6020
Total	0.0473	0.4238	0.3556	1.7900e-003	0.1311	2.2200e-003	0.1333	0.0347	2.1000e-003	0.0368	0.0000	167.7728	167.7728	6.1800e-003	0.0000	167.9274

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	0.0544	0.5961	0.3069	7.4000e-004		0.0264	0.0264		0.0245	0.0245	0.0000	65.0274	65.0274	0.0195	0.0000	65.5144
Total	0.0544	0.5961	0.3069	7.4000e-004		0.0264	0.0264		0.0245	0.0245	0.0000	65.0274	65.0274	0.0195	0.0000	65.5144

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	0.0152	0.5185	0.1130	1.5100e-003	0.0413	1.6200e-003	0.0429	0.0111	1.5500e-003	0.0127	0.0000	146.0023	146.0023	6.6200e-003	0.0000	146.1680
Vendor	0.0221	0.6973	0.1856	1.8300e-003	0.0446	1.5500e-003	0.0462	0.0129	1.4800e-003	0.0144	0.0000	175.7773	175.7773	7.6600e-003	0.0000	175.9689
Worker	0.1069	0.0740	0.7941	2.5200e-003	0.2753	1.7300e-003	0.2771	0.0732	1.6000e-003	0.0748	0.0000	227.9054	227.9054	5.1800e-003	0.0000	228.0349
Total	0.1443	1.2899	1.0927	5.8600e-003	0.3612	4.9000e-003	0.3661	0.0972	4.6300e-003	0.1019	0.0000	549.6850	549.6850	0.0195	0.0000	550.1718

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	0.0119	0.0978	0.1031	7.4000e-004		6.2000e-003	6.2000e-003		5.8700e-003	5.8700e-003	0.0000	12.9361	12.9361	2.6300e-003	0.0000	13.0019
Total	0.0119	0.0978	0.1031	7.4000e-004		6.2000e-003	6.2000e-003		5.8700e-003	5.8700e-003	0.0000	12.9361	12.9361	2.6300e-003	0.0000	13.0019

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
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Category	tons/yr										MT/yr					
	Hauling	0.0152	0.5185	0.1130	1.5100e-003	0.0413	1.6200e-003	0.0429	0.0111	1.5500e-003	0.0127	0.0000	146.0023	146.0023	6.6200e-003	0.0000
Vendor	0.0221	0.6973	0.1856	1.8300e-003	0.0446	1.5500e-003	0.0462	0.0129	1.4800e-003	0.0144	0.0000	175.7773	175.7773	7.6600e-003	0.0000	175.9689
Worker	0.1069	0.0740	0.7941	2.5200e-003	0.2753	1.7300e-003	0.2771	0.0732	1.6000e-003	0.0748	0.0000	227.9054	227.9054	5.1800e-003	0.0000	228.0349
Total	0.1443	1.2899	1.0927	5.8600e-003	0.3612	4.9000e-003	0.3661	0.0972	4.6300e-003	0.1019	0.0000	549.6850	549.6850	0.0195	0.0000	550.1718

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	2.0700e-003	0.0219	0.0125	3.0000e-005		9.7000e-004	9.7000e-004		9.0000e-004	9.0000e-004	0.0000	2.7410	2.7410	8.2000e-004	0.0000	2.7615
Total	2.0700e-003	0.0219	0.0125	3.0000e-005		9.7000e-004	9.7000e-004		9.0000e-004	9.0000e-004	0.0000	2.7410	2.7410	8.2000e-004	0.0000	2.7615

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-004	0.0201	4.6800e-003	6.0000e-005	0.0334	6.0000e-005	0.0334	8.2300e-003	6.0000e-005	8.2800e-003	0.0000	6.0704	6.0704	2.7000e-004	0.0000	6.0772
Vendor	8.7000e-004	0.0278	7.3700e-003	8.0000e-005	1.8800e-003	6.0000e-005	1.9400e-003	5.4000e-004	5.0000e-005	6.0000e-004	0.0000	7.3374	7.3374	3.1000e-004	0.0000	7.3451

Worker	4.2100e-003	2.8000e-003	0.0308	1.0000e-004	0.0116	7.0000e-005	0.0117	3.0900e-003	7.0000e-005	3.1500e-003	0.0000	9.2563	9.2563	2.0000e-004	0.0000	9.2612
Total	5.6800e-003	0.0507	0.0428	2.4000e-004	0.0468	1.9000e-004	0.0470	0.0119	1.8000e-004	0.0120	0.0000	22.6641	22.6641	7.8000e-004	0.0000	22.6835

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	4.5000e-004	3.7600e-003	4.3100e-003	3.0000e-005		2.2000e-004	2.2000e-004		2.1000e-004	2.1000e-004	0.0000	0.5452	0.5452	1.1000e-004	0.0000	0.5479
Total	4.5000e-004	3.7600e-003	4.3100e-003	3.0000e-005		2.2000e-004	2.2000e-004		2.1000e-004	2.1000e-004	0.0000	0.5452	0.5452	1.1000e-004	0.0000	0.5479

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-004	0.0201	4.6800e-003	6.0000e-005	0.0334	6.0000e-005	0.0334	8.2300e-003	6.0000e-005	8.2800e-003	0.0000	6.0704	6.0704	2.7000e-004	0.0000	6.0772
Vendor	8.7000e-004	0.0278	7.3700e-003	8.0000e-005	1.8800e-003	6.0000e-005	1.9400e-003	5.4000e-004	5.0000e-005	6.0000e-004	0.0000	7.3374	7.3374	3.1000e-004	0.0000	7.3451
Worker	4.2100e-003	2.8000e-003	0.0308	1.0000e-004	0.0116	7.0000e-005	0.0117	3.0900e-003	7.0000e-005	3.1500e-003	0.0000	9.2563	9.2563	2.0000e-004	0.0000	9.2612
Total	5.6800e-003	0.0507	0.0428	2.4000e-004	0.0468	1.9000e-004	0.0470	0.0119	1.8000e-004	0.0120	0.0000	22.6641	22.6641	7.8000e-004	0.0000	22.6835

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9755					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.0919	0.1314	2.1000e-004		4.2100e-003	4.2100e-003		4.1300e-003	4.1300e-003	0.0000	17.9167	17.9167	3.5300e-003	0.0000	18.0050
Total	1.9860	0.0919	0.1314	2.1000e-004		4.2100e-003	4.2100e-003		4.1300e-003	4.1300e-003	0.0000	17.9167	17.9167	3.5300e-003	0.0000	18.0050

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	8.1400e-003	0.0873	2.8000e-004	0.0303	1.9000e-004	0.0305	8.0500e-003	1.8000e-004	8.2200e-003	0.0000	25.0536	25.0536	5.7000e-004	0.0000	25.0679
Total	0.0118	8.1400e-003	0.0873	2.8000e-004	0.0303	1.9000e-004	0.0305	8.0500e-003	1.8000e-004	8.2200e-003	0.0000	25.0536	25.0536	5.7000e-004	0.0000	25.0679

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
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Category	tons/yr									MT/yr							
Archit. Coating	1.9755					0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Off-Road	0.0105	0.0919	0.1314	2.1000e-004		4.2100e-003	4.2100e-003			4.1300e-003	4.1300e-003	0.0000	17.9167	17.9167	3.5300e-003	0.0000	18.0050
Total	1.9860	0.0919	0.1314	2.1000e-004		4.2100e-003	4.2100e-003			4.1300e-003	4.1300e-003	0.0000	17.9167	17.9167	3.5300e-003	0.0000	18.0050

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	8.1400e-003	0.0873	2.8000e-004	0.0303	1.9000e-004	0.0305	8.0500e-003	1.8000e-004	8.2200e-003	0.0000	25.0536	25.0536	5.7000e-004	0.0000	25.0679
Total	0.0118	8.1400e-003	0.0873	2.8000e-004	0.0303	1.9000e-004	0.0305	8.0500e-003	1.8000e-004	8.2200e-003	0.0000	25.0536	25.0536	5.7000e-004	0.0000	25.0679

3.7 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	1.7971						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Off-Road	8.9700e-003	0.0776	0.1193	1.9000e-004		3.3600e-003	3.3600e-003			3.2900e-003	3.2900e-003	0.0000	16.3000	16.3000	3.1800e-003	0.0000	16.3796

Total	1.8061	0.0776	0.1193	1.9000e-004		3.3600e-003	3.3600e-003		3.2900e-003	3.2900e-003	0.0000	16.3000	16.3000	3.1800e-003	0.0000	16.3796
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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	9.9800e-003	6.6400e-003	0.0730	2.4000e-004	0.0275	1.7000e-004	0.0277	7.3200e-003	1.6000e-004	7.4800e-003	0.0000	21.9640	21.9640	4.6000e-004	0.0000	21.9756
Total	9.9800e-003	6.6400e-003	0.0730	2.4000e-004	0.0275	1.7000e-004	0.0277	7.3200e-003	1.6000e-004	7.4800e-003	0.0000	21.9640	21.9640	4.6000e-004	0.0000	21.9756

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	1.7971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9700e-003	0.0776	0.1193	1.9000e-004		3.3600e-003	3.3600e-003		3.2900e-003	3.2900e-003	0.0000	16.3000	16.3000	3.1800e-003	0.0000	16.3796
Total	1.8061	0.0776	0.1193	1.9000e-004		3.3600e-003	3.3600e-003		3.2900e-003	3.2900e-003	0.0000	16.3000	16.3000	3.1800e-003	0.0000	16.3796

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	9.9800e-003	6.6400e-003	0.0730	2.4000e-004	0.0275	1.7000e-004	0.0277	7.3200e-003	1.6000e-004	7.4800e-003	0.0000	21.9640	21.9640	4.6000e-004	0.0000	21.9756
Total	9.9800e-003	6.6400e-003	0.0730	2.4000e-004	0.0275	1.7000e-004	0.0277	7.3200e-003	1.6000e-004	7.4800e-003	0.0000	21.9640	21.9640	4.6000e-004	0.0000	21.9756

3.8 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	1.7000e-004	1.7300e-003	2.2000e-003	0.0000		9.0000e-005	9.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.2942	0.2942	1.0000e-004	0.0000	0.2966
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.7000e-004	1.7300e-003	2.2000e-003	0.0000		9.0000e-005	9.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.2942	0.2942	1.0000e-004	0.0000	0.2966

Unmitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.3000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1582	0.1582	0.0000	0.0000	0.1583
Total	7.0000e-005	5.0000e-005	5.3000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1582	0.1582	0.0000	0.0000	0.1583

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	1.7000e-004	1.7300e-003	2.2000e-003	0.0000		9.0000e-005	9.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.2942	0.2942	1.0000e-004	0.0000	0.2966
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.7000e-004	1.7300e-003	2.2000e-003	0.0000		9.0000e-005	9.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.2942	0.2942	1.0000e-004	0.0000	0.2966

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.3000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1582	0.1582	0.0000	0.0000	0.1583

Total	7.0000e-005	5.0000e-005	5.3000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1582	0.1582	0.0000	0.0000	0.1583
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4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Mitigated	0.2328	0.8698	2.6850	9.5600e-003	0.9107	7.4600e-003	0.9182	0.2438	6.9500e-003	0.2507	0.0000	876.0473	876.0473	0.0282	0.0000	876.7513
Unmitigated	0.2328	0.8698	2.6850	9.5600e-003	0.9107	7.4600e-003	0.9182	0.2438	6.9500e-003	0.2507	0.0000	876.0473	876.0473	0.0282	0.0000	876.7513

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	956.58	1,111.54	831.42	2,219,156	2,219,156
Enclosed Parking with Elevator	0.00	0.00	0.00		
Strip Mall	163.08	154.73	75.16	229,965	229,965
Total	1,119.66	1,266.27	906.58	2,449,121	2,449,121

4.3 Trip Type Information

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	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
Enclosed 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
Strip Mall	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

	ROG	NOx	CO	SO2	Fugitive 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	263.6394	263.6394	0.0264	5.4500e-003	265.9239
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	263.6394	263.6394	0.0264	5.4500e-003	265.9239
NaturalGas Mitigated	0.0140	0.1197	0.0514	7.6000e-004		9.6700e-003	9.6700e-003		9.6700e-003	9.6700e-003	0.0000	138.5236	138.5236	2.6600e-003	2.5400e-003	139.3468
NaturalGas Unmitigated	0.0140	0.1197	0.0514	7.6000e-004		9.6700e-003	9.6700e-003		9.6700e-003	9.6700e-003	0.0000	138.5236	138.5236	2.6600e-003	2.5400e-003	139.3468

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
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Land Use	kBTU/yr	tons/yr									MT/yr					
Apartments High Rise	2.57456e+006	0.0139	0.1186	0.0505	7.6000e-004	9.5900e-003	9.5900e-003	9.5900e-003	9.5900e-003	9.5900e-003	0.0000	137.3881	137.3881	2.6300e-003	2.5200e-003	138.2046
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	21277.9	1.1000e-004	1.0400e-003	8.8000e-004	1.0000e-005	8.0000e-005	8.0000e-005	8.0000e-005	8.0000e-005	8.0000e-005	0.0000	1.1355	1.1355	2.0000e-005	2.0000e-005	1.1422
Total		0.0140	0.1197	0.0514	7.7000e-004	9.6700e-003	9.6700e-003	9.6700e-003	9.6700e-003	9.6700e-003	0.0000	138.5236	138.5236	2.6500e-003	2.5400e-003	139.3468

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr									MT/yr						
Apartments High Rise	2.57456e+006	0.0139	0.1186	0.0505	7.6000e-004	9.5900e-003	9.5900e-003	9.5900e-003	9.5900e-003	9.5900e-003	9.5900e-003	0.0000	137.3881	137.3881	2.6300e-003	2.5200e-003	138.2046
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	21277.9	1.1000e-004	1.0400e-003	8.8000e-004	1.0000e-005	8.0000e-005	8.0000e-005	8.0000e-005	8.0000e-005	8.0000e-005	8.0000e-005	0.0000	1.1355	1.1355	2.0000e-005	2.0000e-005	1.1422
Total		0.0140	0.1197	0.0514	7.7000e-004	9.6700e-003	9.6700e-003	9.6700e-003	9.6700e-003	9.6700e-003	9.6700e-003	0.0000	138.5236	138.5236	2.6500e-003	2.5400e-003	139.3468

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.23025e+006	161.8291	0.0162	3.3500e-003	163.2314
Enclosed Parking with Elevator	678002	89.1856	8.9200e-003	1.8500e-003	89.9584

Strip Mall	95974.8	12.6247	1.2600e-003	2.6000e-004	12.7341
Total		263.6394	0.0264	5.4600e-003	265.9239

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.23025e+006	161.8291	0.0162	3.3500e-003	163.2314
Enclosed Parking with Elevator	678002	89.1856	8.9200e-003	1.8500e-003	89.9584
Strip Mall	95974.8	12.6247	1.2600e-003	2.6000e-004	12.7341
Total		263.6394	0.0264	5.4600e-003	265.9239

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	2.5416	0.0358	2.2203	1.8000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	15.5243	15.5243	3.7200e-003	2.2000e-004	15.6823
Unmitigated	2.5416	0.0358	2.2203	1.8000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	15.5243	15.5243	3.7200e-003	2.2000e-004	15.6823

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	0.3773					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.0963					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2000e-003	0.0103	4.3700e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	11.9047	11.9047	2.3000e-004	2.2000e-004	11.9754
Landscaping	0.0669	0.0255	2.2159	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6197	3.6197	3.4900e-003	0.0000	3.7069
Total	2.5416	0.0358	2.2203	1.9000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	15.5243	15.5243	3.7200e-003	2.2000e-004	15.6823

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	0.3773					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.0963					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2000e-003	0.0103	4.3700e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	11.9047	11.9047	2.3000e-004	2.2000e-004	11.9754
Landscaping	0.0669	0.0255	2.2159	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6197	3.6197	3.4900e-003	0.0000	3.7069
Total	2.5416	0.0358	2.2203	1.9000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	15.5243	15.5243	3.7200e-003	2.2000e-004	15.6823

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.2210	0.0265	0.0159	32.6109
Unmitigated	27.2210	0.0265	0.0159	32.6109

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	19.4159 / 12.2405	26.3245	0.0256	0.0153	31.5359
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.665171 / 0.407686	0.8965	8.8000e-004	5.3000e-004	1.0750
Total		27.2210	0.0265	0.0159	32.6109

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	19.4159 / 12.2405	26.3245	0.0256	0.0153	31.5359
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.665171 / 0.407686	0.8965	8.8000e-004	5.3000e-004	1.0750
Total		27.2210	0.0265	0.0159	32.6109

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	29.7402	1.7576	0.0000	73.6801
Unmitigated	29.7402	1.7576	0.0000	73.6801

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	137.08	27.8260	1.6445	0.0000	68.9377
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	9.43	1.9142	0.1131	0.0000	4.7424
Total		29.7402	1.7576	0.0000	73.6801

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	137.08	27.8260	1.6445	0.0000	68.9377
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	9.43	1.9142	0.1131	0.0000	4.7424
Total		29.7402	1.7576	0.0000	73.6801

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

17-051 4th and St. John (Rev 2019) AQ - Santa Clara County, Annual

**17-051 4th and St. John (Rev 2019) AQ - Construction
Santa Clara County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	287.00	Space	0.00	115,700.00	0
Apartments High Rise	298.00	Dwelling Unit	1.00	525,849.00	852
Strip Mall	8.98	1000sqft	0.00	8,978.00	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/MW hr)	290	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 290 rate

Land Use - Applicant provided land uses, 1 acre site, Student housing: 298 dwelling units (525,849-sqft for both housing and other), retail (8,978-sqft) & parking garage 287 spaces (115,700-sqft)

Construction Phase - Applicant construction schedule using the total workdays provided in the sheet

Off-road Equipment - Project applicant construction equipment. Other equipment --> man lift

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Trips and VMT - 2,600 total cement round-trips during building construction, TAC trip length of 1 mile

Demolition - 650 tons of pavement demolished

Grading - 6500-cy of soil hauled during grading

Vehicle Trips - Residential w/reduction: weekday 3.21, Sat 3.73, Sun 2.79. Strip mall w/reduction: weekday 18.16, Sat 17.23, Sun 8.37

Woodstoves - No wood all gas

Energy Use -

Water And Wastewater - 100% aerobic

Construction Off-road Equipment Mitigation - Electrical cranes, BMPs, Tier 4 interim Mitigation

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	5.00	275.00
tblConstructionPhase	NumDays	100.00	350.00
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	1.00	5.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	44.70	95.36
tblFireplaces	NumberWood	50.66	0.00
tblGrading	MaterialExported	0.00	6,500.00
tblLandUse	LandUseSquareFeet	114,800.00	115,700.00
tblLandUse	LandUseSquareFeet	298,000.00	525,849.00
tblLandUse	LandUseSquareFeet	8,980.00	8,978.00
tblLandUse	LotAcreage	2.58	0.00
tblLandUse	LotAcreage	4.81	1.00
tblLandUse	LotAcreage	0.21	0.00

tblOffRoadEquipment	HorsePower	172.00	20.00
tblOffRoadEquipment	LoadFactor	0.42	0.03
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	2.90
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	6.30
tblOffRoadEquipment	UsageHours	6.00	3.10
tblOffRoadEquipment	UsageHours	8.00	0.50
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.80
tblOffRoadEquipment	UsageHours	7.00	0.80
tblOffRoadEquipment	UsageHours	8.00	1.60
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	1.60
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00

tblOffRoadEquipment	UsageHours	8.00	0.50
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripNumber	813.00	812.00
tblTripsAndVMT	HaulingTripNumber	0.00	5,200.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblVehicleTrips	ST_TR	4.98	3.73
tblVehicleTrips	ST_TR	42.04	17.23
tblVehicleTrips	SU_TR	3.65	2.79
tblVehicleTrips	SU_TR	20.43	8.37
tblVehicleTrips	WD_TR	4.20	3.21

tblVehicleTrips	WD_TR	44.32	18.16
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
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0576	0.6872	0.3791	1.0000e-003	0.0275	0.0201	0.0476	8.5500e-003	0.0185	0.0271	0.0000	90.2885	90.2885	0.0198	0.0000	90.7827
2021	2.0948	1.3292	0.8140	2.1100e-003	0.0370	0.0316	0.0686	0.0101	0.0295	0.0395	0.0000	192.1371	192.1371	0.0318	0.0000	192.9313
2022	1.8136	0.1287	0.1668	3.0000e-004	5.6200e-003	4.4900e-003	0.0101	1.4800e-003	4.3500e-003	5.8200e-003	0.0000	26.4313	26.4313	4.5500e-003	0.0000	26.5451
Maximum	2.0948	1.3292	0.8140	2.1100e-003	0.0370	0.0316	0.0686	0.0101	0.0295	0.0395	0.0000	192.1371	192.1371	0.0318	0.0000	192.9313

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					
2020	0.0235	0.3626	0.3355	1.0000e-003	0.0190	1.0700e-003	0.0201	4.4300e-003	1.0500e-003	5.4800e-003	0.0000	67.0682	67.0682	0.0123	0.0000	67.3745
2021	2.0373	0.8006	0.6188	2.1100e-003	0.0370	3.9200e-003	0.0409	0.0101	3.8700e-003	0.0139	0.0000	140.0457	140.0457	0.0149	0.0000	140.4187
2022	1.8065	0.1162	0.1662	3.0000e-004	5.6200e-003	2.3100e-003	7.9300e-003	1.4800e-003	2.3000e-003	3.7800e-003	0.0000	24.2355	24.2355	3.8400e-003	0.0000	24.3315
Maximum	2.0373	0.8006	0.6188	2.1100e-003	0.0370	3.9200e-003	0.0409	0.0101	3.8700e-003	0.0139	0.0000	140.0457	140.0457	0.0149	0.0000	140.4187

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	2.49	40.36	17.60	0.00	12.16	86.99	45.41	20.51	86.20	67.97	0.00	25.09	25.09	44.70	0.00	25.18

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-4-2020	8-3-2020	0.2622	0.1317
2	8-4-2020	11-3-2020	0.2304	0.1176
3	11-4-2020	2-3-2021	0.3526	0.1953
4	2-4-2021	5-3-2021	0.3263	0.1848
5	5-4-2021	8-3-2021	0.8570	0.7095
6	8-4-2021	11-3-2021	1.2895	1.1409
7	11-4-2021	2-3-2022	1.2181	1.1015
8	2-4-2022	5-3-2022	0.9185	0.9190
9	5-4-2022	8-3-2022	0.6386	0.6392
		Highest	1.2895	1.1409

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	5/4/2020	6/5/2020	5	25	

2	Site Preparation	Site Preparation	6/8/2020	6/12/2020	5	5
3	Grading	Grading	6/15/2020	7/24/2020	5	30
4	Trenching	Trenching	6/28/2020	8/14/2020	5	35
5	Building Construction	Building Construction	9/15/2020	1/17/2022	5	350
6	Architectural Coating	Architectural Coating	6/15/2021	7/4/2022	5	275
7	Paving	Paving	4/20/2022	5/3/2022	5	10

Acres of Grading (Site Preparation Phase): 1.25

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,064,844; Residential Outdoor: 354,948; Non-Residential Indoor: 13,467; Non-Residential Outdoor: 4,489; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Excavators	1	3.20	158	0.38
Demolition	Rubber Tired Dozers	1	1.60	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	1.60	97	0.37
Site Preparation	Graders	1	4.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	4.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Grading	Excavators	1	5.30	158	0.38
Grading	Graders	0	0.00	187	0.41
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Trenching	Bore/Drill Rigs	1	6.00	221	0.50
Trenching	Cranes	1	6.90	231	0.29
Trenching	Tractors/Loaders/Backhoes	1	1.30	97	0.37
Building Construction	Cranes	1	6.30	231	0.29
Building Construction	Forklifts	1	3.10	89	0.20

Building Construction	Generator Sets	1	0.50	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Building Construction	Welders	1	0.50	46	0.45
Architectural Coating	Aerial Lifts	2	3.30	63	0.31
Architectural Coating	Air Compressors	1	2.90	78	0.48
Architectural Coating	Other Construction Equipment	1	7.00	20	0.03
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	0	0.00	130	0.42
Paving	Paving Equipment	1	0.80	132	0.36
Paving	Rollers	1	0.80	80	0.38
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	8.00	0.00	64.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	2	5.00	0.00	812.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Trenching	3	8.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	266.00	52.00	5,200.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	4	53.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Paving	2	5.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

- Use Alternative Fuel for Construction Equipment
- Use Cleaner Engines for Construction Equipment
- Use Soil Stabilizer
- Replace Ground Cover
- Water Exposed Area
- Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.9500e-003	0.0000	6.9500e-003	1.0500e-003	0.0000	1.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4500e-003	0.0457	0.0324	5.0000e-005		2.3000e-003	2.3000e-003		2.1200e-003	2.1200e-003	0.0000	4.8270	4.8270	1.5600e-003	0.0000	4.8660
Total	4.4500e-003	0.0457	0.0324	5.0000e-005	6.9500e-003	2.3000e-003	9.2500e-003	1.0500e-003	2.1200e-003	3.1700e-003	0.0000	4.8270	4.8270	1.5600e-003	0.0000	4.8660

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	3.3000e-003	5.4000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.4156	0.4156	4.0000e-005	0.0000	0.4167
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	5.0000e-005	6.6000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0813	0.0813	0.0000	0.0000	0.0814
Total	1.8000e-004	3.3500e-003	1.2000e-003	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4969	0.4969	4.0000e-005	0.0000	0.4981

Mitigated Construction On-Site

Off-Road	2.2100e-003	0.0247	0.0103	2.0000e-005		1.1100e-003	1.1100e-003		1.0200e-003	1.0200e-003	0.0000	2.0081	2.0081	6.5000e-004	0.0000	2.0243
Total	2.2100e-003	0.0247	0.0103	2.0000e-005	8.1900e-003	1.1100e-003	9.3000e-003	4.2100e-003	1.0200e-003	5.2300e-003	0.0000	2.0081	2.0081	6.5000e-004	0.0000	2.0243

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	2.0000e-005	1.0000e-005	1.3000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0163	0.0163	0.0000	0.0000	0.0163
Total	2.0000e-005	1.0000e-005	1.3000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0163	0.0163	0.0000	0.0000	0.0163

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.6900e-003	0.0000	3.6900e-003	9.5000e-004	0.0000	9.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-004	6.6800e-003	0.0130	2.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.0081	2.0081	6.5000e-004	0.0000	2.0243
Total	4.0000e-004	6.6800e-003	0.0130	2.0000e-005	3.6900e-003	4.0000e-005	3.7300e-003	9.5000e-004	4.0000e-005	9.9000e-004	0.0000	2.0081	2.0081	6.5000e-004	0.0000	2.0243

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	2.0000e-005	1.0000e-005	1.3000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0163	0.0163	0.0000	0.0000	0.0163
Total	2.0000e-005	1.0000e-005	1.3000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0163	0.0163	0.0000	0.0000	0.0163

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7000e-004	0.0000	3.7000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0100e-003	0.0398	0.0496	7.0000e-005		2.1600e-003	2.1600e-003		1.9900e-003	1.9900e-003	0.0000	6.5550	6.5550	2.1200e-003	0.0000	6.6080
Total	4.0100e-003	0.0398	0.0496	7.0000e-005	3.7000e-004	2.1600e-003	2.5300e-003	6.0000e-005	1.9900e-003	2.0500e-003	0.0000	6.5550	6.5550	2.1200e-003	0.0000	6.6080

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
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Worker	8.0000e-005	4.0000e-005	4.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0610	0.0610	0.0000	0.0000	0.0611
Total	9.6000e-004	0.0419	7.3300e-003	5.0000e-005	4.1000e-004	4.0000e-005	4.5000e-004	1.1000e-004	4.0000e-005	1.6000e-004	0.0000	5.3341	5.3341	5.6000e-004	0.0000	5.3482

3.5 Trenching - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0111	0.1336	0.0657	2.2000e-004		5.0700e-003	5.0700e-003		4.6600e-003	4.6600e-003	0.0000	19.2602	19.2602	6.2300e-003	0.0000	19.4160
Total	0.0111	0.1336	0.0657	2.2000e-004		5.0700e-003	5.0700e-003		4.6600e-003	4.6600e-003	0.0000	19.2602	19.2602	6.2300e-003	0.0000	19.4160

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	7.0000e-005	9.2000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1139	0.1139	0.0000	0.0000	0.1140
Total	1.6000e-004	7.0000e-005	9.2000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1139	0.1139	0.0000	0.0000	0.1140

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	2.2400e-003	0.0369	0.0732	2.2000e-004		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	11.6088	11.6088	3.7500e-003	0.0000	11.7027
Total	2.2400e-003	0.0369	0.0732	2.2000e-004		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	11.6088	11.6088	3.7500e-003	0.0000	11.7027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	7.0000e-005	9.2000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1139	0.1139	0.0000	0.0000	0.1140
Total	1.6000e-004	7.0000e-005	9.2000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1139	0.1139	0.0000	0.0000	0.1140

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr				
	Off-Road	0.0179	0.1975	0.0961	2.2000e-004	8.9800e-003	8.9800e-003	8.3100e-003	8.3100e-003	0.0000	19.4349	19.4349	5.8400e-003	0.0000	19.5808
Total	0.0179	0.1975	0.0961	2.2000e-004	8.9800e-003	8.9800e-003	8.3100e-003	8.3100e-003	0.0000	19.4349	19.4349	5.8400e-003	0.0000	19.5808	

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2600e-003	0.0598	9.7600e-003	8.0000e-005	1.7900e-003	6.0000e-005	1.8400e-003	4.5000e-004	5.0000e-005	5.1000e-004	0.0000	7.5256	7.5256	8.0000e-004	0.0000	7.5456
Vendor	3.8300e-003	0.1356	0.0377	1.7000e-004	1.8700e-003	2.2000e-004	2.0900e-003	5.5000e-004	2.1000e-004	7.6000e-004	0.0000	16.2803	16.2803	1.5900e-003	0.0000	16.3200
Worker	0.0115	5.2600e-003	0.0680	9.0000e-005	7.7100e-003	1.1000e-004	7.8200e-003	2.0600e-003	1.0000e-004	2.1600e-003	0.0000	8.4362	8.4362	3.6000e-004	0.0000	8.4453
Total	0.0166	0.2007	0.1154	3.4000e-004	0.0114	3.9000e-004	0.0118	3.0600e-003	3.6000e-004	3.4300e-003	0.0000	32.2421	32.2421	2.7500e-003	0.0000	32.3109

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	9.2000e-004	0.0199	0.0311	2.2000e-004	1.7000e-004	1.7000e-004	1.7000e-004	1.7000e-004	1.7000e-004	1.7000e-004	0.0000	3.8660	3.8660	8.0000e-004	0.0000	3.8860
Total	9.2000e-004	0.0199	0.0311	2.2000e-004	1.7000e-004	1.7000e-004	1.7000e-004	1.7000e-004	1.7000e-004	1.7000e-004	0.0000	3.8660	3.8660	8.0000e-004	0.0000	3.8860

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2600e-003	0.0598	9.7600e-003	8.0000e-005	1.7900e-003	6.0000e-005	1.8400e-003	4.5000e-004	5.0000e-005	5.1000e-004	0.0000	7.5256	7.5256	8.0000e-004	0.0000	7.5456
Vendor	3.8300e-003	0.1356	0.0377	1.7000e-004	1.8700e-003	2.2000e-004	2.0900e-003	5.5000e-004	2.1000e-004	7.6000e-004	0.0000	16.2803	16.2803	1.5900e-003	0.0000	16.3200
Worker	0.0115	5.2600e-003	0.0680	9.0000e-005	7.7100e-003	1.1000e-004	7.8200e-003	2.0600e-003	1.0000e-004	2.1600e-003	0.0000	8.4362	8.4362	3.6000e-004	0.0000	8.4453
Total	0.0166	0.2007	0.1154	3.4000e-004	0.0114	3.9000e-004	0.0118	3.0600e-003	3.6000e-004	3.4300e-003	0.0000	32.2421	32.2421	2.7500e-003	0.0000	32.3109

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	0.0544	0.5961	0.3069	7.4000e-004		0.0264	0.0264		0.0245	0.0245	0.0000	65.0274	65.0274	0.0195	0.0000	65.5144
Total	0.0544	0.5961	0.3069	7.4000e-004		0.0264	0.0264		0.0245	0.0245	0.0000	65.0274	65.0274	0.0195	0.0000	65.5144

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	3.9500e-003	0.1924	0.0315	2.6000e-004	2.1000e-003	1.7000e-004	2.2700e-003	5.7000e-004	1.6000e-004	7.3000e-004	0.0000	24.9169	24.9169	2.5400e-003	0.0000	24.9805
Vendor	0.0115	0.4314	0.1162	5.6000e-004	6.2700e-003	3.6000e-004	6.6300e-003	1.8300e-003	3.5000e-004	2.1800e-003	0.0000	53.9570	53.9570	5.0100e-003	0.0000	54.0822
Worker	0.0351	0.0155	0.2051	3.0000e-004	0.0258	3.5000e-004	0.0262	6.9000e-003	3.2000e-004	7.2200e-003	0.0000	27.2704	27.2704	1.0700e-003	0.0000	27.2972
Total	0.0505	0.6393	0.3528	1.1200e-003	0.0342	8.8000e-004	0.0351	9.3000e-003	8.3000e-004	0.0101	0.0000	106.1442	106.1442	8.6200e-003	0.0000	106.3598

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0900e-003	0.0667	0.1040	7.4000e-004		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004	0.0000	12.9361	12.9361	2.6300e-003	0.0000	13.0019
Total	3.0900e-003	0.0667	0.1040	7.4000e-004		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004	0.0000	12.9361	12.9361	2.6300e-003	0.0000	13.0019

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	3.9500e-003	0.1924	0.0315	2.6000e-004	2.1000e-003	1.7000e-004	2.2700e-003	5.7000e-004	1.6000e-004	7.3000e-004	0.0000	24.9169	24.9169	2.5400e-003	0.0000	24.9805
Vendor	0.0115	0.4314	0.1162	5.6000e-004	6.2700e-003	3.6000e-004	6.6300e-003	1.8300e-003	3.5000e-004	2.1800e-003	0.0000	53.9570	53.9570	5.0100e-003	0.0000	54.0822
Worker	0.0351	0.0155	0.2051	3.0000e-004	0.0258	3.5000e-004	0.0262	6.9000e-003	3.2000e-004	7.2200e-003	0.0000	27.2704	27.2704	1.0700e-003	0.0000	27.2972
Total	0.0505	0.6393	0.3528	1.1200e-003	0.0342	8.8000e-004	0.0351	9.3000e-003	8.3000e-004	0.0101	0.0000	106.1442	106.1442	8.6200e-003	0.0000	106.3598

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	2.0700e-003	0.0219	0.0125	3.0000e-005		9.7000e-004	9.7000e-004		9.0000e-004	9.0000e-004	0.0000	2.7410	2.7410	8.2000e-004	0.0000	2.7615
Total	2.0700e-003	0.0219	0.0125	3.0000e-005		9.7000e-004	9.7000e-004		9.0000e-004	9.0000e-004	0.0000	2.7410	2.7410	8.2000e-004	0.0000	2.7615

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	7.7900e-003	1.2900e-003	1.0000e-005	1.6700e-003	1.0000e-005	1.6800e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.0393	1.0393	1.0000e-004	0.0000	1.0418
Vendor	4.5000e-004	0.0176	4.5700e-003	2.0000e-005	2.6000e-004	1.0000e-005	2.8000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	2.2535	2.2535	2.0000e-004	0.0000	2.2584
Worker	1.3600e-003	5.8000e-004	7.8300e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.1083	1.1083	4.0000e-005	0.0000	1.1093

Total	1.9700e-003	0.0260	0.0137	4.0000e-005	3.0200e-003	3.0000e-005	3.0600e-003	7.8000e-004	3.0000e-005	8.1000e-004	0.0000	4.4011	4.4011	3.4000e-004	0.0000	4.4096
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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	1.3000e-004	2.8100e-003	4.3800e-003	3.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.5452	0.5452	1.1000e-004	0.0000	0.5479
Total	1.3000e-004	2.8100e-003	4.3800e-003	3.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.5452	0.5452	1.1000e-004	0.0000	0.5479

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	7.7900e-003	1.2900e-003	1.0000e-005	1.6700e-003	1.0000e-005	1.6800e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.0393	1.0393	1.0000e-004	0.0000	1.0418
Vendor	4.5000e-004	0.0176	4.5700e-003	2.0000e-005	2.6000e-004	1.0000e-005	2.8000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	2.2535	2.2535	2.0000e-004	0.0000	2.2584
Worker	1.3600e-003	5.8000e-004	7.8300e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.1083	1.1083	4.0000e-005	0.0000	1.1093
Total	1.9700e-003	0.0260	0.0137	4.0000e-005	3.0200e-003	3.0000e-005	3.0600e-003	7.8000e-004	3.0000e-005	8.1000e-004	0.0000	4.4011	4.4011	3.4000e-004	0.0000	4.4096

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9755					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.0921	0.1318	2.1000e-004		4.2100e-003	4.2100e-003		4.1300e-003	4.1300e-003	0.0000	17.9676	17.9676	3.5500e-003	0.0000	18.0563
Total	1.9860	0.0921	0.1318	2.1000e-004		4.2100e-003	4.2100e-003		4.1300e-003	4.1300e-003	0.0000	17.9676	17.9676	3.5500e-003	0.0000	18.0563

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	3.8600e-003	1.7100e-003	0.0226	3.0000e-005	2.8400e-003	4.0000e-005	2.8700e-003	7.6000e-004	3.0000e-005	7.9000e-004	0.0000	2.9978	2.9978	1.2000e-004	0.0000	3.0008
Total	3.8600e-003	1.7100e-003	0.0226	3.0000e-005	2.8400e-003	4.0000e-005	2.8700e-003	7.6000e-004	3.0000e-005	7.9000e-004	0.0000	2.9978	2.9978	1.2000e-004	0.0000	3.0008

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	1.9755					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3500e-003	0.0929	0.1395	2.1000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	17.9676	17.9676	3.5500e-003	0.0000	18.0562
Total	1.9798	0.0929	0.1395	2.1000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	17.9676	17.9676	3.5500e-003	0.0000	18.0562

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	3.8600e-003	1.7100e-003	0.0226	3.0000e-005	2.8400e-003	4.0000e-005	2.8700e-003	7.6000e-004	3.0000e-005	7.9000e-004	0.0000	2.9978	2.9978	1.2000e-004	0.0000	3.0008
Total	3.8600e-003	1.7100e-003	0.0226	3.0000e-005	2.8400e-003	4.0000e-005	2.8700e-003	7.6000e-004	3.0000e-005	7.9000e-004	0.0000	2.9978	2.9978	1.2000e-004	0.0000	3.0008

3.7 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	1.7971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9800e-003	0.0777	0.1197	1.9000e-004		3.3600e-003	3.3600e-003		3.3000e-003	3.3000e-003	0.0000	16.3463	16.3463	3.2000e-003	0.0000	16.4263
Total	1.8061	0.0777	0.1197	1.9000e-004		3.3600e-003	3.3600e-003		3.3000e-003	3.3000e-003	0.0000	16.3463	16.3463	3.2000e-003	0.0000	16.4263

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	3.2200e-003	1.3700e-003	0.0186	3.0000e-005	2.5800e-003	3.0000e-005	2.6100e-003	6.9000e-004	3.0000e-005	7.2000e-004	0.0000	2.6299	2.6299	9.0000e-005	0.0000	2.6323
Total	3.2200e-003	1.3700e-003	0.0186	3.0000e-005	2.5800e-003	3.0000e-005	2.6100e-003	6.9000e-004	3.0000e-005	7.2000e-004	0.0000	2.6299	2.6299	9.0000e-005	0.0000	2.6323

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	1.7971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9600e-003	0.0846	0.1269	1.9000e-004		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	16.3463	16.3463	3.2000e-003	0.0000	16.4262
Total	1.8011	0.0846	0.1269	1.9000e-004		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	16.3463	16.3463	3.2000e-003	0.0000	16.4262

Mitigated Construction Off-Site

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0189	0.0189	0.0000	0.0000	0.0190
Total	2.0000e-005	1.0000e-005	1.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0189	0.0189	0.0000	0.0000	0.0190

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	5.0000e-005	1.4700e-003	2.5400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.2942	0.2942	1.0000e-004	0.0000	0.2966
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.0000e-005	1.4700e-003	2.5400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.2942	0.2942	1.0000e-004	0.0000	0.2966

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	2.0000e-005	1.0000e-005	1.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0189	0.0189	0.0000	0.0000	0.0190
Total	2.0000e-005	1.0000e-005	1.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0189	0.0189	0.0000	0.0000	0.0190

17-051 4th and St. John (Rev 2019) AQ - Santa Clara County, Annual

**17-051 4th and St. John (Rev 2019) AQ - 2030
Santa Clara County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	287.00	Space	0.00	115,700.00	0
Apartments High Rise	298.00	Dwelling Unit	1.00	525,849.00	852
Strip Mall	8.98	1000sqft	0.00	8,978.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	290	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 290 rate

Land Use - Applicant provided land uses, 1 acre site, Student housing: 298 dwelling units (525,849-sqft for bother housing and other), retail (8,978-sqft) & parking garage 287 spaces (115,700-sqft)

Construction Phase - Applicant construction schedule using the total workdays provided in the sheet

Off-road Equipment - Project applicant construction equipment. Other equipment --> man lift

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Off-road Equipment - Project applicant construction equipment

Trips and VMT - 2,600 total cement round-trips during building construction

Demolition - 650 tons of pavement demolished

Grading - 6500-cy of soil hauled during grading

Vehicle Trips - Residential w/reduction: weekday 3.21, Sat 3.73, Sun 2.79. Strip mall w/reduction: weekday 18.16, Sat 17.23, Sun 8.37

Woodstoves - No wood all gas

Energy Use -

Water And Wastewater - 100% aerobic

Construction Off-road Equipment Mitigation - Electrical cranes

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstructionPhase	NumDays	5.00	275.00
tblConstructionPhase	NumDays	100.00	350.00
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	1.00	5.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	44.70	95.36
tblFireplaces	NumberWood	50.66	0.00
tblGrading	MaterialExported	0.00	6,500.00
tblLandUse	LandUseSquareFeet	114,800.00	115,700.00
tblLandUse	LandUseSquareFeet	298,000.00	525,849.00
tblLandUse	LandUseSquareFeet	8,980.00	8,978.00
tblLandUse	LotAcreage	2.58	0.00
tblLandUse	LotAcreage	4.81	1.00

tblLandUse	LotAcreage	0.21	0.00
tblOffRoadEquipment	HorsePower	172.00	20.00
tblOffRoadEquipment	LoadFactor	0.42	0.03
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	2.90
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	6.30
tblOffRoadEquipment	UsageHours	6.00	3.10
tblOffRoadEquipment	UsageHours	8.00	0.50
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.80
tblOffRoadEquipment	UsageHours	7.00	0.80
tblOffRoadEquipment	UsageHours	8.00	1.60
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	1.60
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00

tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.50
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripNumber	813.00	812.00
tblTripsAndVMT	HaulingTripNumber	0.00	5,200.00
tblVehicleTrips	ST_TR	4.98	3.73
tblVehicleTrips	ST_TR	42.04	17.23
tblVehicleTrips	SU_TR	3.65	2.79
tblVehicleTrips	SU_TR	20.43	8.37
tblVehicleTrips	WD_TR	4.20	3.21
tblVehicleTrips	WD_TR	44.32	18.16
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
tblWoodstoves	WoodstoveWoodMass	582.40	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
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Apartments High Rise	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Enclosed Parking with Elevator	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Strip Mall	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	263.6394	263.6394	0.0264	5.4500e-003	265.9239
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	263.6394	263.6394	0.0264	5.4500e-003	265.9239
NaturalGas Mitigated	0.0140	0.1197	0.0514	7.6000e-004		9.6700e-003	9.6700e-003		9.6700e-003	9.6700e-003	0.0000	138.5236	138.5236	2.6600e-003	2.5400e-003	139.3468
NaturalGas Unmitigated	0.0140	0.1197	0.0514	7.6000e-004		9.6700e-003	9.6700e-003		9.6700e-003	9.6700e-003	0.0000	138.5236	138.5236	2.6600e-003	2.5400e-003	139.3468

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	2.57456e+006	0.0139	0.1186	0.0505	7.6000e-004		9.5900e-003	9.5900e-003		9.5900e-003	9.5900e-003	0.0000	137.3881	137.3881	2.6300e-003	2.5200e-003	138.2046

Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	21277.9	1.1000e-004	1.0400e-003	8.8000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1355	1.1355	2.0000e-005	2.0000e-005	1.1422
Total		0.0140	0.1197	0.0514	7.7000e-004		9.6700e-003	9.6700e-003		9.6700e-003	9.6700e-003	0.0000	138.5236	138.5236	2.6500e-003	2.5400e-003	139.3468

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	2.57456e+006	0.0139	0.1186	0.0505	7.6000e-004		9.5900e-003	9.5900e-003		9.5900e-003	9.5900e-003	0.0000	137.3881	137.3881	2.6300e-003	2.5200e-003	138.2046
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	21277.9	1.1000e-004	1.0400e-003	8.8000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1355	1.1355	2.0000e-005	2.0000e-005	1.1422
Total		0.0140	0.1197	0.0514	7.7000e-004		9.6700e-003	9.6700e-003		9.6700e-003	9.6700e-003	0.0000	138.5236	138.5236	2.6500e-003	2.5400e-003	139.3468

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.23025e+006	161.8291	0.0162	3.3500e-003	163.2314
Enclosed Parking with Elevator	678002	89.1856	8.9200e-003	1.8500e-003	89.9584
Strip Mall	95974.8	12.6247	1.2600e-003	2.6000e-004	12.7341
Total		263.6394	0.0264	5.4600e-003	265.9239

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.23025e+006	161.8291	0.0162	3.3500e-003	163.2314
Enclosed Parking with Elevator	678002	89.1856	8.9200e-003	1.8500e-003	89.9584
Strip Mall	95974.8	12.6247	1.2600e-003	2.6000e-004	12.7341
Total		263.6394	0.0264	5.4600e-003	265.9239

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	2.5410	0.0357	2.2139	1.8000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	15.5243	15.5243	3.6900e-003	2.2000e-004	15.6815
Unmitigated	2.5410	0.0357	2.2139	1.8000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	15.5243	15.5243	3.6900e-003	2.2000e-004	15.6815

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	0.3773					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.0963					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2000e-003	0.0103	4.3700e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	11.9047	11.9047	2.3000e-004	2.2000e-004	11.9754
Landscaping	0.0663	0.0255	2.2095	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6197	3.6197	3.4600e-003	0.0000	3.7061
Total	2.5410	0.0358	2.2139	1.9000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	15.5243	15.5243	3.6900e-003	2.2000e-004	15.6815

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	0.3773					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.0963					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2000e-003	0.0103	4.3700e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	11.9047	11.9047	2.3000e-004	2.2000e-004	11.9754
Landscaping	0.0663	0.0255	2.2095	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6197	3.6197	3.4600e-003	0.0000	3.7061
Total	2.5410	0.0358	2.2139	1.9000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	15.5243	15.5243	3.6900e-003	2.2000e-004	15.6815

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.2210	0.0265	0.0159	32.6109
Unmitigated	27.2210	0.0265	0.0159	32.6109

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	19.4159 / 12.2405	26.3245	0.0256	0.0153	31.5359
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.665171 / 0.407686	0.8965	8.8000e-004	5.3000e-004	1.0750
Total		27.2210	0.0265	0.0159	32.6109

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	19.4159 / 12.2405	26.3245	0.0256	0.0153	31.5359
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.665171 / 0.407686	0.8965	8.8000e-004	5.3000e-004	1.0750
Total		27.2210	0.0265	0.0159	32.6109

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	29.7402	1.7576	0.0000	73.6801
Unmitigated	29.7402	1.7576	0.0000	73.6801

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
--	----------------	-----------	-----	-----	------

Land Use	tons	MT/yr			
Apartments High Rise	137.08	27.8260	1.6445	0.0000	68.9377
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	9.43	1.9142	0.1131	0.0000	4.7424
Total		29.7402	1.7576	0.0000	73.6801

Mitigated

Land Use	Waste Disposed tons	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	137.08	27.8260	1.6445	0.0000	68.9377
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	9.43	1.9142	0.1131	0.0000	4.7424
Total		29.7402	1.7576	0.0000	73.6801

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Attachment 3: Screening Community Risk Calculations

Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.

- County: Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.
- Roadway Direction: Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.
- Side of the Roadway: Identify on which side of the roadway the project is located.
- Distance from Roadway: Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.
- Annual Average Daily Traffic (ADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>.

Notes and References listed below the Search Boxes

Search Parameters

County

Roadway Direction

Side of the Roadway

Distance from Roadway feet

Annual Average Daily Traffic (ADT)

Results

Santa Clara County

EAST-WEST DIRECTIONAL ROADWAY

PM2.5 annual average

0.028 ($\mu\text{g}/\text{m}^3$)

Cancer Risk

1.52 (per million)

E. Santa Clara St

Cumulative plus project volumes from traffic report
Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Adjusted for 2015 OEHH
and EMFAC2014 for 2018

1.04

(per million)

Note that EMFAC2014 predicts DSL PM2.5 aggregate rates in 2018 that are 46% of EMFAC2011 for 2014. TOG gasoline rates are 56% of EMFAC2011 year 2014 rates. This is for light- and medium-duty vehicles traveling at 30 mph for Bay Area

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 Cal3qhc air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHH toxicity values adopted in 2013.

Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.

- County: Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.
- Roadway Direction: Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.
- Side of the Roadway: Identify on which side of the roadway the project is located.
- Distance from Roadway: Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.
- Annual Average Daily Traffic (ADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>.

Notes and References listed below the Search Boxes

Search Parameters

County:

Roadway Direction:

Side of the Roadway:

Distance from Roadway: feet

Annual Average Daily Traffic (ADT):

Const MEI

Results

Santa Clara County

EAST-WEST DIRECTIONAL ROADWAY

PM2.5 annual average

0.031 ($\mu\text{g}/\text{m}^3$)

Cancer Risk

1.67 (per million)

E. Santa Clara St

Cumulative plus project volumes from traffic report
Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Adjusted for 2015 OEHH
and EMFAC2014 for 2018

1.15

(per million)

Note that EMFAC2014 predicts DSL PM2.5 aggregate rates in 2018 that are 46% of EMFAC2011 for 2014. TOG gasoline rates are 56% of EMFAC2011 year 2014 rates. This is for light- and medium-duty vehicles traveling at 30 mph for Bay Area

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 Cal3qhc air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHH toxicity values adopted in 2013.



BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD

This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

[Click here for guidance on conducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.](#)

[Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.](#)

Table A: Requester Contact Information

Date of Request	7/3/2019
Contact Name	Casey Divine
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x103
Email	cdivine@illingworthrodkin.com
Project Name	4th & St John Tower
Address	100-152 North Fourth Street
City	San Jose
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	MU
Project Size (# of units or building square feet)	316du, 10,300sf retail

Comments: First section sources found in google earth tool, second section sources found on 2017 sources website

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in **Table A**. Incomplete forms will not be processed. Please include a project site map.
2. Download and install the free program Google Earth, <http://www.google.com/earth/download/ge/>, and then download the county specific Google Earth stationary source application files from the District's website, <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>. The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.
3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.
4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.
5. List the stationary source information in **Table B** blue section only.
6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.
7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Areana Flores at 415-749-4616, or aflores@baaqmd.gov

Table B: Google Earth data

Table B: Google Earth data											Project Site			
Distance from Receptor (feet) or MEI ¹	Facility Name	Address	Plant No.	Cancer Risk ²	Hazard Risk ²	PM _{2.5} ²	Source No. ³	Type of Source ⁴	Fuel Code ⁵	Status/Comments	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
445	Chevron #4259	147 E Santa Clara St	104124	4.14	0.02	--		GDF		permitted max throughput for 2018: 3,200,000 gallons/year	0.05	0.2	0.001	#VALUE!
800	San Jose New City Hall	200 E Santa Clara St	15267	5.57	0.01	0.19	Multiple	Multiple		Emissions file attached. Use Health Risk Calculator to determine updated risk value.	Diesel and Generic Multiplier	0.3	0.0005	0.03
750	SV Towers Investments LLC, C/O Harvest Properties	75 E Santa Clara St	23479	2.70	0.00	0.00	Multiple	Multiple		Emissions file attached. Use Health Risk Calculator to determine updated risk value.	0.07	0.2	0.0001	0.0002

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
7. The date that the HRSA was completed.
8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
 - a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
 - b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard
 - c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
 - d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but
 - e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Multiplier worksheet.
 - f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
 - g. This spray booth is considered to be insignificant.

Date last updated:
03/13/2018

Construction MEI

Distance from Receptor (feet) or MEI ¹	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
415	0.06	0.3	0.001	#VALUE!
750	Diesel and Generic Multiplier	0.4	0.0005	0.04
800	0.06	0.2	0.0001	0.0002

Plant# 104124

Chevron #4259 - 147 E Santa Clara St, San Jose

Permitted max throughput for 2018: 3,200,000 gallons/year

BAAQMD Evaluation		
	Controlled Rate (for all activities) =	0.67 lbs/10 ³ gal throughput
<u>Estimated Project Throughput</u>	3200 10 ³ gal/year	
<u>Annual VOC Emissions</u>	2,144 pounds/year	5.9 pounds/day
	1.07 tons/year	
<u>Annual Benzene Emissions</u>	0.01	0.032 pounds/day

BAAQMD reports emission rates for fueling stations of 0.00369 pounds of benzene per thousand gallons of fuel handled.



Step 1:

Plant Name	Chevron #4259
Plant No.	104124

Step 3:

Specify Source Type

Does facility have only diesel backup generators?	no
Is this analysis for a gas station?	yes

Step 2:
Estimate Distance

What is the distance (m) from the facility boundary to the MEI?	135
---	-----

Step 5:
Read
Estimates

Total Cancer Risk	0.226	per 1,000,000
Total Chronic Hazard	0.001	
Total PM2.5 Concentration	0.000	µg/m ³

Step 2:
Enter Emissions Data

Chemical Name	CAS No.	Emission	Cancer	Chronic	Concentration
	(dashes removed)	(lb/day)	(# / 1,000,000)	(index)	(µg/m3)
Fine Particulate Matter (PM2.5)		0.00E+00			
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001020	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673897	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzofuran	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sultone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2',3,4,4',5-PeCB	65510443	0.00E+00			
2,3',4,4',5,5'-HxCB	52663726	0.00E+00			
2,3',4,4',5-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5-HxCB	38380084	0.00E+00			
2,3,3',4,4'-PeCB	32598144	0.00E+00			
2,3,4,4',5-PeCB	74472370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzofuran	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related comp	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminoanisole	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminoanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5,5'-HxCB	32774166	0.00E+00			
3,3',4,4',5-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4'-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95830	0.00E+00			
4-Dimethylaminoazobenzene	60117	0.00E+00			
4-Nitropyrene	57835924	0.00E+00			
5-Methylchrysene	3697243	0.00E+00			

5-Nitroacenaphthene	602879	0.00E+00
6-Nitrochrysene	7496028	0.00E+00
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00
7H-dibenzo(c,g)carbazole	194592	0.00E+00
Acetaldehyde	75070	0.00E+00
Acetamide	60355	0.00E+00
Acrolein	107028	0.00E+00
Acrylamide	79061	0.00E+00
Acrylic Acid	79107	0.00E+00
Acrylonitrile	107131	0.00E+00
Allyl chloride	107051	0.00E+00
Ammonia	7664417	0.00E+00
Aniline	62533	0.00E+00
Arsenic	7440382	0.00E+00
Arsine	7784421	0.00E+00
Asbestos [1/(100 PCM fibers/m^3)]^-1	1332214	0.00E+00
Benz(a)anthracene	56553	0.00E+00
Benzene	71432	3.24E-02
Benzidine	92875	0.00E+00
Benzo(a)pyrene	50328	0.00E+00
Benzo(b)fluoranthene	205992	0.00E+00
Benzo(j)fluoranthene	205823	0.00E+00
Benzo(k)fluoranthene	207089	0.00E+00
Benzyl Chloride	100447	0.00E+00
Beryllium	7440417	0.00E+00
Bis(2-chloroethyl) Ether	111444	0.00E+00
Bis(2-chloromethyl) Ether	542881	0.00E+00
Cadmium	7440439	0.00E+00
Caprolactam	105602	0.00E+00
Carbon Disulfide	75150	0.00E+00
Carbon Monoxide	630080	0.00E+00
Carbon Tetrachloride	56235	0.00E+00
Carbonyl Sulfide	463581	0.00E+00
Chlorinated paraffins (Avg. chain length C12; approx. 6	108171262	0.00E+00
Chlorine	7782505	0.00E+00
Chlorine Dioxide	10049044	0.00E+00
Chlorite	7758192	0.00E+00
Chlorobenzene	108907	0.00E+00
Chlorodibromomethane	124481	0.00E+00
Chloroethane (Ethyl Chloride)	75003	0.00E+00
Chloroform	67663	0.00E+00
Chloropicrin	76062	0.00E+00
Chromic Trioxide	1333820	0.00E+00
Chromium-hexavalent	18540299	0.00E+00
Barium chromate2	10294403	0.00E+00
Calcium chromate2	13765190	0.00E+00
Lead chromate2	7758976	0.00E+00
Sodium dichromate2	10588019	0.00E+00
Strontium chromate2	7789062	0.00E+00
CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00
Chrysene	218019	0.00E+00
Copper	7440508	0.00E+00
Copper and Copper Compounds	7440508	0.00E+00
Cresol Mixtures	1319773	0.00E+00
Cupferron	135206	0.00E+00
Cyanide	57125	0.00E+00
Di(2-ethylhexyl)phthalate	117817	0.00E+00
Dibenz(a-h)acridine	226368	0.00E+00
Dibenz(a-h)anthracene	53703	0.00E+00
Dibenz(a-j)acridine	224420	0.00E+00
Dibenzo(a-e)pyrene	192654	0.00E+00
Dibenzo(a-h)pyrene	189640	0.00E+00
Dibenzo(a-i)pyrene	189559	0.00E+00
Dibenzo(a-l)pyrene	191300	0.00E+00
Diesel Exhaust Particulate	85105	0.00E+00
Diethanolamine	111422	0.00E+00
Dimethylformamide	68122	0.00E+00
Direct Black 38 (Technical Grade)	1937377	0.00E+00
Direct Blue 6 (Technical Grade)	2602462	0.00E+00
Direct Brown 95 (Technical Grade)	16071866	0.00E+00
Epichlorohydrin	106898	0.00E+00
Ethylbenzene	100414	0.00E+00
Ethylene Glycol	107211	0.00E+00
Ethylene Glycol Monobutyl Ether	111762	0.00E+00
Ethylene Glycol Monoethyl Ether	110805	0.00E+00
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00
Ethylene Glycol Monomethyl Ether	109864	0.00E+00
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00
Ethylene Oxide	75218	0.00E+00

4.14E+00

2.04E-02

Ethylene Thiourea	96457	0.00E+00
Fluorides	1101	0.00E+00
Formaldehyde (gas)	50000	0.00E+00
Glutaraldehyde	111308	0.00E+00
Hexachlorobenzene	118741	0.00E+00
Hexachlorocyclohexane (Technical Grade)	608731	0.00E+00
Hexachlorocyclohexane- Alpha Isomer	319846	0.00E+00
Hexachlorocyclohexane- Beta Isomer	319857	0.00E+00
Hexachlorocyclohexane- Gamma Isomer	58899	0.00E+00
Hydrazine	302012	0.00E+00
		0.00E+00
Hydrogen Chloride	7647010	0.00E+00
Hydrogen Cyanide	74908	0.00E+00
Hydrogen Fluoride	7664393	0.00E+00
Hydrogen Selenide	7783075	0.00E+00
Hydrogen Sulfide	7783064	0.00E+00
Indeno(1-2-3-c-d)pyrene	193395	0.00E+00
Isophorone	78591	0.00E+00
Isopropyl Alcohol	67630	0.00E+00
Lead Acetate	301042	0.00E+00
Lead and Lead Compounds	7439921	0.00E+00
Lead Phosphate	7446277	0.00E+00
Lead Subacetate	1335326	0.00E+00
m-CRESOL	108394	0.00E+00
m-XYLENE	108383	0.00E+00
Maleic Anhydride	108316	0.00E+00
Manganese & Manganese Compounds	7439965	0.00E+00
Mercury (Inorganic)	7439976	0.00E+00
Mercuric chloride	7487947	0.00E+00
Methanol	67561	0.00E+00
Methyl Bromide	74839	0.00E+00
Methyl Ethyl Ketone	78933	0.00E+00
Methyl Isocyanate	624839	0.00E+00
Methyl Tertiary Butyl Ether	1634044	0.00E+00
Methylene Chloride (Dichloromethane)	75092	0.00E+00
Methylene Diphenyl Isocyanate (MDI)	101688	0.00E+00
Michlers Ketone	90948	0.00E+00
n-Hexane	110543	0.00E+00
n-Nitroso-n-methylethylamine	10595956	0.00E+00
n-Nitrosodi-n-Butylamine	924163	0.00E+00
n-Nitrosodi-n-Propylamine	621647	0.00E+00
n-Nitrosodiethylamine	55185	0.00E+00
n-Nitrosodimethylamine	62759	0.00E+00
n-Nitrosodiphenylamine	86306	0.00E+00
n-Nitrosomorpholine	59892	0.00E+00
n-Nitrosopiperidine	100754	0.00E+00
n-Nitrosopyrrolidine	930552	0.00E+00
Naphthalene	91203	0.00E+00
Nickel and Nickel Compounds	7440020	0.00E+00
Nickel acetate	373024	0.00E+00
Nickel carbonate	3333673	0.00E+00
Nickel carbonyl	13463393	0.00E+00
Nickel hydroxide	12054487	0.00E+00
Nickelocene	1271289	0.00E+00
Nickel Oxide	1313991	0.00E+00
Nickel Refinery Dust	1146	0.00E+00
Nickel Subsulfide	12035722	0.00E+00
Nitric Acid	7697372	0.00E+00
Nitrogen Dioxide	10102440	0.00E+00
o-CRESOL	95487	0.00E+00
o-XYLENE	95476	0.00E+00
Oleum	8014957	0.00E+00
Ozone	10028156	0.00E+00
p-Chloro-o-toluidine	95692	0.00E+00
p-Cresidine	120718	0.00E+00
p-CRESOL	106445	0.00E+00
p-Nitrosodiphenylamine	156105	0.00E+00
p-XYLENE	106423	0.00E+00
Pentachlorophenol	87865	0.00E+00
Perchloroethylene	127184	0.00E+00
Phenol	108952	0.00E+00
Phosgene	75445	0.00E+00
Phosphine	7803512	0.00E+00
Phosphoric Acid	7664382	0.00E+00
Phthalic Anhydride	85449	0.00E+00
Polychlorinated Biphenyls	1336363	0.00E+00
Potassium Bromate	7758012	0.00E+00
Propylene	115071	0.00E+00

Propylene Glycol Monomethyl Ether	107982	0.00E+00			
Propylene oxide	75569	0.00E+00			
Selenium	7782492	0.00E+00			
Selenium sulfide	7446346	0.00E+00			
Silica (crystalline, respirable)	7631869	0.00E+00			
Sodium hydroxide	1310732	0.00E+00			
Styrene	100425	0.00E+00			
Sulfates	9960	0.00E+00			
Sulfur Dioxide	7446095	0.00E+00			
Sulfuric Acid	7664939	0.00E+00			
Sulfur Trioxide	7446719	0.00E+00			
Tertiary-butyl acetate	540885	0.00E+00			
Tetrachloroethylene	127184	0.00E+00			
Thioacetamide	62555	0.00E+00			
Toluene	108883	0.00E+00			
Toluene Diisocyanates	26471625	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	91087	0.00E+00			
Trichloroethylene	79016	0.00E+00			
Triethylamine	121448	0.00E+00			
Urethane	51796	0.00E+00			
Vanadium pentoxide	1314621	0.00E+00			
Vinyl acetate	108054	0.00E+00			
Vinyl chloride	75014	0.00E+00			
Xylenes (technical mixture of m, o, p-isomers)	1330207	0.00E+00			
Vanadium	7440622	0.00E+00			
TOTAL UNADJUSTED Risk Values		4.137	0.020	0.000	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 MOST RECENT P/O APPROVED (2019)

Printed: JUL 10, 2019

San Jose New City Hall (P# 15267)

S#	SOURCE NAME	SOURCE CODE	POLLUTANT	CODE	LBS/DAY
MATERIAL THROUGHPUT		DATE			
1	00 KW Emergency Standby Generator	C2240098			
			Benzene	41	8.03E-04
			Formaldehyde	124	6.64E-05
			Organics (other, including	990	5.48E-02
			Arsenic (all)	1030	6.99E-07
			Beryllium (all) pollutant	1040	4.10E-07
			Cadmium	1070	1.75E-06
			Chromium (hexavalent)	1095	3.62E-08
			Lead (all) pollutant	1140	1.48E-06
			Manganese	1160	2.33E-06
			Nickel pollutant	1180	2.83E-05
			Mercury (all) pollutant	1190	4.94E-07
			Diesel Engine Exhaust Part	1350	3.76E-03
			PAH's (non-speciated)	1840	3.69E-06
			Nitrous Oxide (N2O)	2030	2.15E-04
			Nitrogen Oxides (part not	2990	3.21E-01
			Sulfur Dioxide (SO2)	3990	2.62E-04
			Carbon Monoxide (CO) pollu	4990	2.45E-02
			Carbon Dioxide, non-biogen	6960	2.69E+01
			Methane (CH4)	6970	1.08E-03
2	Boiler	C1150189			
			Benzene	41	3.34E-05
			Formaldehyde	124	1.19E-03
			Toluene	293	5.42E-05
			Organics (other, including	990	6.24E-02
			Particulates (part not spe	1990	4.78E-02
			Nitrous Oxide (N2O)	2030	3.68E-03
			Nitrogen Oxides (part not	2990	2.07E+00
			Sulfur Dioxide (SO2)	3990	9.05E-03
			Carbon Monoxide (CO) pollu	4990	4.78E-01
			Carbon Dioxide, non-biogen	6960	1.95E+03
			Methane (CH4)	6970	3.03E-02
3	Boiler	C1250189			
			Benzene	41	3.34E-05
			Formaldehyde	124	1.19E-03
			Toluene	293	5.42E-05
			Organics (other, including	990	9.43E-02

Particulates (part not spe	1990	4.78E-02
Nitrous Oxide (N2O)	2030	3.68E-03
Nitrogen Oxides (part not	2990	1.59E+00
Sulfur Dioxide (SO2)	3990	9.05E-03
Carbon Monoxide (CO) pollu	4990	2.71E-01
Carbon Dioxide, non-biogen	6960	1.95E+03
Methane (CH4)	6970	3.03E-02

PLANT TOTAL:

lbs/day Pollutant

6.99E-07	Arsenic (all) (1030)
8.70E-04	Benzene (41)
4.10E-07	Beryllium (all) pollutant (1040)
1.75E-06	Cadmium (1070)
3.93E+03	Carbon Dioxide, non-biogenic CO2 (6960)
7.73E-01	Carbon Monoxide (CO) pollutant (4990)
3.62E-08	Chromium (hexavalent) (1095)
3.76E-03	Diesel Engine Exhaust Particulate Matter (1350)
2.46E-03	Formaldehyde (124)
1.48E-06	Lead (all) pollutant (1140)
2.33E-06	Manganese (1160)
4.94E-07	Mercury (all) pollutant (1190)
6.16E-02	Methane (CH4) (6970)
2.83E-05	Nickel pollutant (1180)
3.98E+00	Nitrogen Oxides (part not spec elsewhere) (2990)
7.57E-03	Nitrous Oxide (N2O) (2030)
2.12E-01	Organics (other, including CH4) (990)
3.69E-06	PAH's (non-speciated) (1840)
9.56E-02	Particulates (part not spec elsewhere) (1990)
1.84E-02	Sulfur Dioxide (SO2) (3990)
1.08E-04	Toluene (293)



Step 1:

Plant Name **San Jose New City Hall**
 Plant No. **15267**

Step 3:

Specify Source Type

Does facility have only diesel backup generators? **yes**
 Is this analysis for a gas station? **no**

Step 2:
Estimate Distance

What is the distance (m) from the facility boundary to the MEI? **245**

Step 5:
Read Estimates

Total Cancer Risk **0.330** per 1,000,000
Total Chronic Hazard **0.000**
Total PM2.5 Concentration **0.000** $\mu\text{g}/\text{m}^3$

Step 2:
Enter Emissions Data

Chemical Name	CAS No. <small>(dashes removed)</small>	Emission <small>(lb/day)</small>	Cancer <small>(# / 1,000,000)</small>	Chronic <small>(index)</small>	Concentration <small>($\mu\text{g}/\text{m}^3$)</small>
Fine Particulate Matter (PM2.5)		3.76E-03			0.01
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001020	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673897	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzofuran	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sultone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2',3,4,4',5-PeCB	65510443	0.00E+00			
2,3',4,4',5,5'-HxCB	52663726	0.00E+00			
2,3',4,4',5-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5-HxCB	38380084	0.00E+00			
2,3,3',4,4'-PeCB	32598144	0.00E+00			
2,3,4,4',5-PeCB	74472370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzofuran	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related comp	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminobenzene	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminoanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5,5'-HxCB	32774166	0.00E+00			
3,3',4,4',5-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4'-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95830	0.00E+00			
4-Dimethylaminoazobenzene	60117	0.00E+00			
4-Nitropyrene	57835924	0.00E+00			
5-Methylchrycene	3697243	0.00E+00			

5-Nitroacenaphthene	602879	0.00E+00		
6-Nitrochrysene	7496028	0.00E+00		
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00		
7H-dibenzo(c,g)carbazole	194592	0.00E+00		
Acetaldehyde	75070	0.00E+00		
Acetamide	60355	0.00E+00		
Acrolein	107028	0.00E+00		
Acrylamide	79061	0.00E+00		
Acrylic Acid	79107	0.00E+00		
Acrylonitrile	107131	0.00E+00		
Allyl chloride	107051	0.00E+00		
Ammonia	7664417	0.00E+00		
Aniline	62533	0.00E+00		
Arsenic	7440382	6.99E-07	1.07E-02	8.81E-05
Arsine	7784421	0.00E+00		
Asbestos [1/(100 PCM fibers/m^3)]^-1	1332214	0.00E+00		
Benz(a)anthracene	56553	0.00E+00		
Benzene	71432	8.03E-04	1.03E-01	5.06E-04
Benzidine	92875	0.00E+00		
Benzo(a)pyrene	50328	0.00E+00		
Benzo(b)fluoranthene	205992	0.00E+00		
Benzo(j)fluoranthene	205823	0.00E+00		
Benzo(k)fluoranthene	207089	0.00E+00		
Benzyl Chloride	100447	0.00E+00		
Beryllium	7440417	4.10E-07	4.40E-03	1.11E-04
Bis(2-chloroethyl) Ether	111444	0.00E+00		
Bis(2-chloromethyl) Ether	542881	0.00E+00		
Cadmium	7440439	1.75E-06	3.36E-02	1.65E-04
Caprolactam	105602	0.00E+00		
Carbon Disulfide	75150	0.00E+00		
Carbon Monoxide	630080	2.45E-02		
Carbon Tetrachloride	56235	0.00E+00		
Carbonyl Sulfide	463581	0.00E+00		
Chlorinated paraffins (Avg. chain length C12; approx. 6	108171262	0.00E+00		
Chlorine	7782505	0.00E+00		
Chlorine Dioxide	10049044	0.00E+00		
Chlorite	7758192	0.00E+00		
Chlorobenzene	108907	0.00E+00		
Chlorodibromomethane	124481	0.00E+00		
Chloroethane (Ethyl Chloride)	75003	0.00E+00		
Chloroform	67663	0.00E+00		
Chloropicrin	76062	0.00E+00		
Chromic Trioxide	1333820	0.00E+00		
Chromium-hexavalent	18540299	3.62E-08	2.36E-02	3.42E-07
Barium chromate2	10294403	0.00E+00		
Calcium chromate2	13765190	0.00E+00		
Lead chromate2	7758976	0.00E+00		
Sodium dichromate2	10588019	0.00E+00		
Strontium chromate2	7789062	0.00E+00		
CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00		
Chrysene	218019	0.00E+00		
Copper	7440508	0.00E+00		
Copper and Copper Compounds	7440508	0.00E+00		
Cresol Mixtures	1319773	0.00E+00		
Cupferron	135206	0.00E+00		
Cyanide	57125	0.00E+00		
Di(2-ethylhexyl)phthalate	117817	0.00E+00		
Dibenz(a-h)acridine	226368	0.00E+00		
Dibenz(a-h)anthracene	53703	0.00E+00		
Dibenz(a-j)acridine	224420	0.00E+00		
Dibenzo(a-e)pyrene	192654	0.00E+00		
Dibenzo(a-h)pyrene	189640	0.00E+00		
Dibenzo(a-i)pyrene	189559	0.00E+00		
Dibenzo(a-l)pyrene	191300	0.00E+00		
Diesel Exhaust Particulate	85105	3.76E-03	5.29E+00	1.42E-03
Diethanolamine	111422	0.00E+00		
Dimethylformamide	68122	0.00E+00		
Direct Black 38 (Technical Grade)	1937377	0.00E+00		
Direct Blue 6 (Technical Grade)	2602462	0.00E+00		
Direct Brown 95 (Technical Grade)	16071866	0.00E+00		
Epichlorohydrin	106898	0.00E+00		
Ethylbenzene	100414	0.00E+00		
Ethylene Glycol	107211	0.00E+00		
Ethylene Glycol Monobutyl Ether	111762	0.00E+00		
Ethylene Glycol Monoethyl Ether	110805	0.00E+00		
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00		
Ethylene Glycol Monomethyl Ether	109864	0.00E+00		
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00		
Ethylene Oxide	75218	0.00E+00		

Propylene Glycol Monomethyl Ether	107982	0.00E+00			
Propylene oxide	75569	0.00E+00			
Selenium	7782492	0.00E+00			
Selenium sulfide	7446346	0.00E+00			
Silica (crystalline, respirable)	7631869	0.00E+00			
Sodium hydroxide	1310732	0.00E+00			
Styrene	100425	0.00E+00			
Sulfates	9960	0.00E+00			
Sulfur Dioxide	7446095	2.62E-04			
Sulfuric Acid	7664939	0.00E+00			
Sulfur Trioxide	7446719	0.00E+00			
Tertiary-butyl acetate	540885	0.00E+00			
Tetrachloroethylene	127184	0.00E+00			
Thioacetamide	62555	0.00E+00			
Toluene	108883	0.00E+00			
Toluene Diisocyanates	26471625	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	91087	0.00E+00			
Trichloroethylene	79016	0.00E+00			
Triethylamine	121448	0.00E+00			
Urethane	51796	0.00E+00			
Vanadium pentoxide	1314621	0.00E+00			
Vinyl acetate	108054	0.00E+00			
Vinyl chloride	75014	0.00E+00			
Xylenes (technical mixture of m, o, p-isomers)	1330207	0.00E+00			
Vanadium	7440622	0.00E+00			
TOTAL UNADJUSTED Risk Values		5.499	0.006	0.007	



Step 1:

Plant Name **San Jose New City Hall**
 Plant No. **15267**

Step 3:

Specify Source Type

Does facility have only diesel backup generators? **no**
 Is this analysis for a gas station? **no**

Step 2:
 Estimate Distance

What is the distance (m) from the facility boundary to the MEI? **245**

Step 5:
 Read Estimates

Total Cancer Risk **0.014** per 1,000,000
Total Chronic Hazard **0.000**
Total PM2.5 Concentration **0.034** $\mu\text{g}/\text{m}^3$

Step 2:
 Enter Emissions Data

Chemical Name	CAS No. <small>(dashes removed)</small>	Emission <small>(lb/day)</small>	Cancer <small>(# / 1,000,000)</small>	Chronic <small>(index)</small>	Concentration <small>($\mu\text{g}/\text{m}^3$)</small>
Fine Particulate Matter (PM2.5)		9.56E-02			0.18
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001020	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673897	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzofuran	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sultone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2',3,4,4',5-PeCB	65510443	0.00E+00			
2,3',4,4',5,5'-HxCB	52663726	0.00E+00			
2,3',4,4',5-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5-HxCB	38380084	0.00E+00			
2,3,3',4,4'-PeCB	32598144	0.00E+00			
2,3,4,4',5-PeCB	74472370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzofuran	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related comp	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminobenzene	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminoanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5,5'-HxCB	32774166	0.00E+00			
3,3',4,4',5-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4'-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95830	0.00E+00			
4-Dimethylaminoazobenzene	60117	0.00E+00			
4-Nitropyrene	57835924	0.00E+00			
5-Methylchrysene	3697243	0.00E+00			

5-Nitroacenaphthene	602879	0.00E+00
6-Nitrochrysene	7496028	0.00E+00
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00
7H-dibenzo(c,g)carbazole	194592	0.00E+00
Acetaldehyde	75070	0.00E+00
Acetamide	60355	0.00E+00
Acrolein	107028	0.00E+00
Acrylamide	79061	0.00E+00
Acrylic Acid	79107	0.00E+00
Acrylonitrile	107131	0.00E+00
Allyl chloride	107051	0.00E+00
Ammonia	7664417	0.00E+00
Aniline	62533	0.00E+00
Arsenic	7440382	0.00E+00
Arsine	7784421	0.00E+00
Asbestos [1/(100 PCM fibers/m^3)]^-1	1332214	0.00E+00
Benz(a)anthracene	56553	0.00E+00
Benzene	71432	6.68E-05
Benzidine	92875	0.00E+00
Benzo(a)pyrene	50328	0.00E+00
Benzo(b)fluoranthene	205992	0.00E+00
Benzo(j)fluoranthene	205823	0.00E+00
Benzo(k)fluoranthene	207089	0.00E+00
Benzyl Chloride	100447	0.00E+00
Beryllium	7440417	0.00E+00
Bis(2-chloroethyl) Ether	111444	0.00E+00
Bis(2-chloromethyl) Ether	542881	0.00E+00
Cadmium	7440439	0.00E+00
Caprolactam	105602	0.00E+00
Carbon Disulfide	75150	0.00E+00
Carbon Monoxide	630080	7.49E-01
Carbon Tetrachloride	56235	0.00E+00
Carbonyl Sulfide	463581	0.00E+00
Chlorinated paraffins (Avg. chain length C12; approx. 6	108171262	0.00E+00
Chlorine	7782505	0.00E+00
Chlorine Dioxide	10049044	0.00E+00
Chlorite	7758192	0.00E+00
Chlorobenzene	108907	0.00E+00
Chlorodibromomethane	124481	0.00E+00
Chloroethane (Ethyl Chloride)	75003	0.00E+00
Chloroform	67663	0.00E+00
Chloropicrin	76062	0.00E+00
Chromic Trioxide	1333820	0.00E+00
Chromium-hexavalent	18540299	0.00E+00
Barium chromate2	10294403	0.00E+00
Calcium chromate2	13765190	0.00E+00
Lead chromate2	7758976	0.00E+00
Sodium dichromate2	10588019	0.00E+00
Strontium chromate2	7789062	0.00E+00
CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00
Chrysene	218019	0.00E+00
Copper	7440508	0.00E+00
Copper and Copper Compounds	7440508	0.00E+00
Cresol Mixtures	1319773	0.00E+00
Cupferron	135206	0.00E+00
Cyanide	57125	0.00E+00
Di(2-ethylhexyl)phthalate	117817	0.00E+00
Dibenz(a-h)acridine	226368	0.00E+00
Dibenz(a-h)anthracene	53703	0.00E+00
Dibenz(a-j)acridine	224420	0.00E+00
Dibenzo(a-e)pyrene	192654	0.00E+00
Dibenzo(a-h)pyrene	189640	0.00E+00
Dibenzo(a-i)pyrene	189559	0.00E+00
Dibenzo(a-l)pyrene	191300	0.00E+00
Diesel Exhaust Particulate	85105	0.00E+00
Diethanolamine	111422	0.00E+00
Dimethylformamide	68122	0.00E+00
Direct Black 38 (Technical Grade)	1937377	0.00E+00
Direct Blue 6 (Technical Grade)	2602462	0.00E+00
Direct Brown 95 (Technical Grade)	16071866	0.00E+00
Epichlorohydrin	106898	0.00E+00
Ethylbenzene	100414	0.00E+00
Ethylene Glycol	107211	0.00E+00
Ethylene Glycol Monobutyl Ether	111762	0.00E+00
Ethylene Glycol Monoethyl Ether	110805	0.00E+00
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00
Ethylene Glycol Monomethyl Ether	109864	0.00E+00
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00
Ethylene Oxide	75218	0.00E+00

8.54E-03

4.21E-05

Ethylene Thiourea	96457	0.00E+00
Fluorides	1101	0.00E+00
Formaldehyde (gas)	50000	2.38E-03
Glutaraldehyde	111308	0.00E+00
Hexachlorobenzene	118741	0.00E+00
Hexachlorocyclohexane (Technical Grade)	608731	0.00E+00
Hexachlorocyclohexane- Alpha Isomer	319846	0.00E+00
Hexachlorocyclohexane- Beta Isomer	319857	0.00E+00
Hexachlorocyclohexane- Gamma Isomer	58899	0.00E+00
Hydrazine	302012	0.00E+00
		0.00E+00
Hydrogen Chloride	7647010	0.00E+00
Hydrogen Cyanide	74908	0.00E+00
Hydrogen Fluoride	7664393	0.00E+00
Hydrogen Selenide	7783075	0.00E+00
Hydrogen Sulfide	7783064	0.00E+00
Indeno(1-2-3-c-d)pyrene	193395	0.00E+00
Isophorone	78591	0.00E+00
Isopropyl Alcohol	67630	0.00E+00
Lead Acetate	301042	0.00E+00
Lead and Lead Compounds	7439921	0.00E+00
Lead Phosphate	7446277	0.00E+00
Lead Subacetate	1335326	0.00E+00
m-CRESOL	108394	0.00E+00
m-XYLENE	108383	0.00E+00
Maleic Anhydride	108316	0.00E+00
Manganese & Manganese Compounds	7439965	0.00E+00
Mercury (Inorganic)	7439976	0.00E+00
Mercuric chloride	7487947	0.00E+00
Methanol	67561	0.00E+00
Methyl Bromide	74839	0.00E+00
Methyl Ethyl Ketone	78933	0.00E+00
Methyl Isocyanate	624839	0.00E+00
Methyl Tertiary Butyl Ether	1634044	0.00E+00
Methylene Chloride (Dichloromethane)	75092	0.00E+00
Methylene Diphenyl Isocyanate (MDI)	101688	0.00E+00
Michlers Ketone	90948	0.00E+00
n-Hexane	110543	0.00E+00
n-Nitroso-n-methylethylamine	10595956	0.00E+00
n-Nitrosodi-n-Butylamine	924163	0.00E+00
n-Nitrosodi-n-Propylamine	621647	0.00E+00
n-Nitrosodiethylamine	55185	0.00E+00
n-Nitrosodimethylamine	62759	0.00E+00
n-Nitrosodiphenylamine	86306	0.00E+00
n-Nitrosomorpholine	59892	0.00E+00
n-Nitrosopiperidine	100754	0.00E+00
n-Nitrosopyrrolidine	930552	0.00E+00
Naphthalene	91203	0.00E+00
Nickel and Nickel Compounds	7440020	0.00E+00
Nickel acetate	373024	0.00E+00
Nickel carbonate	3333673	0.00E+00
Nickel carbonyl	13463393	0.00E+00
Nickel hydroxide	12054487	0.00E+00
Nickelocene	1271289	0.00E+00
Nickel Oxide	1313991	0.00E+00
Nickel Refinery Dust	1146	0.00E+00
Nickel Subsulfide	12035722	0.00E+00
Nitric Acid	7697372	0.00E+00
Nitrogen Dioxide	10102440	0.00E+00
o-CRESOL	95487	0.00E+00
o-XYLENE	95476	0.00E+00
Oleum	8014957	0.00E+00
Ozone	10028156	0.00E+00
p-Chloro-o-toluidine	95692	0.00E+00
p-Cresidine	120718	0.00E+00
p-CRESOL	106445	0.00E+00
p-Nitrosodiphenylamine	156105	0.00E+00
p-XYLENE	106423	0.00E+00
Pentachlorophenol	87865	0.00E+00
Perchloroethylene	127184	0.00E+00
Phenol	108952	0.00E+00
Phosgene	75445	0.00E+00
Phosphine	7803512	0.00E+00
Phosphoric Acid	7664382	0.00E+00
Phthalic Anhydride	85449	0.00E+00
Polychlorinated Biphenyls	1336363	0.00E+00
Potassium Bromate	7758012	0.00E+00
Propylene	115071	0.00E+00

6.39E-02

5.00E-04

Propylene Glycol Monomethyl Ether	107982	0.00E+00			
Propylene oxide	75569	0.00E+00			
Selenium	7782492	0.00E+00			
Selenium sulfide	7446346	0.00E+00			
Silica (crystalline, respirable)	7631869	0.00E+00			
Sodium hydroxide	1310732	0.00E+00			
Styrene	100425	0.00E+00			
Sulfates	9960	0.00E+00			
Sulfur Dioxide	7446095	1.81E-02			
Sulfuric Acid	7664939	0.00E+00			
Sulfur Trioxide	7446719	0.00E+00			
Tertiary-butyl acetate	540885	0.00E+00			
Tetrachloroethylene	127184	0.00E+00			
Thioacetamide	62555	0.00E+00			
Toluene	108883	1.08E-04	6.83E-07		
Toluene Diisocyanates	26471625	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	91087	0.00E+00			
Trichloroethylene	79016	0.00E+00			
Triethylamine	121448	0.00E+00			
Urethane	51796	0.00E+00			
Vanadium pentoxide	1314621	0.00E+00			
Vinyl acetate	108054	0.00E+00			
Vinyl chloride	75014	0.00E+00			
Xylenes (technical mixture of m, o, p-isomers)	1330207	0.00E+00			
Vanadium	7440622	0.00E+00			
TOTAL UNADJUSTED Risk Values			0.072	0.001	0.180

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 MOST RECENT P/O APPROVED (2018)

Printed: JUL 10, 2019

SV Towers Investments LLC, C/O Harvest Properties (P# 23479)

S#	SOURCE NAME	SOURCE CODE				
MATERIAL			DATE	POLLUTANT	CODE	LBS/DAY
THROUGHPUT						

2	Emergency Diesel Generator	C22BG098				
				Benzene	41	1.06E-04
				Formaldehyde	124	8.76E-06
				Organics (other, including	990	5.12E-03
				Arsenic (all)	1030	9.22E-08
				Beryllium (all) pollutant	1040	5.41E-08
				Cadmium	1070	2.31E-07
				Chromium (hexavalent)	1095	4.77E-09
				Lead (all) pollutant	1140	1.96E-07
				Manganese	1160	3.07E-07
				Nickel pollutant	1180	3.73E-06
				Mercury (all) pollutant	1190	6.52E-08
				Diesel Engine Exhaust Part	1350	1.02E-03
				PAH's (non-speciated)	1840	4.87E-07
				Nitrous Oxide (N2O)	2030	2.84E-05
				Nitrogen Oxides (part not	2990	7.46E-02
				Sulfur Dioxide (SO2)	3990	3.46E-05
				Carbon Monoxide (CO) pollu	4990	1.62E-02
				Carbon Dioxide, non-biogen	6960	3.55E+00
				Methane (CH4)	6970	1.42E-04
3	Diesel Fire Pump	C24BG098				
				Benzene	41	9.08E-05
				Formaldehyde	124	7.41E-06
				Organics (other, including	990	4.95E-03
				Arsenic (all)	1030	7.80E-08
				Beryllium (all) pollutant	1040	4.57E-08
				Cadmium	1070	1.95E-07
				Chromium (hexavalent)	1095	4.04E-09
				Lead (all) pollutant	1140	1.65E-07
				Manganese	1160	2.60E-07
				Nickel pollutant	1180	3.16E-06
				Mercury (all) pollutant	1190	5.52E-08
				Diesel Engine Exhaust Part	1350	8.61E-04
				PAH's (non-speciated)	1840	4.12E-07
				Nitrous Oxide (N2O)	2030	2.40E-05
				Nitrogen Oxides (part not	2990	6.31E-02
				Sulfur Dioxide (SO2)	3990	2.93E-05
				Carbon Monoxide (CO) pollu	4990	1.37E-02

Carbon Dioxide, non-biogen	6960	3.00E+00
Methane (CH4)	6970	1.20E-04

PLANT TOTAL:

lbs/day Pollutant

1.70E-07	Arsenic (all) (1030)
1.97E-04	Benzene (41)
9.98E-08	Beryllium (all) pollutant (1040)
4.26E-07	Cadmium (1070)
6.55E+00	Carbon Dioxide, non-biogenic CO2 (6960)
2.99E-02	Carbon Monoxide (CO) pollutant (4990)
8.81E-09	Chromium (hexavalent) (1095)
1.88E-03	Diesel Engine Exhaust Particulate Matter (1350)
1.62E-05	Formaldehyde (124)
3.61E-07	Lead (all) pollutant (1140)
5.67E-07	Manganese (1160)
1.20E-07	Mercury (all) pollutant (1190)
2.62E-04	Methane (CH4) (6970)
6.89E-06	Nickel pollutant (1180)
1.38E-01	Nitrogen Oxides (part not spec elsewhere) (2990)
5.24E-05	Nitrous Oxide (N2O) (2030)
1.01E-02	Organics (other, including CH4) (990)
8.98E-07	PAH's (non-speciated) (1840)
6.38E-05	Sulfur Dioxide (SO2) (3990)



Step 1:	
Plant Name	SV Towers Investments LLC, C/O Harvest Properties
Plant No.	23479

Step 3:	
Specify Source Type	
Does facility have only diesel backup generators?	yes
Is this analysis for a gas station?	no

Step 2:	
Estimate Distance	
What is the distance (m) from the facility boundary to the MEI?	230

Step 5:		
Read Estimates		
Total Cancer Risk	0.189	per 1,000,000
Total Chronic Hazard	0.000	
Total PM2.5 Concentration	0.000	µg/m ³

Step 2:
Enter Emissions Data

Chemical Name	CAS No.	Emission	Cancer	Chronic	Concentration
	(dashes removed)	(lb/day)	(# / 1,000,000)	(index)	(µg/m3)
Fine Particulate Matter (PM2.5)		1.88E-03			0.00
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001020	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673897	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzofuran	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sultone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2',3,4,4',5-PeCB	65510443	0.00E+00			
2,3',4,4',5,5'-HxCB	52663726	0.00E+00			
2,3',4,4',5-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5-HxCB	38380084	0.00E+00			
2,3,3',4,4'-PeCB	32598144	0.00E+00			
2,3,4,4',5-PeCB	74472370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzofuran	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related comp	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminobenzene	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminoanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5,5'-HxCB	32774166	0.00E+00			
3,3',4,4',5-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4'-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95830	0.00E+00			
4-Dimethylaminoazobenzene	60117	0.00E+00			
4-Nitropyrene	57835924	0.00E+00			
5-Methylchrysene	3697243	0.00E+00			

5-Nitroacenaphthene	602879	0.00E+00		
6-Nitrochrysene	7496028	0.00E+00		
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00		
7H-dibenzo(c,g)carbazole	194592	0.00E+00		
Acetaldehyde	75070	0.00E+00		
Acetamide	60355	0.00E+00		
Acrolein	107028	0.00E+00		
Acrylamide	79061	0.00E+00		
Acrylic Acid	79107	0.00E+00		
Acrylonitrile	107131	0.00E+00		
Allyl chloride	107051	0.00E+00		
Ammonia	7664417	0.00E+00		
Aniline	62533	0.00E+00		
Arsenic	7440382	1.70E-07	2.61E-03	2.14E-05
Arsine	7784421	0.00E+00		
Asbestos [1/(100 PCM fibers/m^3)]^-1	1332214	0.00E+00		
Benz(a)anthracene	56553	0.00E+00		
Benzene	71432	1.97E-04	2.52E-02	1.24E-04
Benzidine	92875	0.00E+00		
Benzo(a)pyrene	50328	0.00E+00		
Benzo(b)fluoranthene	205992	0.00E+00		
Benzo(j)fluoranthene	205823	0.00E+00		
Benzo(k)fluoranthene	207089	0.00E+00		
Benzyl Chloride	100447	0.00E+00		
Beryllium	7440417	9.98E-08	1.07E-03	2.69E-05
Bis(2-chloroethyl) Ether	111444	0.00E+00		
Bis(2-chloromethyl) Ether	542881	0.00E+00		
Cadmium	7440439	4.26E-07	8.17E-03	4.03E-05
Caprolactam	105602	0.00E+00		
Carbon Disulfide	75150	0.00E+00		
Carbon Monoxide	630080	2.99E-02		
Carbon Tetrachloride	56235	0.00E+00		
Carbonyl Sulfide	463581	0.00E+00		
Chlorinated paraffins (Avg. chain length C12; approx. 6	108171262	0.00E+00		
Chlorine	7782505	0.00E+00		
Chlorine Dioxide	10049044	0.00E+00		
Chlorite	7758192	0.00E+00		
Chlorobenzene	108907	0.00E+00		
Chlorodibromomethane	124481	0.00E+00		
Chloroethane (Ethyl Chloride)	75003	0.00E+00		
Chloroform	67663	0.00E+00		
Chloropicrin	76062	0.00E+00		
Chromic Trioxide	1333820	0.00E+00		
Chromium-hexavalent	18540299	8.81E-09	5.75E-03	8.33E-08
Barium chromate2	10294403	0.00E+00		
Calcium chromate2	13765190	0.00E+00		
Lead chromate2	7758976	0.00E+00		
Sodium dichromate2	10588019	0.00E+00		
Strontium chromate2	7789062	0.00E+00		
CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00		
Chrysene	218019	0.00E+00		
Copper	7440508	0.00E+00		
Copper and Copper Compounds	7440508	0.00E+00		
Cresol Mixtures	1319773	0.00E+00		
Cupferron	135206	0.00E+00		
Cyanide	57125	0.00E+00		
Di(2-ethylhexyl)phthalate	117817	0.00E+00		
Dibenz(a-h)acridine	226368	0.00E+00		
Dibenz(a-h)anthracene	53703	0.00E+00		
Dibenz(a-j)acridine	224420	0.00E+00		
Dibenzo(a-e)pyrene	192654	0.00E+00		
Dibenzo(a-h)pyrene	189640	0.00E+00		
Dibenzo(a-i)pyrene	189559	0.00E+00		
Dibenzo(a-l)pyrene	191300	0.00E+00		
Diesel Exhaust Particulate	85105	1.88E-03	2.64E+00	7.11E-04
Diethanolamine	111422	0.00E+00		
Dimethylformamide	68122	0.00E+00		
Direct Black 38 (Technical Grade)	1937377	0.00E+00		
Direct Blue 6 (Technical Grade)	2602462	0.00E+00		
Direct Brown 95 (Technical Grade)	16071866	0.00E+00		
Epichlorohydrin	106898	0.00E+00		
Ethylbenzene	100414	0.00E+00		
Ethylene Glycol	107211	0.00E+00		
Ethylene Glycol Monobutyl Ether	111762	0.00E+00		
Ethylene Glycol Monoethyl Ether	110805	0.00E+00		
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00		
Ethylene Glycol Monomethyl Ether	109864	0.00E+00		
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00		
Ethylene Oxide	75218	0.00E+00		

Propylene Glycol Monomethyl Ether	107982	0.00E+00			
Propylene oxide	75569	0.00E+00			
Selenium	7782492	0.00E+00			
Selenium sulfide	7446346	0.00E+00			
Silica (crystalline, respirable)	7631869	0.00E+00			
Sodium hydroxide	1310732	0.00E+00			
Styrene	100425	0.00E+00			
Sulfates	9960	0.00E+00			
Sulfur Dioxide	7446095	6.38E-05			
Sulfuric Acid	7664939	0.00E+00			
Sulfur Trioxide	7446719	0.00E+00			
Tertiary-butyl acetate	540885	0.00E+00			
Tetrachloroethylene	127184	0.00E+00			
Thioacetamide	62555	0.00E+00			
Toluene	108883	0.00E+00			
Toluene Diisocyanates	26471625	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	91087	0.00E+00			
Trichloroethylene	79016	0.00E+00			
Triethylamine	121448	0.00E+00			
Urethane	51796	0.00E+00			
Vanadium pentoxide	1314621	0.00E+00			
Vinyl acetate	108054	0.00E+00			
Vinyl chloride	75014	0.00E+00			
Xylenes (technical mixture of m, o, p-isomers)	1330207	0.00E+00			
Vanadium	7440622	0.00E+00			
TOTAL UNADJUSTED Risk Values		2.696	0.002	0.004	

Attachment 4: Construction Health Risk Calculations

4th and St. John Student Housing, San Jose

DPM Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions			Modeled Area (m ²)	DPM Emission Rate (g/s/m ²)
				(lb/yr)	(lb/hr)	(g/s)		
2020	Construction	0.0201	CON_DPM	40.2	0.01224	1.54E-03	3,859	4.00E-07
2021	Construction	0.0316	CON_DPM	63.2	0.01924	2.42E-03	3,859	6.28E-07
2022	Construction	0.0045	CON_DPM	9.0	0.00273	3.44E-04	3,859	8.93E-08
Total		0.0562		112.4	0.0342	0.0043		

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

PM2.5 Fugitive Dust Emissions for Modeling

Construction Year	Activity	Area Source	Area (ton/year)	PM2.5 Emissions			Modeled Area (m ²)	PM2.5 Emission Rate (g/s/m ²)
				(lb/yr)	(lb/hr)	(g/s)		
2020	Construction	CON_FUG	0.00855	17.1	0.00521	6.56E-04	3,859	1.70E-07
2021	Construction	CON_FUG	0.01010	20.2	0.00615	7.75E-04	3,859	2.01E-07
2022	Construction	CON_FUG	0.00148	3.0	0.00090	1.14E-04	3,859	2.94E-08
Total			0.0201	40.3	0.0123	0.0015		

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction		DPM	Area	DPM Emissions			Modeled Area	DPM Emission Rate
Year	Activity	(ton/year)	Source	(lb/yr)	(lb/hr)	(g/s)	(m ²)	(g/s/m ²)
2020	Construction	0.0011	CON_DPM	2.1	0.00065	8.21E-05	3,859	2.13E-08
2021	Construction	0.0039	CON_DPM	7.8	0.00239	3.01E-04	3,859	7.79E-08
2022	Construction	0.0023	CON_DPM	4.6	0.00141	1.77E-04	3,859	4.59E-08
Total		0.0073		14.6	0.0044	0.0006		

Construction Hours

hr/day = 9 (7am - 4pm)
 days/yr = 365
 hours/year = 3285

PM2.5 Fugitive Dust Construction Emissions for Modeling - With Mitigation

Construction		Area	PM2.5 Emissions				Modeled Area	PM2.5 Emission Rate
Year	Activity	Source	(ton/year)	(lb/yr)	(lb/hr)	(g/s)	(m ²)	g/s/m ²
2020	Construction	CON_FUG	0.00443	8.9	0.00270	3.40E-04	3,859	8.81E-08
2021	Construction	CON_FUG	0.01010	20.2	0.00615	7.75E-04	3,859	2.01E-07
2022	Construction	CON_FUG	0.00148	3.0	0.00090	1.14E-04	3,859	2.94E-08
Total			0.0160	32.0	0.0097	0.0012		

Construction Hours

hr/day = 9 (7am - 4pm)
 days/yr = 365
 hours/year = 3285

**4th and St. John Student Housing, San Jose
Construction Health Impacts Summary**

Maximum Impacts at Construction MEI Location - Unmitigated

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu\text{g}/\text{m}^3$)
	Exhaust PM10/DPM ($\mu\text{g}/\text{m}^3$)	Fugitive PM2.5 ($\mu\text{g}/\text{m}^3$)	Child	Adult		
	2020	0.0951	0.0537	16.92	0.27	0.019
2021	0.1494	0.0635	24.53	0.43	0.030	0.19
2022	0.0212	0.0093	0.61	0.06	0.004	0.09
Total	-	-	42.1	0.8	-	-
Maximum	0.1494	0.0635	-	-	0.030	0.19

Maximum Impacts at Construction MEI Location - With Mitigation

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu\text{g}/\text{m}^3$)
	Exhaust PM10/DPM ($\mu\text{g}/\text{m}^3$)	Fugitive PM2.5 ($\mu\text{g}/\text{m}^3$)	Child	Adult		
	2020	0.0051	0.0197	0.90	0.01	0.001
2021	0.0185	0.0449	3.04	0.05	0.004	0.06
2022	0.0109	0.0066	0.31	0.03	0.002	0.02
Total	-	-	4.3	0.1	-	-
Maximum	0.0185	0.0449	-	-	0.004	0.06

4th and St. John Student Housing, San Jose
Maximum DPM Cancer Risk Calculations From Construction - Unmitigated Emissions
Impacts at Off-Site Receptors-6.1 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹
 ASF = Age sensitivity factor for specified age group
 ED = Exposure duration (years)
 AT = Averaging time for lifetime cancer risk (years)
 FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁻⁶

Where: C_{air} = concentration in air (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

Age -> Parameter	Infant/Child				Adult
	3rd Trimester	0 - 2	2 - 9	2 - 16	16 - 30
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum Risk		
			Year	Annual DPM Conc (ug/m3)	Age Sensitivity Factor		Modeled		Age Sensitivity Factor		Fugitive	Total	
							Year	Annual					
0	0.25	-0.25 - 0*	2020	0.0951	10	1.29	2020	0.0951	-	-			
1	1	0 - 1	2020	0.0951	10	15.62	2020	0.0951	1	0.27	0.019	0.0379	0.133
2	1	1 - 2	2021	0.1494	10	24.53	2021	0.1494	1	0.43	0.030	0.0449	0.194
3	1	2 - 3	2022	0.0212	3	0.61	2022	0.0212	1	0.06	0.004	0.0656	0.087
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00	0.03	0.07	0.19
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						42.05				0.76			

* Third trimester of pregnancy

4th and St. John Student Housing, San Jose
Maximum DPM Cancer Risk Calculations From Construction - Unmitigated Emissions
Impacts at Off-Site Receptors-1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹
 ASF = Age sensitivity factor for specified age group
 ED = Exposure duration (years)
 AT = Averaging time for lifetime cancer risk (years)
 FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁻⁶

Where: C_{air} = concentration in air (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

Age -> Parameter	Infant/Child				Adult
	3rd Trimester	0 - 2	2 - 9	2 - 16	16 - 30
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum Risk		
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor		HI	Fugitive PM2.5	Total PM2.5
			Year	Annual	Factor		Year	Annual	Factor				
0	0.25	-0.25 - 0*	2020	0.0706	10	0.96	2020	0.0706	-	-			
1	1	0 - 1	2020	0.0706	10	11.59	2020	0.0706	1	0.20	0.014	0.0537	0.124
2	1	1 - 2	2021	0.1108	10	18.20	2021	0.1108	1	0.32	0.022	0.0635	0.174
3	1	2 - 3	2022	0.0158	3	0.45	2022	0.0158	1	0.05	0.003	0.0093	0.025
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00	0.02	0.06	0.17
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						31.20				0.57			

* Third trimester of pregnancy

4th and St. John Student Housing, San Jose
Maximum DPM Cancer Risk Calculations From Construction - Unmitigated Emissions
Impacts at Off-Site Receptors-4.5 meter

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹
 ASF = Age sensitivity factor for specified age group
 ED = Exposure duration (years)
 AT = Averaging time for lifetime cancer risk (years)
 FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁻⁶

Where: C_{air} = concentration in air (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

Age -> Parameter	Infant/Child				Adult
	3rd Trimester	0 - 2	2 - 9	2 - 16	16 - 30
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum Risks		
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor		HI	Fugitive PM2.5	Total PM2.5
			Year	Annual	Factor		Year	Annual	Factor				
0	0.25	-0.25 - 0*	2020	0.0755	10	1.03	2020	0.0755	-	-			
1	1	0 - 1	2020	0.0755	10	12.40	2020	0.0755	1	0.22	0.015	0.0356	0.111
2	1	1 - 2	2021	0.1185	10	19.47	2021	0.1185	1	0.34	0.024	0.0421	0.161
3	1	2 - 3	2022	0.0169	3	0.48	2022	0.0169	1	0.05	0.003	0.0062	0.023
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00	0.02	0.04	0.16
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						33.4				0.61			

* Third trimester of pregnancy

4th and St. John Student Housing, San Jose
Maximum DPM Cancer Risk Calculations From Construction - Unmitigated Emissions
Impacts at Off-Site Receptors-9.1 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹
 ASF = Age sensitivity factor for specified age group
 ED = Exposure duration (years)
 AT = Averaging time for lifetime cancer risk (years)
 FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁻⁶

Where: C_{air} = concentration in air (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

Age -> Parameter	Infant/Child				Adult
	3rd Trimester	0 - 2	2 - 9	2 - 16	16 - 30
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum Risk		
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor		HI	Fugitive PM2.5	Total PM2.5
			Year	Annual	Factor		Year	Annual	Factor				
0	0.25	-0.25 - 0*	2020	0.0677	10	0.92	2020	0.0677	-	-			
1	1	0 - 1	2020	0.0677	10	11.12	2020	0.0677	1	0.19	0.014	0.0228	0.090
2	1	1 - 2	2021	0.1063	10	17.45	2021	0.1063	1	0.31	0.021	0.0270	0.133
3	1	2 - 3	2022	0.0151	3	0.43	2022	0.0151	1	0.04	0.003	0.0039	0.019
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00	0.02	0.03	0.13
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						29.92				0.54			

* Third trimester of pregnancy