1710 MOORPARK AVENUE AIR QUALITY & GREENHOUSE GAS ASSESSMENT

San José, California

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Introduction

The purpose of this report is to address air quality impacts and compute the greenhouse gas (GHG) emissions associated with the proposed supportive housing project located at 1710 Moorpark Avenue in San José, California. The air quality impacts and GHG emissions would be associated with the demolition of the existing uses, construction of 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 appropriate computer models. In addition, the potential construction community risk impact to nearby sensitive receptors and the impact of existing toxic air contaminant (TAC) sources affecting the proposed sensitive receptors were evaluated. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1] In addition, the project emissions are assessed against U.S. Department of Housing and Urban Development (HUD) thresholds for projects.

Project Description

The 0.8-acre project site is currently developed with a fellowship hall for the adjacent church and the associated parking lot. The project proposes to demolish the existing uses (the church will remain) and construct a five-story building consisting of 106 supportive housing units and 2 on-site manager units. The ground-floor parking garage could have 37 parking spaces. The supportive and affordable housing units would be occupied by underprivileged or homeless residents.

Setting

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

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduce lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels

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

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 complicated 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, infants and 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 closest sensitive receptors to the project site are the infants and children at the Neighborhood Christian Preschool to the east (6 weeks through 5 years old) and the senior residents at the Brooks House Senior Apartments to the south. There are additional residences southeast and north of the site at further distances. This project would also introduce new sensitive receptors (residents).

[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 Agencies

Federal Regulations

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

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of nitrogen oxides, or NO_X, and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified diesel particulate matter as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce PM and NO_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

[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.

vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the Federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

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

CARB has also adopted and implemented regulations to reduce DPM and NO_X emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NO_X exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent Federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NO_X.

Bay Area Air Quality Management District (BAAQMD)

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

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

The BAAQMD *California Environmental Quality Act (CEQA) Air Quality Guidelines*[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

[5] Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. May. (Updated May 2017)

assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of their *CEQA Guidelines*. In May 2011, the updated BAAQMD *CEQA Air Quality Guidelines* were amended to include a risk and hazards threshold for new receptors and modify procedures for assessing impacts related to risk and hazard impacts.

City 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:

Applicable Goals – Air Pollutant Emission Reduction

Goal MS-10 Minimize air pollutant emissions from new and existing development.

Applicable Policies – Air Pollutant Emission Reduction

MS-10.1 Assess projected air emissions from new development in conformance with the Bay Area Air Quality Management District (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.

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-11.2 For projects that emit toxic air contaminants, require project proponents to prepare health risk assessments in accordance with BAAQMD-recommended procedures as part of environmental review and employ effective mitigation to reduce possible health risks to a less than significant level. Alternatively, require new projects (such as, but not limited to, industrial, manufacturing, and processing facilities) that are sources of TACs to be located an adequate distance from residential areas and other sensitive receptors.

MS-11.4 Encourage the installation of appropriate air filtration at existing schools, residences, and other sensitive receptor uses adversely affected by pollution sources.

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.

Applicable Goals – Construction Air Emissions

Goal MS-13 Minimize air pollutant emissions during demolition and construction activities

Applicable Policies – Construction Air Emissions

MS-13.1 Include dust, particulate matter, and construction equipment exhaust control measures as conditions of approval for subdivision maps, site development and planned development permits, grading permits, and demolition permits. At minimum, conditions shall conform to construction mitigation measures recommended in the current BAAQMD CEQA Guidelines for the relevant project size and type.

Applicable Actions – Construction Air Emissions

MS-13.4 Adopt and periodically update dust, particulate, and exhaust control standard measures for demolition and grading activities to include on project plans as conditions of approval based upon construction mitigation measures in the BAAQMD CEQA Guidelines.

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.

Table 1. Community Risk Significance and GHG 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, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases. *BAAQMD does not have a recommended post-2020 GHG threshold.			

NEPA/HUD Significance Thresholds

The Federal Clean Air Act governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act. At the Federal level, the United States Environmental Protection Agency (USEPA) administers the Clean Air Act. The California Clean Air Act is administered by the CARB at the State level and by the Air Quality Management Districts at the regional and local levels. BAAQMD regulates air quality at the regional level, which includes the nine-county Bay Area.

The federal Clean Air Act requires each state to identify areas that have ambient air quality in violation of federal standards. States are required to develop, adopt, and implement a state implementation plan (SIP) to achieve, maintain, and enforce federal ambient air quality standards in these nonattainment areas. SIP elements are developed on a pollutant-by-pollutant basis whenever one or more air quality standards are being violated. In California, local and regional air pollution control agencies have primary responsibility for developing SIPs, generally in coordination with local and regional land use and transportation planning agencies. BAAQMD is the responsible regional air pollution control agency in the San Francisco Bay Area.

An area's compliance with national ambient air quality standards under the Clean Air Act is categorized as nonattainment, attainment (better than national standards), unclassifiable, or attainment/cannot be classified. The unclassified designation includes attainment areas that comply with federal standards, as well as areas for which monitoring data are lacking. Unclassified areas are treated as attainment areas for most regulatory purposes. Simple attainment designations generally are used only for areas that transition from nonattainment status to attainment status. Areas that have been reclassified from nonattainment to attainment of federal air quality standards are automatically considered maintenance areas, although this designation is seldom noted in status listings. The San Francisco Bay Area is designated as nonattainment for the federal 8-hour ozone standard and the 24-hour $PM_{2.5}$ standard. The San Francisco Bay Area is designated as attainment or unclassified for the other national ambient air quality standards.

With respect to the state ambient air quality standards, California classifies areas as attainment, nonattainment, nonattainment-transitional, or unclassified. The San Francisco Bay Area is designated as nonattainment for the state ozone, inhalable particulate matter (PM_{10}), and $PM_{2.5}$ standards and as attainment or unclassified for the other state ambient air quality standards. The predominant regulation that guides assessment of air quality impacts of federal actions is the General Conformity Rule, established under the Clean Air Act (Section 176(c)(4)). The General Conformity Rule ensures that the actions taken by federal agencies in nonattainment and maintenance areas do not interfere with a state's plans to meet national standards for air quality. The project area is located within the San Francisco Bay Area Air Basin, which is designated as a nonattainment area for the federal 8-hour ozone standard and the federal $PM_{2.5}$ standard. The air basin is designated as a maintenance area with respect to the federal carbon monoxide (CO) standards.

In keeping with the General Conformity Rule process, this assessment applies the appropriate *de minimis* thresholds of the Rule as they apply to the San Francisco Bay Area Air Basin for ozone precursors, $PM_{2.5}$, and CO. The *de minimis* thresholds for these three pollutants in the San Francisco Bay Area Air Basin are 100 tons per year for each pollutant or precursor pollutant (i.e., NOx, ROG, PM_{10} and $PM_{2.5}$).

Air Quality Impacts and Mitigation Measures

Impact: Conflict with or obstruct implementation of the applicable air quality plan?

BAAQMD is the regional agency responsible for overseeing compliance with State and Federal laws, regulations, and programs within the San Francisco Bay Area Air Basin (SFBAAB). BAAQMD, with assistance from the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), has prepared and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2017 Clean Air Plan*.[6] The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which in turn affects region-wide emissions of air pollutants and GHGs.

The 2017 Clean Air Plan, adopted by BAAQMD in April 2017, includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. Plans must show consistency with the control measures listed within the Clean Air Plan. At the project-level, there are no consistency measures or thresholds. The proposed project would not conflict with the latest Clean Air planning efforts since 1) project would have emissions below the BAAQMD thresholds (see below), 2) the project would be considered urban infill, and 3) the project would be located near transit with regional connections.

Impact: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

The Bay Area is considered a non-attainment area for ground-level O_3 and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM_{10} under the California Clean Air Act, but not the federal act. The area has attained both State and Federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for O_3, $PM_{2.5}$ and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for O_3 precursor pollutants (ROG and NOx), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

<u>Construction Period Emissions</u>

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CARB EMission FACtors 2017 (EMFAC2017) model was used to predict

[6] Bay Area Air Quality Management District (BAAQMD), 2017. *Final 2017 Clean Air Plan.*

emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks.[7] The model output from CalEEMod along with construction inputs are included as *Attachment 2* and EMFAC2017 vehicle emissions modeling outputs are included in *Attachment 3*.

Land Use Inputs

The proposed mixed-use project land uses were input into CalEEMod as follows:

- 106 dwelling units and 62,305-sf entered as "Congregate Care (Assisted Living)" on 0.8-acres. The congregate care land use was used as it was most similar to a supportive/homeless housing land use,
- 2 dwelling units and 2,000-sf entered as "Apartments Mid-Rise", and
- 37 spaces and 14,669-sf entered as "Enclosed Parking with Elevator".

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction build-out scenario, including equipment list and schedule, were based on construction information provided by the project applicant.

The CalEEMod construction equipment worksheet provided by the applicant included the schedule for each phase. Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays was provided. Since different equipment would have different estimates of the working days per phase, the hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the total number of days in that phase. The construction schedule assumed that the earliest possible start date would be January 2021 and the project would be built out over a period of approximately 15 months, or 325 construction workdays. The first full year of operation was assumed to be 2023.

Construction Truck Traffic Emissions

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2014 motor vehicle emission factor model. This model has been superseded by the EMFAC2017 model; however, CalEEMod has not been updated to include EMFAC2017. Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the estimate of demolition material to be exported, soil material imported and/or exported to the site, and the estimate of cement and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition were estimated from the provided demolition tonnage by assuming each truck

[7] See CARB's EMFAC2017 Web Database at https://www.arb.ca.gov/emfac/2017/

could carry 10 tons per load. The number of concrete and asphalt total round haul trips were provided for the project and converted to total one-way trips, assuming two trips per delivery.

The construction traffic information was combined with EMFAC2017 motor vehicle emissions factors. EMFAC2017 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod default assumptions, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including cement trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for hauling (demolition material export and soil import/export). Since CalEEMod does not address cement or asphalt trucks, these were treated as vendor travel distances. Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. On-road emission rates from calendar year 2021-2022 for Santa Clara County were used. Table 2 provides the traffic inputs that were combined with the EMFAC2017 emission factors to compute vehicle emissions.

Table 2. Construction Traffic Data Used for EMFAC2017 Model Runs

CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Total Worker[1]	Total Vendor[1]	Total Haul[2]	
Vehicle mix[1]	71.5% LDA 6.4% LDT1 22.1% LDT2	38.1% MHDT 61.9% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	20.0 (Demo/Soil) 7.3 (Cement/Asphalt)	5 Minute Truck Idle Time
Demolition	260	-	131	9,026-sf of demolition hauling, 450 tons of pavement demolition
Site Preparation	150	-	-	
Grading	390	-	19	150 CY Export
Trenching	100	-	-	
Building Construction	15,120	2,520	562	281 Cement Roundtrips
Architectural Coating	1,020	-	-	
Paving	300	-	71	296 CY Asphalt

Notes: [1] Based on 2021-2022 EMFAC2017 light-duty vehicle fleet mix for Santa Clara County.
[2] Includes demolition and grading trips estimated by CalEEMod based on amount of material to be removed.

Summary of Computed Construction Period Emissions

Annual emissions were predicted using CalEEMod. Average daily emissions were computed by dividing the total construction emissions by the number of construction days (325 construction workdays). Table 3 shows average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 3, predicted construction period emissions would not exceed the BAAQMD significance thresholds. In addition, the calculated construction period emissions would not exceed the NEPA de minimis thresholds.

Table 3. Construction Period Emissions

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total construction emissions (tons)	0.6 tons	1.5 tons	0.1 tons	0.1 tons
NEPA De Minimis Thresholds (tons/year)	*100 tons*	*100 tons*	*100 tons*	*100 tons*
Exceed Threshold?	No	No	No	No
Average daily emissions (pounds)[1]	3.8 lbs./day	9.3 lbs./day	0.5 lbs./day	0.4 lbs./day
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

Notes: [1]Assumes 325 workdays.

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

***Mitigation Measure AQ-1:* Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. 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 Mitigation Measure AQ-1

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.

Operational Period Emissions

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

Land Uses

The project land uses were entered into 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 full year of operation would be 2023 if construction begins in 2021. 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. Therefore, the project-specific daily trip generation rates for senior housing (supportive housing) and multi-family housing land uses was provided by the traffic consultant was entered into the model.[8] 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 to the default weekday rate. The default trip lengths and trip types specified by CalEEMod were used.

EMFAC2017 Adjustment

As previously described, the vehicle emission factors and fleet mix used in CalEEMod are based on EMFAC2014, which is an older CARB emission model for on-road and off-road mobile sources. Since the release of CalEEMod Version 2016.3.2, a new emission model has been produced by CARB. EMFAC2017 became available for use in March 2018 and approved by the EPA in August 2019. It includes the latest data on California's car and truck fleets and travel activity. Additionally, CARB has recently released EMFAC off-model adjustment factors to account for the Safer Affordable Efficient (SAFE) Vehicle Rule Part One.[9,10] The SAFE vehicle Rule Part One revoked California's authority to set its own GHG emission standards and set zero emission vehicle mandates in California. As a result of this ruling, mobile criteria pollutant emissions and GHG emissions (i.e., CO_2) would increase for light-duty vehicles. Therefore, the CalEEMod vehicle emission factors and fleet mix were updated with the emission rates and fleet mix from EMFAC2017, which were adjusted with the CARB EMFAC off-model adjustment factors. On-road emission rates for Santa Clara County, calendar year 2023 were used. More details about the updates in emissions calculation methodologies and data are available in the EMFAC2017 Technical Support documents.[11]

Energy

CalEEMod defaults for energy use were used, which include the 2016 Title 24 Building Standards. GHG emissions modeling included the indirect emissions from electricity consumption. The electricity produced emission rate was then modified in CalEEMod. CalEEMod has a default emission factor of 641.3 pounds of CO_2 per megawatt of electricity produced, which is based on Pacific Gas and Electric's (PG&E) 2008 emissions rate. However, PG&E published in 2019 emissions rates for 2010 through 2017, which showed the emission rate for delivered electricity had been reduced to 210 pounds CO_2 per megawatt of electricity delivered in the year 2017.[12] However, the project would use electricity supplied by San Jose Clean Energy (SJCE) that will be 100-percent carbon free by 2021 before the project becomes operational.[13]

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[8] Hexagon Transportation Consultants, Inc., *Trip Generation and Parking Study for the Proposed Supportive Housing Project Located at 1710 Moorpark Avenue in San Jose, California*, March 13, 2020.

[9] California Air Resource Board, 2019. *EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One*. November. Web: https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf

[10] California Air Resource Board, 2020. *EMFAC Off-Model Adjustment Factors for Carbon Dioxide ($CO_2$0 Emissions to Accounts for the SAFE Vehicles Rule Part One and the Final SAFE Rule*. June. Web: https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf?utm_medium=email&utm_source=govdelivery

[11] See CARB 2018: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac

[12] PG&E, 2019. *Corporate Responsibility and Sustainability Report*. Web: http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf

[13] Kerrie Romanow and Rosalynn Hughey, 2019. *Building Reach Code for New Construction Memorandum*. August. Web: https://sanjose.legistar.com/LegislationDetail.aspx?ID=4090015&GUID=278596A7-1A2B-4248-B794-7A34E2279E85

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 natural gas per BAAQMD Regulation 6, Rule 3, which requires that new building construction not install a wood-burning device (effective as of November 1, 2016).[14]

Existing Uses

The existing land uses on the project site include the adjacent church's one-story, approximately 9,000-sf fellowship hall and its associate parking lot. These uses produce low operational and traffic emissions which would not considerably offset emissions from the proposed project. Therefore, the emissions from the existing uses were not considered, nor used to offset proposed project conditions.

Summary of Computed Operational Period Emissions

Annual emissions were predicted using CalEEMod and daily emissions were estimating assuming 365 days of operation. Table 4 shows average daily emissions of ROG, NO_X, total PM_{10}, and total $PM_{2.5}$ during operation of the project. The operational period emissions would not exceed the BAAQMD significance thresholds. In addition, the calculated operational period emissions would not exceed the NEPA de minimis thresholds.

Table 4. Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2023 Project Operational Emissions (*tons/year*)	0.5 tons	0.3 tons	0.3 tons	0.1 tons
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
NEPA De Minimis Thresholds (tons/year)	*100 tons*	*100 tons*	*100 tons*	*100 tons*
Exceed Thresholds?	No	No	No	No
2023 Project Operational Emissions (*lbs./day*)[1]	2.6 lbs.	1.5 lbs.	1.9 lbs.	0.5 lbs.
BAAQMD Thresholds (lbs./day)	*54 lbs.*	*54 lbs.*	*82 lbs.*	*54 lbs.*
Exceed Threshold?	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 source of TACs during construction and operation with the potential to adversely affect existing sensitive receptors in the project vicinity or by introducing a new sensitive receptor, such as residents, in proximity to an existing source of TACs.

Temporary project construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors. A construction community health risk

[14] Bay Area Air Quality Management District,

assessment was prepared to address project construction impacts on the surrounding off-site sensitive receptors. 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. Emissions from automobile traffic generated by the project would be spread out over a broad geographical area and not localized.

This project would introduce new sensitive receptors. There are several existing sources of TACs and localized air pollutants in the vicinity of the project. The impact of the existing sources of TAC upon the existing sensitive receptors and new incoming sensitive receptors was assessed.

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. This involved the modeling of TAC and $PM_{2.5}$ emissions, dispersion modeling and cancer risk computations. The methodology for computing community risks impacts is contained in *Attachment 1*.

Community Risks from Project Construction

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 issue 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 $PM_{2.5}$.[15] 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 PM_{10} 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 0.0691 tons (138 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 0.0266 tons (53 pounds) for the overall construction period.

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

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors (residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[16] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions. Combustion equipment exhaust emissions were modeled as a series of point sources with a nine-foot release height (construction equipment exhaust stack height)[17] placed at 16-feet (5-meter) intervals throughout the construction site. This resulted in 108 individual point sources being used to represent mobile equipment DPM exhaust emissions in the construction area, with DPM emissions occurring throughout the project construction site. Construction fugitive $PM_{2.5}$ dust emissions were modeled as an area source encompassing the entire construction site with a near ground level release height of two meters. Construction emissions were modeled as occurring daily between 7:00 a.m. to 4:00 p.m. when the majority of construction activity would occur.

The modeling used a five-year data set (2013-2017) of hourly meteorological data from the San José International Airport that was prepared for use with the AERMOD model by BAAQMD. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2021-2022 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 5 feet (1.5 meters), 15 feet (4.5 meters), and 25 feet (7.6 meters) were used to represent the breathing height on the first through third floors of nearby single- and multi-family residences.[18] A receptor height of 3.3 feet (1.0 meter) and 13 feet (4 meters) was used for modeling impacts to children on the first and second floors at the preschool.

Construction Impacts

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 1) 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. *Attachment 3* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

Results of this assessment indicated that the construction MEI was located on the first floor (3.3 feet above ground) with the southwest corner of the preschool to the east of the project site (as seen in Figure 1). The maximum increased cancer risks from construction exceeds its BAAQMD

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

[17] California Air Resource Board, 2007. *Proposed Regulation for In-Use Off-Road Diesel Vehicles, Appendix D: Health Risk Methodology*. April. Web: https://ww3.arb.ca.gov/regact/2007/ordiesl07/ordiesl07.htm

[18] Bay Area Air Quality Management District, 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0. May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

single-source thresholds of greater than 10.0 per million. The maximum $PM_{2.5}$ concentration and HI from construction do not exceed their respective BAAQMD single-source thresholds of greater than 0.3 µg/m^3 for $PM_{2.5}$ concentration and greater than 1.0 for HI. Table 5 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities affecting the MEI.

Table 5. Construction Risk Impacts at the Off-site School MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ (µg/m^3)	Hazard Index
Project Construction	Unmitigated Mitigated*	**75.2 (infant)** 9.3 (infant)	0.24 0.04	0.02 <0.01
	BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	Unmitigated Mitigated*	***Yes*** *No*	*No* *No*	*No* *No*

* Construction equipment with Tier 4 Final engines and electric generators, air compressors, and welders as Mitigation Measures.

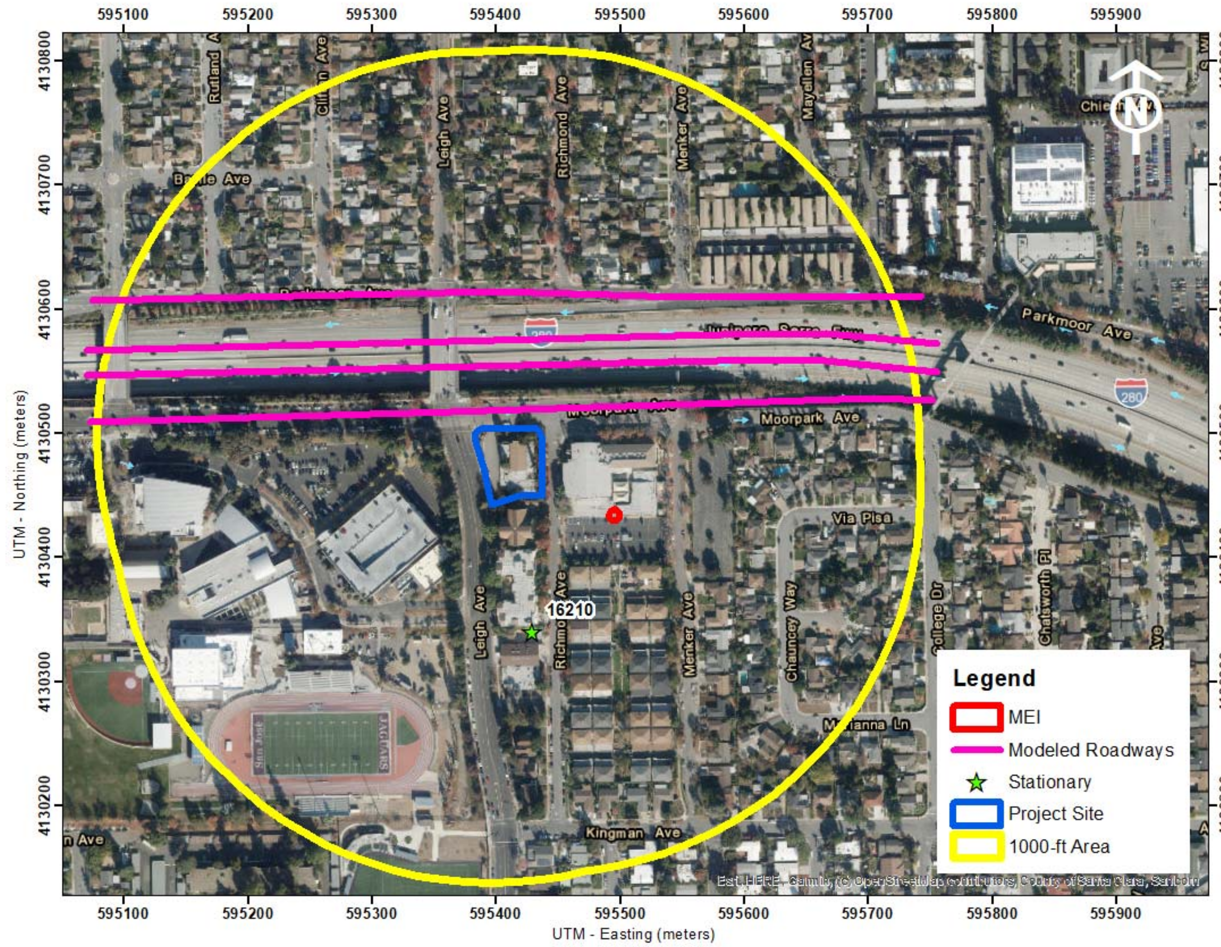
Figure 1. Project Construction Site, Point Source Locations, Locations of Off-Site Sensitive Receptors, and TAC Impacts

Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum $PM_{2.5}$ concentrations associated with construction activities at the nearby residences and Brooks House senior apartments. The maximum increased cancer risks were adjusted using infant and child exposure parameters at the nearby residences and adult only exposure parameters at the senior apartments. Results of this assessment indicated that the maximum cancer risks, without any mitigation or construction emission controls, would be 13.7 per million for infant and child exposure at the nearby residences and 0.1 for adult exposure at the senior apartments. The maximum-modeled annual $PM_{2.5}$ concentration, which is based on combined exhausted and fugitive dust emissions, would be 0.12 $\mu g/m^3$ at the nearby residences and 0.07 $\mu g/m^3$ at the senior apartments. The HI, based on the DPM concentration, would be 0.01 at the nearby residences and 0.01 at the senior apartments. The unmitigated cancer risk value at the nearby residences does exceed the BAAQMD single-source significance threshold. However, with mitigation, the cancer risk value would be 1.6 per million and would no longer exceed the single-source significance threshold. The unmitigated cancer risk at the senior apartments, and the $PM_{2.5}$ concentration and HI, unmitigated and mitigated, at the nearby residences and senior apartments do not exceed their respective BAAQMD single-source significance thresholds.

Combined Impact of All TAC Sources on the Off-Site Construction MEI

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of the project site (i.e. influence area). These sources include railroads, freeways or highways, busy surface streets, and stationary sources identified by BAAQMD. A review of the project area indicates that traffic on Interstate 280 (I-280), Moorpark Avenue, and Parkmoor Avenue has an average daily traffic (ADT) of over 10,000 vehicles. All other roadways within the area are assumed to have an ADT that is less than 10,000 vehicles. One stationary source was identified within the 1,000-foot influence area using the BAAQMD's stationary source website map. Figure 2 shows the sources affecting the project site. Community risk impacts from these sources upon the MEI are reported in Table 6. Details of the modeling and community risk calculations are included in *Attachment 5.*

Figure 2. Project Site, MEI, Modeled Local Roadways, and Nearby TAC Sources



Highways – I-280

The project site and construction MEI are located near I-280. A refined analysis of the impacts of TACs and $PM_{2.5}$ to the project site and MEI receptors are necessary to evaluate potential cancer risks and $PM_{2.5}$ concentrations from I-280. A review of the traffic information reported by the California Department of Transportation (Caltrans) indicates that I-280 traffic includes 171,600 vehicles per day (based on an annual average)[19] that are about 3.1 percent trucks, of which 1.6 percent are considered diesel heavy duty trucks and 1.5 percent are medium duty trucks[20].

Traffic Emissions Modeling

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on I-280 using the Caltrans version of the CARB EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (TOG), running evaporative losses for TOG, and tire and brake wear

[19] Caltrans. 2019. *2018 Traffic Volumes California State Highways.*

[20] Caltrans. 2020. *2018 Annual Average Daily Truck Traffic on the California State Highway System*

and fugitive road dust for $PM_{2.5}$. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2017 emissions data. Inputs to the model include region (i.e., Santa Clara County), type of road, traffic mix assigned by CT-EMFAC2017 for the county and adjusted for the local truck mix on I-280, year of analysis, and season.

Project operation was assumed to occur in 2023 or later. In order to estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating increased cancer risks to the MEI from traffic on I-280, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2023 using the calculated mix of cars and trucks on I-280. 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 CT-EMFAC2017. Year 2023 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated (30 years), since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions will decrease in the future. Average daily traffic volumes and truck percentages were based on Caltrans data for I-280. Traffic volumes were assumed to increase 1 percent per year. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[21] which were then applied to the average daily traffic volumes to obtain estimated hourly traffic volumes and emissions for I-280.

For all hours of the day, other than during peak a.m. and p.m. periods, an average speed of 65 mph was assumed for all vehicles. Based on traffic data from the Santa Clara Valley Transportation Authority's 2017 Monitoring and Conformance Report, traffic speeds during the peak a.m. and p.m. periods were identified.[22] For a 2-hour period during the peak a.m. period, an average travel speed of 10 mph was used for eastbound traffic and an average speed of 60 mph was used for westbound traffic. For the peak p.m. period, an average travel speed of 60 mph was used for eastbound traffic and an average travel speed of 10 mph was used for westbound traffic.

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for future traffic on I-280and using these emissions with an air quality dispersion model to calculate TAC and $PM_{2.5}$ concentrations at the project MEI receptor locations. Maximum increased lifetime cancer risks and annual $PM_{2.5}$ concentrations for the receptors were then computed using modeled TAC and $PM_{2.5}$ concentrations and BAAQMD methods and exposure parameters described in *Attachment 1*.

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the U.S. EPA AERMOD dispersion model, which is recommended by the BAAQMD for this type of analysis. Eastbound and westbound traffic on I-280 within about 1,000 feet of the project site was evaluated with the model. Emissions from vehicle traffic were modeled in AERMOD using a series of volume sources along a line (line volume sources), with line segments used to represent eastbound and westbound

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[21] The Burden output from EMFAC2007, CARB's previous version of the EMFAC model, was used for this since the current web-based version of EMFAC2017 does not include Burden type output with hour by hour traffic volume information.
[22] Santa Clara Valley Transportation Authority. *2017 CMP Monitoring and Conformance Report April 23, 2018.*

travel lanes on I-280. The modeling used a five-year data set (2013-2017) of hourly meteorological data from the San José Airport prepared by the BAAQMD for use with the AERMOD model. Other inputs to the model included road geometry and elevations, hourly traffic emissions, and receptor locations and heights.

Computed Cancer and Non-Cancer Health Impacts

The maximum increased cancer risk at the construction MEI receptor would be 5.7 in one million. The maximum $PM_{2.5}$ concentration at the MEI receptor would be 0.24 $\mu g/m^3$ and the HI at the MEI would be less than 0.01. Figure 2 shows the roadway links used for the modeling and MEI location where concentrations were calculated. The risk impacts from the highway on the construction MEI is shown in Table 6. Details of the emission calculations, dispersion modeling and cancer risk calculations for the receptors with the maximum cancer risk from I-280 traffic are provided in *Attachment 5.*

Local Roadways – Moorpark Avenue and Parkmoor Avenue

Moorpark Avenue and Parkmoor Avenue are located near the project site and construction MEI. Traffic on Moorpark Avenue and Parkmoor Avenue is a source of TACs that could adversely affect sensitive receptors at the project site and MEI. This assessment was conducted following guidance provided by the BAAQMD and OEHHA to analyze potential community health risk impacts at the project site and MEI from nearby sources of TAC emissions.

Potential community risk impacts from Moorpark Avenue and Parkmoor Avenue traffic TAC emissions to sensitive receptors at the project site and MEI were evaluated. This analysis involved the development of DPM, total organic gases (TOG), and $PM_{2.5}$ emissions for project traffic on Moorpark Avenue and Parkmoor Avenue and using these emissions with an air quality dispersion model to calculate TAC and $PM_{2.5}$ concentrations at project site and MEIs receptor locations. Increased cancer risks, non-cancer health effects represented by the HI, and the increase in annual $PM_{2.5}$ concentrations were then computed using the modeled TAC and $PM_{2.5}$ concentrations and BAAQMD methods and exposure parameters described in *Attachment 1*.

Busy roadways are a source of TAC emissions that could affect new sensitive receptors at the project site and at the MEI. Moorpark Avenue and Parkmoor Avenue are busy arterial roadways near the project site and MEI. In the vicinity of the project site, using traffic volumes with provided by the Santa Clara County Roadbook[23] and assuming a 1 percent per year increase, Moorpark Avenue has an estimated ADT volume of 21,470 vehicles and Parkmoor Avenue has an estimated ADT volume of 11,610 vehicles. Because these traffic volumes are greater than an ADT of 10,000, a refined analysis of Moorpark Avenue and Parkmoor Avenue to assess potential impacts to the project and MEI was conducted.

Traffic Emissions

DPM, TOG, and $PM_{2.5}$ emissions from traffic on Moorpark Avenue and Parkmoor Avenue in the project and MEI areas were calculated using the CT-EMFAC2017 model and local roadway traffic

[23] The County of Santa Clara, *Official County Road Book 2017*, July 2017.

volumes. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM.

Emission processes modeled with CT-EMFAC2017 include running exhaust for DPM, $PM_{2.5}$ and TOG, running evaporative losses for TOG, and tire and brake wear and fugitive road dust for $PM_{2.5}$. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2017 emissions data. Inputs to the model include region (i.e., Santa Clara County), type of road, and traffic mix assigned by CT-EMFAC2017 for the county. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[24] which were then applied to Moorpark Avenue and Parkmoor Avenue traffic volumes to obtain estimated hourly traffic volumes and emissions. For all hours of the day an average speed of 30 mph was assumed for all vehicles.

In order to estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating the increased cancer risks for sensitive receptors at the MEI and project site, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2023 (project operational year). Year 2023 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated.

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the EPA AERMOD air quality dispersion model, which is recommended by the BAAQMD for this type of analysis.[25] TAC and $PM_{2.5}$ emissions from traffic on Moorpark Avenue and Parkmoor Avenue within 1,000 feet of the project site were evaluated. Vehicle traffic on the roadways was modeled using a series of adjacent volume sources along a line (line volume sources); with line segments used for the travel directions on Moorpark Avenue and Parkmoor Avenue. A 5-year data set (2013-2017) of hourly meteorological data from the San Jose Airport was used for the modeling. Other inputs to the model included road geometries and elevations, hourly traffic emissions, and receptor locations. Annual TAC and $PM_{2.5}$ concentrations for 2023 from traffic on Moorpark Avenue and Parkmoor Avenue were calculated using the model. Concentrations were calculated at the construction MEI with receptor heights of 3.3 feet (1 meter) to represent the breathing heights of infants/children at the preschool on the first floor.

Computed Cancer and Non-Cancer Health Impacts

The maximum increased cancer risk at the construction MEI receptor would be 1.1 in one million from Moorpark Avenue and 0.3 in one million from Parkmoor Avenue. The maximum $PM_{2.5}$ concentration at the MEI receptor would be 0.07 $\mu g/m^3$ from Moorpark Avenue and 0.02 $\mu g/m^3$ from Parkmoor Avenue. The HI at the MEI would be less than 0.01 from both roadways. Figure 2 shows the roadway links used for the modeling and MEI location where concentrations were calculated. The risk impacts from Moorpark Avenue and Parkmoor Avenue on the construction

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[24] The Burden output from EMFAC2007, a prior version of CARB's EMFAC model, was used for this since the current web-based version of EMFAC2017 does not include Burden type output with hour by hour traffic volume information.

[25] BAAQMD. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012

MEI are shown in Table 6. Details of the emission calculations, dispersion modeling and cancer risk calculations for the receptors with the maximum cancer risk from Moorpark Avenue and Parkmoor Avenue traffic are provided in *Attachment 5.*

Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2018* GIS website,[26] which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for new OEHHA guidance. The one stationary source near the project site had risk values on the website, so a stationary source information request was not required to be submitted to BAAQMD. The website provided risk values which were then adjusted for distance using the appropriate BAAQMD *Distance Multiplier Tool for Diesel Internal Combustion Engines, Gasoline Dispensing Facilities (GDFs), or Generic Sources*. The one stationary source, Plant #16210, was identified as diesel generator. Community risk impacts from the stationary sources upon the project are reported in Table 6.

Combined Community Risk at Off-site Construction MEI

Table 6 reports both the project and cumulative community risk impacts at the sensitive receptor most affected by construction (i.e. the MEI). Without mitigation, the project's community risk from project construction activities would exceed the single-source maximum increased cancer risk of 10.0 per million. The combined annual Hazard risk values, which includes unmitigated and mitigated, would not exceed its respective cumulative thresholds. The incorporation of *Mitigation Measures AQ-1 and AQ-2* would reduce these levels to below the significance thresholds.

Table 6. Cumulative Community Risk Impacts from Combined TAC Sources at MEI

Source		Maximum Cancer Risk (per million)	$PM_{2.5}$ concentration ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	Unmitigated Mitigated	**75.2 (infant)** 9.3 (infant)	0.24 0.04	0.02 <0.01
BAAQMD Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	Unmitigated Mitigated	***Yes*** *No*	*No* *No*	*No* *No*
Cumulative Sources				
I-280		5.7	0.24	<0.01
Moorpark Avenue, ADT 21,470		1.1	0.07	<0.01
Parkmoor Avenue, ADT 11,610		0.3	0.02	<0.01
Plant #16210 (Generator)		0.2	--	--
Combined Sources	*Unmitigated* *Mitigated*	82.6 (infant) 16.6 (infant)	0.57 0.37	<0.05 <0.04
BAAQMD Cumulative Source Threshold		***>100***	***>0.8***	***>10.0***
Exceed Threshold?	Unmitigated Mitigated	*No* *No*	*No* *No*	*No* *No*

[26] BAAQMD, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

***Mitigation Measure AQ-2*: 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 onsite to construct the project would achieve a fleet-wide average 87-percent reduction in DPM 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. Where Tier 4 equipment is not available, exceptions could be made for equipment that includes CARB-certified Level 3 Diesel Particulate Filters or equivalent. Equipment that is electrically powered or uses non-diesel fuels would also meet this requirement.

- Install electric line power during early construction phases to avoid use of diesel generators, compressors, and welders.

Effectiveness of Mitigation Measure AQ-2

CalEEMod was used to compute emissions associated with his mitigation measure assuming that all equipment met U.S. EPA Tier 4 interim engines standards and generators, air compressors, and welders were electrified. The computed maximum increased residential cancer risk from construction, assuming infant exposure at the preschool, would be 9.2 in one million or less. With the implementation of *Mitigation Measure AQ-1 and AQ-2*, risk levels would not exceed the BAAQMD significance thresholds.

Non-CEQA Impact: Exposure of Project Residents to Existing TACs Sources

Operational Community Health Risk Impacts – New Project Residences

In addition to evaluating health impact from project construction, a health risk assessment was completed to assess the impact that existing TAC sources would have on the new proposed sensitive receptors (residents) that the project would introduce. The same TAC sources identified above were used in this health risk assessment.[27]

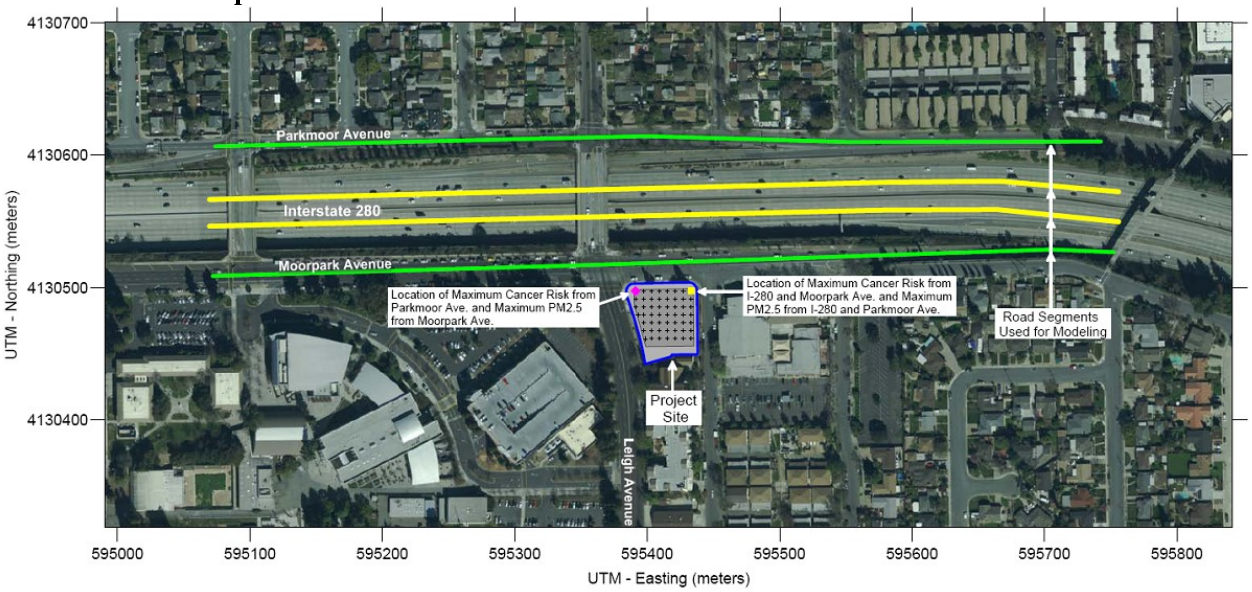
Highways – I-280

The highway analysis for the new project sensitive receptors was conducted in the same manner as described above for the construction MEI. The project set of receptors placed within the project residential area are spaced every 16 feet (5 meters). Project residential units would be located second through fifth floor levels. Highway impacts were modeled at receptor heights of 17 feet (5.3 meters), 28 feet (8.7 meters), and 38 feet (11.7 meters) representing sensitive receptors on the second through fourth floors. Project sensitive receptors higher than the fourth floor would have highway impacts less than those on the fourth floor. The closest project site boundary is about 125 feet south from I-280. Figure 3 shows the roadway links and onsite receptor locations used in the modeling.

The risk impacts from the highway on the project receptors are discussed in Table 7. The maximum impacts occurred at a receptor height of 17 feet (second floor level) at the residential units closest to I-280. The maximum increased cancer risk at the project site was computed as 11.8 in one million. The location of maximum cancer risks is shown in Figure 3. Increased cancer risks at residences on floor levels above the second floor would be less than the maximum cancer risk on the second-floor level. The maximum $PM_{2.5}$ concentration at the project site was 0.51 $\mu g/m^3$, occurring at the same receptor that had the maximum cancer risk on the second-floor level. The maximum predicted annual DPM concentration from I-280 traffic was 0.0115 $\mu g/m^3$. This concentration is much lower than the REL and the HI would be less than 0.01. The cancer risk and $PM_{2.5}$ concentrations from I-280 would exceed BAAQMD's single-source thresholds at the project site.

[27] We note that to the extent this analysis considers *existing* air quality issues in relation to the impact on *future residents* of the Project, it does so for informational purposes only pursuant to the judicial decisions in *CBIA v. BAAQMD* (2015) 62 Cal.4th 369, 386 and *Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473, which confirm that the impacts of the environment on a project are excluded from CEQA unless the project itself "exacerbates" such impacts.

Figure 3. Project Site and Onsite Residential Receptors, I-280, Moorpark Ave, and Parkmoor Ave Road Segments Evaluated, and Location of Maximum TAC Impacts



Local Roadways – Moorpark Avenue and Parkmoor Avenue

The roadway analysis for the project residents was conducted in the same manner as described above for the construction MEI. TAC and $PM_{2.5}$ concentrations were calculated at the same receptors used in the highway modeling The portions Moorpark Avenue and Parkmoor Avenue included in the modeling are shown in Figure 3 along with the project site, proposed project building, and receptor locations where impacts were modeled.

Maximum increased cancer risks were calculated for the residents at the project site using the maximum modeled TAC concentrations. A 30-year exposure period was used in calculating cancer risks assuming the residents would include infants/children and were assumed to be in the new building area for 24 hours per day for 350 days per year. The highest impacts from local roadways occurred at the second-floor receptors at the residential units closest to the roadways on the north side of the project site. Cancer risks associated with Moorpark Avenue and Parkmoor Avenue are greatest closest to Moorpark Avenue and decrease with distance from the roads.

The maximum increased cancer risk was computed as 3.4 in one million from Moorpark Avenue and 0.6 in one million from Parkmoor Avenue. The maximum average annual $PM_{2.5}$ concentration was 0.20 µg/m^3 from Moorpark Avenue and 0.04 µg/m^3 from Parkmoor Avenue. For non-cancer health effects from DPM, the maximum chronic HI was calculated as significantly less than 0.01 from both Moorpark Avenue and Parkmoor Avenue. The roadways' community risk impacts at the project site are shown in Table 7.

Stationary Sources

The stationary source screening analysis for the new project sensitive receptors was conducted in the same manner as described above for the construction MEI. Table 7 shows the health risk assessment results from the stationary sources.

Cumulative Community Health Risk at Project Site

Community risk impacts from the combined sources upon the project site are reported in Table 7. The TAC sources are compared against the BAAQMD single-source threshold and then combined and compared against the BAAQMD cumulative-source threshold. As shown, the HI from the nearby sources do not exceed their single-source or cumulative-source thresholds. However, cancer risk and annual $PM_{2.5}$ concentrations are estimated to exceed the single-source threshold, but not the cumulative-source threshold, due to emissions from I-280.

Table 7. Impacts from Combined Sources to Project Site Receptors

Source	Maximum Cancer Risk (per million)	Maximum Annual $PM_{2.5}$ ($\mu g/m^3$)	Maximum Hazard Index
I-280*	**11.8**	**0.51**	<0.01
Moorpark Avenue*	3.4	0.20	<0.01
Parkmoor Avenue*	0.6	0.04	<0.01
Plant #16210 (Generator)	0.2	--	--
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	***Yes***	***Yes***	*No*
Cumulative Total	16.0	0.75	<0.03
BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Exceed Threshold?	*No*	*No*	*No*

*Receptor on 2nd floor

Recommended Design Features to Reduce Project Receptor Exposure

Filtration in ventilation systems at the project site would be recommended to reduce the level of harmful pollutants to below the significant thresholds. The significant exposure for new project receptors is judged by two effects: (1) increased cancer risk, and (2) annual $PM_{2.5}$ concentration. Exposure to cancer risk and annual $PM_{2.5}$ concentrations from I-280 traffic are above their respective thresholds. Cancer risk is mostly the result of exposure to diesel particulate matter, although, gasoline vehicle exhaust contributes to this effect. Annual $PM_{2.5}$ concentrations are based on the exposure to $PM_{2.5}$ resulting from emissions attributable to truck and auto exhaust, the wearing of brakes and tires and re-entrainment of roadway dust from vehicles traveling over pavement. The modeled $PM_{2.5}$ exposure to future residents drives the mitigation plan. Reducing particulate matter exposure would reduce both annual $PM_{2.5}$ exposures and cancer risk.

The project shall include the following measures to minimize long-term increased cancer risk and annual $PM_{2.5}$ exposure for new project occupants:

1. Install air filtration in the entire project building. Air filtration devices shall be rated MERV13 or higher. To ensure adequate health protection to sensitive receptors (i.e.,

residents), this ventilation system, whether mechanical or passive, shall filter all fresh air that would be circulated into the dwelling units.

2. The ventilation system shall be designed to keep the building at positive pressure when doors and windows are closed to reduce the intrusion of unfiltered outside air into the building

3. As part of implementing this measure, an ongoing maintenance plan for the buildings' heating, ventilation, and air conditioning (HVAC) air filtration system shall be required.

4. Ensure that the use agreement and other property documents: (1) require cleaning, maintenance, and monitoring of the affected buildings for air flow leaks, (2) include assurance that new owners or tenants are provided information on the ventilation system, and (3) include provisions that fees associated with owning or leasing a unit(s) in the building include funds for cleaning, maintenance, monitoring, and replacements of the filters, as needed.

Effectiveness of Recommended Design Features

A properly installed and operated ventilation system with MERV13 would achieve an 80-percent reduction.[28] The overall effectiveness calculations take into account the amount of time spent outdoors and away from home. Assuming that the filtration system is 80-percent effective and the individual is being exposed to 21 hours of indoor filtered air and three hours of outdoor unfiltered air, then the overall effectiveness of a MERV13 filtration system would be about 70-percent for $PM_{2.5}$ exposure. This would reduce the maximum cancer risk from I-280 to 5.8 in one million and annual $PM_{2.5}$ concentration from I-280 to 0.15 µg/m^3. With this recommended design feature, impacts from I-280 are below their respective single-source thresholds.

Impact: Create objectionable odors affecting a substantial number of people?

The project would generate localized emissions of diesel exhaust during construction equipment operation and truck activity. These emissions may be noticeable from time to time by adjacent receptors. However, they would be localized and are not likely to adversely affect people off-site by resulting in confirmed odor complaints. The project would not include any sources of significant odors that would cause complaints from surrounding uses.

[28] Bay Area Air Quality Management District (2016). Appendix B: Best Practices to Reduce Exposure to Local Air Pollution, *Planning Healthy Places A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning* (p. 38). http://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/php_may20_2016-pdf.pdf?la=en

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 (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

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

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

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

Recent Regulatory Actions for California GHG Emissions

Executive Order S-3-05 – California GHG Reduction Targets

Executive Order (EO) S-3-05 was signed by Governor Arnold Schwarzenegger in 2005 to set GHG emission reduction targets for California. The three targets established by this EO are as follows: (1) reduce California's GHG emissions to 2000 levels by 2010, (2) reduce California's GHG emissions to 1990 levels by 2020, and (3) reduce California's GHG emissions by 80 percent below 1990 levels by 2050.

Assembly Bill 32 – California Global Warming Solutions Act (2006)

Assembly Bill (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, which has a target of reducing GHG emissions 80 percent below 1990 levels.

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.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 million metric tons (MMT) of CO_2e as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, in light of the economic downturn, to 545 MMT of CO_2e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 MMT of CO_2e. Thus, an estimated reduction of 80 MMT of CO_2e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

Executive Order B-30-15 & SB 32 GHG Reduction Targets – 2030 GHG Reduction Target

In April 2015, Governor Brown signed EO B-30-15, 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 Senate Bill (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.*[29] 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.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB is currently working on a second update to the Scoping Plan to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The proposed Scoping Plan Update was published on January 20, 2017 as directed by SB 32 companion legislation AB 197. The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive

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[29] California Air Resource Board, 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets.* November. Web: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf

Order S-3-05. The Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and obtain the statewide goals.

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 bikeable 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.

Executive Order B-55-18 – Carbon Neutrality

In 2018, a new statewide goal was established to achieve carbon neutrality as soon as possible, but no later than 2045, and to maintain net negative emissions thereafter. CARB and other relevant state agencies are tasked with establishing sequestration targets and create policies/programs that would meet this goal.

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.

Senate Bill 350 - Renewable Portfolio Standards

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Senate Bill 100 – Current Renewable Portfolio Standards

In September 2018, SB 100 was signed by Governor Brown to revise California’s RPS program goals, furthering California’s focus on using renewable energy and carbon-free power sources for its energy needs. The bill would require all California utilities to supply a specific percentage of their retail sales from renewable resources by certain target years. By December 31, 2024, 44 percent of the retails sales would need to be from renewable energy sources, by December 31, 2026 the target would be 40 percent, by December 31, 2017 the target would be 52 percent, and by December 31, 2030 the target would be 60 percent. By December 31, 2045, all California utilities would be required to supply retail electricity that is 100 percent carbon-free and sourced from eligible renewable energy resource to all California end-use customers.

California Building Standards Code – Title 24 Part 11 & Part 6

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11.[30] The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2019 California Building Standard Code) was effective as of January 1, 2020.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission (CEC). This code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners. This Energy Code is enforced and verified by cities during the

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[30] See: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#:~:text=CALGreen%20is%20the%20first%2Din,to%201990%20levels%20by%202020.

planning and building permit process. The current energy efficiency standards (2019 Energy Code) replaced the 2016 Energy Code as of January 1,2020. Under the 2019 standards, single-family homes are predicted to be 53 percent more efficient than homes built under the 2016 standard due more stringent energy-efficiency standards and mandatory installation of solar photovoltaic systems. For nonresidential developments, it is predicted that these buildings will use 30 percent less energy due to lightening upgrades.[31]

Climate Smart San José

Climate Smart San José is a plan to reduce air pollution, save water, and create a stronger and healthier community. The City approved goals and milestones in February 2018 to ensure the City can substantially reduce GHG emissions through reaching the following goals and milestones:

- All new residential buildings will be Zero Net Carbon Emissions (ZNE) by 2020 and all new commercial buildings will be ZNE by 2030 (Note that ZNE buildings would be all electric with a carbon-free electricity source).
- San Jose Clean Energy (SJCE) will provide 100-percent carbon-free base power by 2021.
- One gigawatt of solar power will be installed in San Jose by 2040.
- 61 percent of passenger vehicles will be powered by electricity by 2030.

The California Energy Commission (CEC) updates the California Building Energy Efficiency Standards every three years, in alignment with the California Code of regulations. Title 24 Parts 6 and 11 of the California Building Energy Efficiency Standards and the California Green Building Standards Code (CALGreen) address the need for regulations to improve energy efficiency and combat climate change. The 2019 CAL Green standards include substantial changes intended to increase the energy efficiency of buildings. For example, the code encourages the installation of solar and heat pump water heaters in low-rise residential buildings. The 2019 California Code went before City Council in October 2019 for approval, with an effective date of January 1, 2020. As part of this action, the City adopted a "reach code" that requires development projects to exceed the minimum Building Energy Efficiency requirements.[32] The City's reach code applies only to new residential and non-residential construction in San José. It incentivizes all-electric construction, requires increased energy efficiency and electrification-readiness for those choosing to maintain the presence of natural gas. The code requires that non-residential construction include solar readiness. It also requires additional EV charging readiness and/or electric vehicle service equipment (EVSE) installation for all development types.

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

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[31] See: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf

[32] City of San Jose Transportation and Environmental Committee, *Building Reach Code for New Construction Memorandum,* August 2019.

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.[33] 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. 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 full-time employees. Based on information provided by the project applicant, there would be 106 to 150 future residents and 7 to 8 full-time employees. Therefore, the conservatively estimated service population used is this analysis is 113 people.

Construction Emissions

GHG emissions associated with construction were computed to be 483 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable.

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 8, the annual emissions resulting from operation of the proposed project are

[33] 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.

predicted to be 422 MT of CO_2e in 2023 and 371 MT of CO_2e in 2030. The service population emission for the year 2023 and 2030 are predicted to be 3.7 and 3.3 MT/CO_{2e}/year/service population, respectively.

To be considered significant, the project must exceed both the GHG significance threshold in metric tons per year and the service population significance threshold in the opening and future year. Note that if the project exceeds in the opening but not the future year, then it is still considered a significant impact. Emissions from both years must be below at least one of the thresholds.

The project not would exceed the annual emissions bright-line threshold of 660 MT CO_2e/year in the opening and future years. The 2023 and 2030 emissions would exceed the per capita threshold of 2.6 MT of CO_2e/year/service population.

Table 8. Annual Project GHG Emissions (CO_2e) in Metric Tons and Per Capita

Source Category	Proposed Project in 2023	Proposed Project in 2030
Area	6	6
Energy Consumption	50	50
Mobile	307	256
Solid Waste Generation	49	49
Water Usage	10	10
Total (MT CO_{2e}/year)	422	371
Significance Threshold	***660 MT CO_2e/year***	
Service Population Emissions (MT CO_{2e}/year/service population)	**3.7**	**3.3**
Significance Threshold	***2.6 in 2030***	
Exceeds both thresholds?	*No*	*No*

Impact: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The proposed project would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan nor would the project conflict with SB 100 goals. For example, proposed buildings would be constructed in conformance with CALGreen and the Title 24 Building Code, which requires high-efficiency water fixtures, water-efficient irrigation systems, and compliance with current energy efficacy standards.

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 outputs for 2030 uses are also included in this attachment. Also included are any modeling assumptions.

Attachment 3 includes the EMFAC2017 emissions modeling. The input files for these calculations are voluminous and are available upon request in digital format.

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

Attachment 5 includes the cumulative community risk calculations, modeling results, and health risk calculations from sources affecting the construction MEI and on-site sensitive receptors.

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.[34] 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.[35] 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.[36] 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 is 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) or liters per kilogram of body weight per 8-hour period for the case of worker or school child exposures. 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 8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of

[34] 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.

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

[36] 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. For school children a 9-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 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:

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

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
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 = $C_{air} \times DBR^* \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
8HrBR = 8-hour breathing rate (L/kg body weight-8 hours)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

* An 8-hour breathing rate (8HrBR) is used for worker and school child exposures.

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

Parameter	Exposure Type →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95th Percentile Rate		-	1,200	520	240
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14*
Exposure Frequency (days/year)		350	350	350	350*
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home (FAH)		0.85-1.0	0.85-1.0	0.72-1.0	0.73*

Non-Cancer Hazards

Non-cancer health risk is usually determined by comparing the predicted level of exposure to a chemical to the level of exposure that is not expected to cause any adverse effects (reference exposure level), even to the most susceptible people. 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 ($\mu g/m^3$).

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 Inputs and Outputs

Air Quality/Noise Construction Information Data Request

Project Name: **1710 Moorpark Housing**

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load facto

Project Size	**108** Dwelling Units	**0.8** total project acres disturbed	
	62065 s.f. residential		
	s.f. retail		
	s.f. office/commercial		
	2,240 s.f. other, specify:	Community serving area for Immanuel Church	
	14669 s.f. parking garage	**37** spaces	
	s.f. parking lot	spaces	
Construction Hours	**7** am to	**4** pm	

Pile Driving? Y/N? No.

Project include OPERATIONAL GENERATOR OR FIRE PUMP on-site? Y/N? __N__

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _________

Fuel Type: ____________

Location in project (Plans Desired if Available):

DO NOT MULTIPLY EQUIPMENT HOURS/DAY BY THE QUANTITY OF EQUIPMENT

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Annual Hours	HP hrs	Comments
	Demolition	**Start Date:**	**1/4/2021**	**Total phase:**	**20**				**Overall Import/Export Volumes**
		End Date:	**1/29/2021**						
2	Concrete/Industrial Saws	81	0.73	8	15	6	240	14,191	**Demolition Volume**
2	Excavators	158	0.38	8	15	6	240	14,410	Square footage of buildings to be demolished
1	Rubber-Tired Dozers	247	0.4	8	15	6	120	11,856	(*or* total tons to be hauled
	Tractors/Loaders/Backhoes	97	0.37			0	0	-	_9,026_ square feet *or*
									_N/A_ Hauling volume (tons
									Any pavement demolished and hauled? _450 tons_
	Site Preparation	**Start Date:**	**1/30/2021**	**Total phase:**	**15**				
		End Date:	**2/19/2021**						
	Graders	187	0.41			0	0	-	
1	Rubber Tired Dozers	247	0.4	8	15	8	120	11,856	
3	Tractors/Loaders/Backhoes	97	0.37	8	15	8	360	12,920	
	Grading / Excavation	**Start Date:**	**2/20/2021**	**Total phase:**	**30**				
		End Date:	**4/2/2021**						**Soil Hauling Volume**
1	Excavators	158	0.38	8	30	8	240	14,410	Export volume = _150_ cubic yards?
2	Graders	187	0.41	8	30	8	480	36,802	Import volume = _?_ cubic yards?
0	Rubber Tired Dozers	247	0.4			0	0	-	
	Concrete/Industrial Saws	81	0.73			0	0	-	
2	Tractors/Loaders/Backhoes	97	0.37	8	30	8	480	17,227	
	Other Equipment?								
	Trenching/Foundation	**Start Date:**	**2/20/2021**	**Total phase:**	**20**				
		End Date:	**3/19/2021**						
1	Tractor/Loader/Backhoe	97	0.37	8	20	8	160	5,742	
1	Excavators	158	0.38	8	20	8	160	9,606	
	Other Equipment?								
	Building - Exterior	**Start Date:**	**4/3/2021**	**Total phase:**	**180**				**Cement Trucks? _281_ Total Round-Trips**
		End Date:	**12/10/2021**						
1	Cranes	231	0.29	8	20	0.9	160	10,718	Electric? (Y/N) _N_ Otherwise assumed diesel
1	Forklifts	89	0.2	8	180	8.0	1440	25,632	Liquid Propane (LPG)? (Y/N) _N_ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	180	8.0	1440	89,510	Or temporary line power? (Y/N) _N_
1	Tractors/Loaders/Backhoes	97	0.37	8	120	5.3	960	34,454	
1	Welders	46	0.45	8	30	1.3	240	4,968	
	Other Equipment?								
Building - Interior/Architectural Coating		**Start Date:**	**12/11/2021**	**Total phase:**	**60**				
		End Date:	**3/4/2022**						
1	Air Compressors	78	0.48	6	20	2	120	4,493	
4	Aerial Lift	62	0.31	8	60	8	1920	36,902	
	Other Equipment?								
	Paving	**Start Date:**	**3/5/2022**	**Total phase:**	**20**				
		Start Date:	**4/1/2022**						
	Cement and Mortar Mixers	9	0.56			0	0	-	
2	Pavers	130	0.42	8	20	8	320	17,472	**Asphalt? _296__ cubic yards or ____ round trips?**
2	Paving Equipment	132	0.36	8	20	8	320	15,206	
2	Rollers	80	0.38	8	20	8	320	9,728	
	Tractors/Loaders/Backhoes	97	0.37			0	0	-	
	Other Equipment?								

Equipment types listed in "Equipment Types" worksheet tab

Equipment listed in this sheet is to provide an example of inputs

Complete one sheet for each project component

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

March 13, 2020

Ms. Helen Tong-Ishikawa
MidPen Housing Corp.
303 Vintage Park Drive, Suite 250
Foster City, CA 94404

Re: Trip Generation and Parking Study for the Proposed Supportive Housing Project Located at 1710 Moorpark Avenue in San Jose, California

Dear Ms. Tong-Ishikawa:

Hexagon Transportation Consultants, Inc. has completed a trip generation and parking study for the proposed supportive housing project located at 1710 Moorpark Avenue in San Jose, California. The project proposes to construct 106 units of supportive housing studios for seniors and 2 units for on-site managers for a total of 108 dwelling units. The project is located adjacent to a church that will remain. The proposed building will be located on the south side of Moorpark Avenue, between Leigh Avenue and Richmond Avenue. Parking will be provided on the first level of the proposed building. The proposed parking will be accessed via a two-way driveway on Richmond Avenue.

Project Trip Estimates

Vehicle trips generated by the project were estimated using the trip rates published in the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 10th Edition (2017) and in collaboration with the City of San Jose staff. Trips for the supportive housing units were estimated using the "Senior Adult Housing - Attached" (Land Use 252) category, and trips for the on-site manager units were estimated using the "Multifamily Housing - Low-Rise" (Land Use 220) category located in a general Urban/Suburban area (see Table 1).

As shown in Table 1, the project is estimated to generate 407 daily vehicle trips, including 22 vehicle trips (7 in and 115 out) in the AM peak hour and 29 vehicle trips (16 in and 13 out) in the PM peak hour.

Table 1
Trip Generation Estimates

		Daily		AM Peak Hour				PM Peak Hour			
Land Use	**Size**	**Rate**	**Trips**	**Rate**	**In**	**Out**	**Total**	**Rate**	**In**	**Out**	**Total**
Proposed Uses											
Senior Housing[1]	106.0 DU	3.70	392	0.20	7	14	21	0.26	15	13	28
Multifamily Housing[2]	2.0 DU	7.32	15	0.46	0	1	1	0.56	1	0	1
Total Project Trips			**407**		**7**	**15**	**22**		**16**	**13**	**29**

Note:
Trip rates for senior housing and multifamily housing are from the ITE Trip Generation Manual, 10th Edition, 2017.
1. Senior Adult Housing (Attached) (Land Use 252), average rates expressed in trips per dwelling unit (DU) are used.
2. Multi-Family Housing (Low-Rise) (Land Use 220), average rates expressed in trips per dwelling unit (DU) are used.

1710 Moorpark Ave, San Jose
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	37.00	Space	0.00	14,669.00	0
Apartments Mid Rise	2.00	Dwelling Unit	0.00	2,000.00	6
Congregate Care (Assisted Living)	106.00	Dwelling Unit	0.80	62,305.00	303

1.2 Other Project Characteristics

Urbanization Urban | **Wind Speed (m/s)** 2.2 | **Precipitation Freq (Days)** 58

Climate Zone 4 | **Operational Year** 2023

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 210 | **CH4 Intensity (lb/MWhr)** 0.029 | **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2017 CO2 rate - 210

Land Use - Provided land uses - traffic & site plan, default acreage used doe defaults

Construction Phase - Provided construction schedule

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Trenching added

Trips and VMT - 0 trips EMFAC2017, 450 tons pavement demo = 90 one-way trips + 41 = 131 demo trips, 281 cement truck round trips, 296cy asphalt = 71 one-way trips

Demolition - existing building demo = 9,026sf

Grading - grading = 150cy export

Vehicle Trips - supportive care = 3.7, 2.97, 3.29, apt = 7.32, 7.03, 6.45

Vehicle Emission Factors - EMFAC2017

Woodstoves - No wood all gas

Water And Wastewater - WWTP 100% aerobic

Construction Off-road Equipment Mitigation - BMPs, Tier 4 interim mitigation, electric generator, air compressor, welder

Energy Mitigation - SJCE 100% carbon free renewable energy

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	15.00
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tblFireplaces	FireplaceWoodMass	228.80	0.00
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tblFireplaces	NumberGas	15.90	33.92
tblFireplaces	NumberWood	0.34	0.00
tblFireplaces	NumberWood	18.02	0.00
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tblFleetMix	HHD	0.02	0.02
tblFleetMix	HHD	0.02	0.02
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tblFleetMix	LDA	0.61	0.59
tblFleetMix	LDA	0.61	0.59
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.18	0.18
tblFleetMix	LDT2	0.18	0.18
tblFleetMix	LDT2	0.18	0.18
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tblFleetMix	MDV	0.11	0.11
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tblFleetMix	UBUS	1.5290e-003	1.2610e-003
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tblOffRoadEquipment	UsageHours	1.00	0.00

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tblVehicleEF	LDT1	0.21	0.16
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.15	0.58
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tblVehicleEF	LDT1	7.2200e-004	0.00
tblVehicleEF	LDT1	0.08	0.08
tblVehicleEF	LDT1	0.21	0.16
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.15	0.58
tblVehicleEF	LDT1	0.16	0.34
tblVehicleEF	LDT2	4.9930e-003	3.2450e-003
tblVehicleEF	LDT2	6.4640e-003	0.07
tblVehicleEF	LDT2	0.68	0.79
tblVehicleEF	LDT2	1.42	2.79
tblVehicleEF	LDT2	332.30	312.82
tblVehicleEF	LDT2	77.35	67.73
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.11	0.27
tblVehicleEF	LDT2	1.6420e-003	1.3890e-003

tblVehicleEF	LDT2	2.2820e-003	1.7450e-003
tblVehicleEF	LDT2	1.5110e-003	1.2790e-003
tblVehicleEF	LDT2	2.0990e-003	1.6050e-003
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.10	0.12
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.07	0.42
tblVehicleEF	LDT2	0.09	0.31
tblVehicleEF	LDT2	3.3280e-003	0.01
tblVehicleEF	LDT2	7.9700e-004	9.3000e-005
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.10	0.12
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.07	0.42
tblVehicleEF	LDT2	0.10	0.34
tblVehicleEF	LHD1	5.3570e-003	5.1620e-003
tblVehicleEF	LHD1	0.02	8.5450e-003
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	0.15	0.19
tblVehicleEF	LHD1	1.02	0.77
tblVehicleEF	LHD1	2.58	1.08
tblVehicleEF	LHD1	8.98	8.94
tblVehicleEF	LHD1	687.79	794.16
tblVehicleEF	LHD1	32.26	11.83
tblVehicleEF	LHD1	0.07	0.06
tblVehicleEF	LHD1	1.10	0.73
tblVehicleEF	LHD1	0.99	0.32
tblVehicleEF	LHD1	8.6000e-004	8.2500e-004

tblVehicleEF	LHD1	0.01	9.7470e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	9.5500e-004	2.5800e-004
tblVehicleEF	LHD1	8.2300e-004	7.9000e-004
tblVehicleEF	LHD1	2.5220e-003	2.4370e-003
tblVehicleEF	LHD1	0.01	9.7200e-003
tblVehicleEF	LHD1	8.7800e-004	2.3700e-004
tblVehicleEF	LHD1	2.6370e-003	2.0240e-003
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.3460e-003	1.0320e-003
tblVehicleEF	LHD1	0.12	0.09
tblVehicleEF	LHD1	0.32	0.52
tblVehicleEF	LHD1	0.26	0.08
tblVehicleEF	LHD1	9.0000e-005	8.7000e-005
tblVehicleEF	LHD1	6.7510e-003	7.7550e-003
tblVehicleEF	LHD1	3.7100e-004	1.1700e-004
tblVehicleEF	LHD1	2.6370e-003	2.0240e-003
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	1.3460e-003	1.0320e-003
tblVehicleEF	LHD1	0.15	0.11
tblVehicleEF	LHD1	0.32	0.52
tblVehicleEF	LHD1	0.29	0.08
tblVehicleEF	LHD2	3.3720e-003	3.1550e-003
tblVehicleEF	LHD2	7.5730e-003	7.0600e-003
tblVehicleEF	LHD2	6.7190e-003	8.4310e-003
tblVehicleEF	LHD2	0.12	0.14
tblVehicleEF	LHD2	0.55	0.62
tblVehicleEF	LHD2	1.16	0.63

tblVehicleEF	LHD2	13.98	14.00
tblVehicleEF	LHD2	705.76	768.73
tblVehicleEF	LHD2	24.06	7.83
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.69	0.88
tblVehicleEF	LHD2	0.44	0.18
tblVehicleEF	LHD2	1.2420e-003	1.4230e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	4.1600e-004	1.3300e-004
tblVehicleEF	LHD2	1.1880e-003	1.3610e-003
tblVehicleEF	LHD2	2.6910e-003	2.6880e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.8300e-004	1.2300e-004
tblVehicleEF	LHD2	8.1500e-004	1.0700e-003
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	4.3700e-004	5.4700e-004
tblVehicleEF	LHD2	0.10	0.11
tblVehicleEF	LHD2	0.07	0.28
tblVehicleEF	LHD2	0.09	0.04
tblVehicleEF	LHD2	1.3600e-004	1.3400e-004
tblVehicleEF	LHD2	6.8630e-003	7.4240e-003
tblVehicleEF	LHD2	2.6100e-004	7.8000e-005
tblVehicleEF	LHD2	8.1500e-004	1.0700e-003
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.3700e-004	5.4700e-004
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.07	0.28

tblVehicleEF	LHD2	0.10	0.05
tblVehicleEF	MCY	0.45	0.33
tblVehicleEF	MCY	0.16	0.26
tblVehicleEF	MCY	18.74	18.87
tblVehicleEF	MCY	10.18	9.03
tblVehicleEF	MCY	169.68	210.17
tblVehicleEF	MCY	45.14	61.04
tblVehicleEF	MCY	1.15	1.15
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.0080e-003	1.9690e-003
tblVehicleEF	MCY	3.7340e-003	3.0390e-003
tblVehicleEF	MCY	1.8770e-003	1.8400e-003
tblVehicleEF	MCY	3.5160e-003	2.8590e-003
tblVehicleEF	MCY	0.90	1.81
tblVehicleEF	MCY	0.70	0.69
tblVehicleEF	MCY	0.49	0.99
tblVehicleEF	MCY	2.20	2.21
tblVehicleEF	MCY	0.60	1.97
tblVehicleEF	MCY	2.20	1.94
tblVehicleEF	MCY	2.0680e-003	2.0800e-003
tblVehicleEF	MCY	6.8300e-004	6.0400e-004
tblVehicleEF	MCY	0.90	1.81
tblVehicleEF	MCY	0.70	0.69
tblVehicleEF	MCY	0.49	0.99
tblVehicleEF	MCY	2.73	2.74
tblVehicleEF	MCY	0.60	1.97
tblVehicleEF	MCY	2.39	2.11
tblVehicleEF	MDV	9.4310e-003	3.9100e-003
tblVehicleEF	MDV	0.02	0.08
tblVehicleEF	MDV	1.06	0.87

tblVehicleEF	MDV	2.68	3.13
tblVehicleEF	MDV	444.47	378.63
tblVehicleEF	MDV	101.69	81.00
tblVehicleEF	MDV	0.13	0.08
tblVehicleEF	MDV	0.23	0.32
tblVehicleEF	MDV	1.8000e-003	1.5110e-003
tblVehicleEF	MDV	2.4830e-003	1.9090e-003
tblVehicleEF	MDV	1.6590e-003	1.3930e-003
tblVehicleEF	MDV	2.2840e-003	1.7560e-003
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.16	0.14
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.11	0.44
tblVehicleEF	MDV	0.20	0.38
tblVehicleEF	MDV	4.4500e-003	3.7430e-003
tblVehicleEF	MDV	1.0640e-003	8.0200e-004
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.16	0.14
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.11	0.44
tblVehicleEF	MDV	0.22	0.42
tblVehicleEF	MH	0.03	0.01
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.96	1.11
tblVehicleEF	MH	5.58	2.13
tblVehicleEF	MH	1,212.08	1,532.75
tblVehicleEF	MH	58.85	18.68
tblVehicleEF	MH	1.29	1.36

tblVehicleEF	MH	0.81	0.25
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.1290e-003	2.7400e-004
tblVehicleEF	MH	3.2190e-003	3.2750e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.0380e-003	2.5200e-004
tblVehicleEF	MH	0.81	0.71
tblVehicleEF	MH	0.07	0.06
tblVehicleEF	MH	0.28	0.25
tblVehicleEF	MH	0.09	0.07
tblVehicleEF	MH	0.02	1.44
tblVehicleEF	MH	0.32	0.10
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	6.8600e-004	1.8500e-004
tblVehicleEF	MH	0.81	0.71
tblVehicleEF	MH	0.07	0.06
tblVehicleEF	MH	0.28	0.25
tblVehicleEF	MH	0.12	0.09
tblVehicleEF	MH	0.02	1.44
tblVehicleEF	MH	0.35	0.11
tblVehicleEF	MHD	0.02	3.5450e-003
tblVehicleEF	MHD	4.5180e-003	1.9320e-003
tblVehicleEF	MHD	0.05	9.4870e-003
tblVehicleEF	MHD	0.38	0.39
tblVehicleEF	MHD	0.36	0.26
tblVehicleEF	MHD	5.92	1.14
tblVehicleEF	MHD	132.71	73.35
tblVehicleEF	MHD	1,189.79	1,095.06
tblVehicleEF	MHD	61.47	9.38

tblVehicleEF	MHD	0.36	0.43
tblVehicleEF	MHD	1.11	1.44
tblVehicleEF	MHD	10.17	1.70
tblVehicleEF	MHD	1.2300e-004	4.2700e-004
tblVehicleEF	MHD	3.1090e-003	6.9550e-003
tblVehicleEF	MHD	9.0500e-004	1.1900e-004
tblVehicleEF	MHD	1.1800e-004	4.0900e-004
tblVehicleEF	MHD	2.9680e-003	6.6480e-003
tblVehicleEF	MHD	8.3200e-004	1.1000e-004
tblVehicleEF	MHD	8.9400e-004	4.1700e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	4.6300e-004	2.1100e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.02	0.11
tblVehicleEF	MHD	0.35	0.05
tblVehicleEF	MHD	1.2790e-003	6.9600e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	7.1800e-004	9.3000e-005
tblVehicleEF	MHD	8.9400e-004	4.1700e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	4.6300e-004	2.1100e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.02	0.11
tblVehicleEF	MHD	0.38	0.06
tblVehicleEF	OBUS	0.01	7.0630e-003
tblVehicleEF	OBUS	6.3660e-003	4.0130e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.57

tblVehicleEF	OBUS	0.44	0.47
tblVehicleEF	OBUS	5.01	1.90
tblVehicleEF	OBUS	99.56	91.93
tblVehicleEF	OBUS	1,293.67	1,341.74
tblVehicleEF	OBUS	66.88	15.48
tblVehicleEF	OBUS	0.21	0.37
tblVehicleEF	OBUS	0.88	1.44
tblVehicleEF	OBUS	2.72	1.09
tblVehicleEF	OBUS	1.9000e-005	1.2000e-004
tblVehicleEF	OBUS	2.6550e-003	7.0290e-003
tblVehicleEF	OBUS	8.0900e-004	1.4200e-004
tblVehicleEF	OBUS	1.8000e-005	1.1500e-004
tblVehicleEF	OBUS	2.5210e-003	6.7120e-003
tblVehicleEF	OBUS	7.4400e-004	1.3000e-004
tblVehicleEF	OBUS	1.1720e-003	1.0840e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	5.1500e-004	4.8000e-004
tblVehicleEF	OBUS	0.04	0.03
tblVehicleEF	OBUS	0.03	0.18
tblVehicleEF	OBUS	0.31	0.09
tblVehicleEF	OBUS	9.6200e-004	8.7300e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.5700e-004	1.5300e-004
tblVehicleEF	OBUS	1.1720e-003	1.0840e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	5.1500e-004	4.8000e-004
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.03	0.18

tblVehicleEF	OBUS	0.34	0.10
tblVehicleEF	SBUS	0.83	0.05
tblVehicleEF	SBUS	0.02	6.3560e-003
tblVehicleEF	SBUS	0.08	4.7830e-003
tblVehicleEF	SBUS	8.17	2.18
tblVehicleEF	SBUS	1.05	0.52
tblVehicleEF	SBUS	9.75	0.70
tblVehicleEF	SBUS	1,109.35	347.39
tblVehicleEF	SBUS	1,051.90	1,060.99
tblVehicleEF	SBUS	56.07	3.98
tblVehicleEF	SBUS	8.47	3.53
tblVehicleEF	SBUS	3.71	4.87
tblVehicleEF	SBUS	12.10	0.81
tblVehicleEF	SBUS	8.0590e-003	3.9050e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	9.0100e-004	4.6000e-005
tblVehicleEF	SBUS	7.7100e-003	3.7360e-003
tblVehicleEF	SBUS	2.6280e-003	2.7270e-003
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	8.2900e-004	4.2000e-005
tblVehicleEF	SBUS	3.4510e-003	5.3700e-004
tblVehicleEF	SBUS	0.04	5.2210e-003
tblVehicleEF	SBUS	0.97	0.24
tblVehicleEF	SBUS	1.4880e-003	2.2700e-004
tblVehicleEF	SBUS	0.11	0.09
tblVehicleEF	SBUS	0.02	0.04
tblVehicleEF	SBUS	0.48	0.03
tblVehicleEF	SBUS	0.01	3.3060e-003
tblVehicleEF	SBUS	0.01	0.01

tblVehicleEF	SBUS	7.2900e-004	3.9000e-005
tblVehicleEF	SBUS	3.4510e-003	5.3700e-004
tblVehicleEF	SBUS	0.04	5.2210e-003
tblVehicleEF	SBUS	1.40	0.35
tblVehicleEF	SBUS	1.4880e-003	2.2700e-004
tblVehicleEF	SBUS	0.14	0.10
tblVehicleEF	SBUS	0.02	0.04
tblVehicleEF	SBUS	0.53	0.03
tblVehicleEF	UBUS	0.27	1.35
tblVehicleEF	UBUS	0.04	1.4170e-003
tblVehicleEF	UBUS	4.81	10.12
tblVehicleEF	UBUS	7.98	0.14
tblVehicleEF	UBUS	2,067.88	1,597.13
tblVehicleEF	UBUS	103.85	1.39
tblVehicleEF	UBUS	9.47	0.73
tblVehicleEF	UBUS	14.57	0.01
tblVehicleEF	UBUS	0.59	0.07
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.21	5.3280e-003
tblVehicleEF	UBUS	1.1460e-003	1.5000e-005
tblVehicleEF	UBUS	0.25	0.03
tblVehicleEF	UBUS	3.0000e-003	8.3320e-003
tblVehicleEF	UBUS	0.20	5.0960e-003
tblVehicleEF	UBUS	1.0540e-003	1.4000e-005
tblVehicleEF	UBUS	2.2820e-003	1.9000e-005
tblVehicleEF	UBUS	0.04	1.3300e-004
tblVehicleEF	UBUS	1.1230e-003	8.0000e-006
tblVehicleEF	UBUS	0.58	0.02
tblVehicleEF	UBUS	8.3050e-003	5.9200e-004
tblVehicleEF	UBUS	0.58	5.8830e-003

tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	1.1810e-003	1.4000e-005
tblVehicleEF	UBUS	2.2820e-003	1.9000e-005
tblVehicleEF	UBUS	0.04	1.3300e-004
tblVehicleEF	UBUS	1.1230e-003	8.0000e-006
tblVehicleEF	UBUS	0.90	1.38
tblVehicleEF	UBUS	8.3050e-003	5.9200e-004
tblVehicleEF	UBUS	0.63	6.4410e-003
tblVehicleTrips	ST_TR	6.39	7.03
tblVehicleTrips	ST_TR	2.20	2.97
tblVehicleTrips	SU_TR	5.86	6.45
tblVehicleTrips	SU_TR	2.44	3.29
tblVehicleTrips	WD_TR	6.65	7.32
tblVehicleTrips	WD_TR	2.74	3.70
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
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
2021	0.2351	1.1896	1.0949	1.8900e-003	0.0502	0.0603	0.1105	0.0256	0.0570	0.0826	0.0000	164.1783	164.1783	0.0364	0.0000	165.0885
2022	0.3576	0.1722	0.2579	4.0000e-004	0.0000	7.2300e-003	7.2300e-003	0.0000	6.7000e-003	6.7000e-003	0.0000	35.2199	35.2199	0.0109	0.0000	35.4923
Maximum	**0.3576**	**1.1896**	**1.0949**	**1.8900e-003**	**0.0502**	**0.0603**	**0.1105**	**0.0256**	**0.0570**	**0.0826**	**0.0000**	**164.1783**	**164.1783**	**0.0364**	**0.0000**	**165.0885**

Mitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
2021	0.1373	0.4802	0.8479	1.8900e-003	0.0226	3.1000e-003	0.0257	5.7500e-003	3.1000e-003	8.8500e-003	0.0000	109.9184	109.9184	0.0334	0.0000	110.7537
2022	0.3489	0.1853	0.2877	4.0000e-004	0.0000	3.8500e-003	3.8500e-003	0.0000	3.8500e-003	3.8500e-003	0.0000	33.3049	33.3049	0.0108	0.0000	33.5742
Maximum	**0.3489**	**0.4802**	**0.8479**	**1.8900e-003**	**0.0226**	**3.8500e-003**	**0.0257**	**5.7500e-003**	**3.8500e-003**	**8.8500e-003**	**0.0000**	**109.9184**	**109.9184**	**0.0334**	**0.0000**	**110.7537**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**17.97**	**51.13**	**16.05**	**0.00**	**55.00**	**89.71**	**74.93**	**77.50**	**89.09**	**85.78**	**0.00**	**28.17**	**28.17**	**6.62**	**0.00**	**28.05**

Quarter	**Start Date**	**End Date**	**Maximum Unmitigated ROG + NOX (tons/quarter)**	**Maximum Mitigated ROG + NOX (tons/quarter)**
1	**1-4-2021**	**4-3-2021**	0.6383	0.3036
2	**4-4-2021**	**7-3-2021**	0.2307	0.0595
3	**7-4-2021**	**10-3-2021**	0.2332	0.0602
4	**10-4-2021**	**1-3-2022**	0.3292	0.2085

5	1-4-2022	4-3-2022	0.5104	0.5137
		Highest	0.6383	0.5137

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3223	0.0130	0.8040	7.0000e-005		4.7400e-003	4.7400e-003		4.7400e-003	4.7400e-003	0.0000	5.6250	5.6250	1.3400e-003	8.0000e-005	5.6822
Energy	5.0300e-003	0.0430	0.0183	2.7000e-004		3.4800e-003	3.4800e-003		3.4800e-003	3.4800e-003	0.0000	100.4501	100.4501	7.9500e-003	2.3600e-003	101.3522
Mobile	0.1431	0.2212	1.1369	3.1700e-003	0.3341	2.5700e-003	0.3366	0.0894	2.4000e-003	0.0918	0.0000	306.9160	306.9160	0.0141	0.0000	307.2676
Waste						0.0000	0.0000		0.0000	0.0000	19.8200	0.0000	19.8200	1.1713	0.0000	49.1033
Water						0.0000	0.0000		0.0000	0.0000	2.4896	5.1058	7.5954	9.2700e-003	5.5600e-003	9.4841
Total	**0.4704**	**0.2771**	**1.9592**	**3.5100e-003**	**0.3341**	**0.0108**	**0.3449**	**0.0894**	**0.0106**	**0.1000**	**22.3096**	**418.0969**	**440.4065**	**1.2040**	**8.0000e-003**	**472.8893**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3223	0.0130	0.8040	7.0000e-005		4.7400e-003	4.7400e-003		4.7400e-003	4.7400e-003	0.0000	5.6250	5.6250	1.3400e-003	8.0000e-005	5.6822
Energy	5.0300e-003	0.0430	0.0183	2.7000e-004		3.4800e-003	3.4800e-003		3.4800e-003	3.4800e-003	0.0000	49.7917	49.7917	9.5000e-004	9.1000e-004	50.0876
Mobile	0.1431	0.2212	1.1369	3.1700e-003	0.3341	2.5700e-003	0.3366	0.0894	2.4000e-003	0.0918	0.0000	306.9160	306.9160	0.0141	0.0000	307.2676

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Waste						0.0000	0.0000		0.0000	0.0000	19.8200	0.0000	19.8200	1.1713	0.0000	49.1033
Water						0.0000	0.0000		0.0000	0.0000	2.4896	5.1058	7.5954	9.2700e-003	5.5600e-003	9.4841
Total	**0.4704**	**0.2771**	**1.9592**	**3.5100e-003**	**0.3341**	**0.0108**	**0.3449**	**0.0894**	**0.0106**	**0.1000**	**22.3096**	**367.4385**	**389.7481**	**1.1970**	**6.5500e-003**	**421.6247**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**12.12**	**11.50**	**0.58**	**18.13**	**10.84**

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	1/4/2021	1/29/2021	5	20	
2	Site Preparation	Site Preparation	1/30/2021	2/19/2021	5	15	
3	Grading	Grading	2/20/2021	4/2/2021	5	30	
4	Trenching	Trenching	2/20/2021	3/19/2021	5	20	
5	Building Construction	Building Construction	4/3/2021	12/10/2021	5	180	
6	Architectural Coating	Architectural Coating	12/11/2021	3/4/2022	5	60	
7	Paving	Paving	3/5/2022	4/1/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1

Acres of Paving: 0

Residential Indoor: 130,218; Residential Outdoor: 43,406; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	2	6.00	81	0.73
Demolition	Excavators	2	6.00	158	0.38

Demolition	Rubber Tired Dozers	1	6.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Concrete/Industrial Saws	0	0.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	0.90	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	5.30	97	0.37
Building Construction	Welders	1	1.30	46	0.45
Architectural Coating	Aerial Lifts	4	8.00	63	0.31
Architectural Coating	Air Compressors	1	2.00	78	0.48
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
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	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Grading	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	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

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.4400e-003	0.0000	4.4400e-003	6.7000e-004	0.0000	6.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1602	0.1345	2.4000e-004		8.1600e-003	8.1600e-003		7.7100e-003	7.7100e-003	0.0000	20.5006	20.5006	4.4900e-003	0.0000	20.6128
Total	**0.0171**	**0.1602**	**0.1345**	**2.4000e-004**	**4.4400e-003**	**8.1600e-003**	**0.0126**	**6.7000e-004**	**7.7100e-003**	**8.3800e-003**	**0.0000**	**20.5006**	**20.5006**	**4.4900e-003**	**0.0000**	**20.6128**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					2.0000e-003	0.0000	2.0000e-003	1.5000e-004	0.0000	1.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7200e-003	0.0845	0.1506	2.4000e-004		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	20.5005	20.5005	4.4900e-003	0.0000	20.6128
Total	**3.7200e-003**	**0.0845**	**0.1506**	**2.4000e-004**	**2.0000e-003**	**3.6000e-004**	**2.3600e-003**	**1.5000e-004**	**3.6000e-004**	**5.1000e-004**	**0.0000**	**20.5005**	**20.5005**	**4.4900e-003**	**0.0000**	**20.6128**

Mitigated Construction Off-Site

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

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0121	0.1249	0.0811	1.3000e-004		6.5100e-003	6.5100e-003		5.9900e-003	5.9900e-003	0.0000	11.7711	11.7711	3.8100e-003	0.0000	11.8663
Total	**0.0121**	**0.1249**	**0.0811**	**1.3000e-004**	**0.0452**	**6.5100e-003**	**0.0517**	**0.0248**	**5.9900e-003**	**0.0308**	**0.0000**	**11.7711**	**11.7711**	**3.8100e-003**	**0.0000**	**11.8663**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0203	0.0000	0.0203	5.5900e-003	0.0000	5.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6100e-003	0.0473	0.0867	1.3000e-004		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	11.7711	11.7711	3.8100e-003	0.0000	11.8662
Total	**2.6100e-003**	**0.0473**	**0.0867**	**1.3000e-004**	**0.0203**	**2.2000e-004**	**0.0205**	**5.5900e-003**	**2.2000e-004**	**5.8100e-003**	**0.0000**	**11.7711**	**11.7711**	**3.8100e-003**	**0.0000**	**11.8662**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2021

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					5.4000e-004	0.0000	5.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0227	0.2669	0.1699	3.7000e-004		0.0106	0.0106		9.7100e-003	9.7100e-003	0.0000	32.4594	32.4594	0.0105	0.0000	32.7219
Total	**0.0227**	**0.2669**	**0.1699**	**3.7000e-004**	**5.4000e-004**	**0.0106**	**0.0111**	**6.0000e-005**	**9.7100e-003**	**9.7700e-003**	**0.0000**	**32.4594**	**32.4594**	**0.0105**	**0.0000**	**32.7219**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					2.4000e-004	0.0000	2.4000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	6.2900e-003	0.1271	0.2345	3.7000e-004		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004	0.0000	32.4594	32.4594	0.0105	0.0000	32.7219
Total	**6.2900e-003**	**0.1271**	**0.2345**	**3.7000e-004**	**2.4000e-004**	**6.0000e-004**	**8.4000e-004**	**1.0000e-005**	**6.0000e-004**	**6.1000e-004**	**0.0000**	**32.4594**	**32.4594**	**0.0105**	**0.0000**	**32.7219**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Trenching - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	1.3300e-003	0.0363	0.0626	8.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	7.2674	7.2674	2.3500e-003	0.0000	7.3261
Total	**1.3300e-003**	**0.0363**	**0.0626**	**8.0000e-005**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**7.2674**	**7.2674**	**2.3500e-003**	**0.0000**	**7.3261**

Mitigated Construction Off-Site

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

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0636	0.5753	0.6167	1.0100e-003		0.0324	0.0324		0.0311	0.0311	0.0000	87.1157	87.1157	0.0138	0.0000	87.4604
Total	**0.0636**	**0.5753**	**0.6167**	**1.0100e-003**		**0.0324**	**0.0324**		**0.0311**	**0.0311**	**0.0000**	**87.1157**	**87.1157**	**0.0138**	**0.0000**	**87.4604**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	8.2200e-003	0.1567	0.2753	1.0100e-003		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	33.4943	33.4943	0.0108	0.0000	33.7651
Total	**8.2200e-003**	**0.1567**	**0.2753**	**1.0100e-003**		**6.2000e-004**	**6.2000e-004**		**6.2000e-004**	**6.2000e-004**	**0.0000**	**33.4943**	**33.4943**	**0.0108**	**0.0000**	**33.7651**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Archit. Coating	0.1139					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6700e-003	0.0218	0.0374	6.0000e-005		5.8000e-004	5.8000e-004		5.5000e-004	5.5000e-004	0.0000	5.0641	5.0641	1.4800e-003	0.0000	5.1010
Total	**0.1156**	**0.0218**	**0.0374**	**6.0000e-005**		**5.8000e-004**	**5.8000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**5.0641**	**5.0641**	**1.4800e-003**	**0.0000**	**5.1010**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Archit. Coating	0.1139					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2400e-003	0.0283	0.0382	6.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	4.4258	4.4258	1.4300e-003	0.0000	4.4616
Total	**0.1152**	**0.0283**	**0.0382**	**6.0000e-005**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**4.4258**	**4.4258**	**1.4300e-003**	**0.0000**	**4.4616**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.3418					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7800e-003	0.0610	0.1121	1.7000e-004		1.5500e-003	1.5500e-003		1.4700e-003	1.4700e-003	0.0000	15.1923	15.1923	4.4200e-003	0.0000	15.3028

Total	**0.3466**	**0.0610**	**0.1121**	**1.7000e-004**		**1.5500e-003**	**1.5500e-003**		**1.4700e-003**	**1.4700e-003**	**0.0000**	**15.1923**	**15.1923**	**4.4200e-003**	**0.0000**	**15.3028**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3418					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7200e-003	0.0849	0.1147	1.7000e-004		3.4700e-003	3.4700e-003		3.4700e-003	3.4700e-003	0.0000	13.2774	13.2774	4.2900e-003	0.0000	13.3847
Total	**0.3455**	**0.0849**	**0.1147**	**1.7000e-004**		**3.4700e-003**	**3.4700e-003**		**3.4700e-003**	**3.4700e-003**	**0.0000**	**13.2774**	**13.2774**	**4.2900e-003**	**0.0000**	**13.3847**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1113**	**0.1458**	**2.3000e-004**		**5.6800e-003**	**5.6800e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**20.0276**	**20.0276**	**6.4800e-003**	**0.0000**	**20.1895**

Unmitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	3.3400e-003	0.1004	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.3400e-003**	**0.1004**	**0.1730**	**2.3000e-004**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**20.0275**	**20.0275**	**6.4800e-003**	**0.0000**	**20.1895**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1431	0.2212	1.1369	3.1700e-003	0.3341	2.5700e-003	0.3366	0.0894	2.4000e-003	0.0918	0.0000	306.9160	306.9160	0.0141	0.0000	307.2676
Unmitigated	0.1431	0.2212	1.1369	3.1700e-003	0.3341	2.5700e-003	0.3366	0.0894	2.4000e-003	0.0918	0.0000	306.9160	306.9160	0.0141	0.0000	307.2676

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	14.64	14.06	12.90	33,047	33,047
Congregate Care (Assisted Living)	392.20	314.82	348.74	865,958	865,958
Enclosed Parking with Elevator	0.00	0.00	0.00		
Total	406.84	328.88	361.64	899,005	899,005

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Congregate Care (Assisted Living)	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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.590598	0.052780	0.178080	0.107080	0.021013	0.005252	0.013411	0.022089	0.001622	0.001261	0.005132	0.000923	0.000759
Congregate Care (Assisted Living)	0.590598	0.052780	0.178080	0.107080	0.021013	0.005252	0.013411	0.022089	0.001622	0.001261	0.005132	0.000923	0.000759
Enclosed Parking with Elevator	0.590598	0.052780	0.178080	0.107080	0.021013	0.005252	0.013411	0.022089	0.001622	0.001261	0.005132	0.000923	0.000759

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	50.6584	50.6584	7.0000e-003	1.4500e-003	51.2646
NaturalGas Mitigated	5.0300e-003	0.0430	0.0183	2.7000e-004		3.4800e-003	3.4800e-003		3.4800e-003	3.4800e-003	0.0000	49.7917	49.7917	9.5000e-004	9.1000e-004	50.0876
NaturalGas Unmitigated	5.0300e-003	0.0430	0.0183	2.7000e-004		3.4800e-003	3.4800e-003		3.4800e-003	3.4800e-003	0.0000	49.7917	49.7917	9.5000e-004	9.1000e-004	50.0876

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	17278.9	9.0000e-005	8.0000e-004	3.4000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.9221	0.9221	2.0000e-005	2.0000e-005	0.9276
Congregate Care (Assisted Living)	915782	4.9400e-003	0.0422	0.0180	2.7000e-004		3.4100e-003	3.4100e-003		3.4100e-003	3.4100e-003	0.0000	48.8696	48.8696	9.4000e-004	9.0000e-004	49.1600
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
Total		**5.0300e-003**	**0.0430**	**0.0183**	**2.8000e-004**		**3.4700e-003**	**3.4700e-003**		**3.4700e-003**	**3.4700e-003**	**0.0000**	**49.7917**	**49.7917**	**9.6000e-004**	**9.2000e-004**	**50.0876**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	17278.9	9.0000e-005	8.0000e-004	3.4000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.9221	0.9221	2.0000e-005	2.0000e-005	0.9276
Congregate Care (Assisted Living)	915782	4.9400e-003	0.0422	0.0180	2.7000e-004		3.4100e-003	3.4100e-003		3.4100e-003	3.4100e-003	0.0000	48.8696	48.8696	9.4000e-004	9.0000e-004	49.1600
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
Total		**5.0300e-003**	**0.0430**	**0.0183**	**2.8000e-004**		**3.4700e-003**	**3.4700e-003**		**3.4700e-003**	**3.4700e-003**	**0.0000**	**49.7917**	**49.7917**	**9.6000e-004**	**9.2000e-004**	**50.0876**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

Apartments Mid Rise	8256.7	0.7865	1.1000e-004	2.0000e-005	0.7959
Congregate Care (Assisted Living)	437605	41.6838	5.7600e-003	1.1900e-003	42.1826
Enclosed Parking with Elevator	85960.3	8.1881	1.1300e-003	2.3000e-004	8.2861
Total		**50.6584**	**7.0000e-003**	**1.4400e-003**	**51.2646**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Congregate Care (Assisted Living)	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	0.3223	0.0130	0.8040	7.0000e-005		4.7400e-003	4.7400e-003		4.7400e-003	4.7400e-003	0.0000	5.6250	5.6250	1.3400e-003	8.0000e-005	5.6822
Unmitigated	0.3223	0.0130	0.8040	7.0000e-005		4.7400e-003	4.7400e-003		4.7400e-003	4.7400e-003	0.0000	5.6250	5.6250	1.3400e-003	8.0000e-005	5.6822

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	0.0456					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2521					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.4000e-004	3.7300e-003	1.5900e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	4.3145	4.3145	8.0000e-005	8.0000e-005	4.3401
Landscaping	0.0242	9.2500e-003	0.8024	4.0000e-005		4.4400e-003	4.4400e-003		4.4400e-003	4.4400e-003	0.0000	1.3106	1.3106	1.2600e-003	0.0000	1.3421
Total	**0.3223**	**0.0130**	**0.8040**	**6.0000e-005**		**4.7400e-003**	**4.7400e-003**		**4.7400e-003**	**4.7400e-003**	**0.0000**	**5.6250**	**5.6250**	**1.3400e-003**	**8.0000e-005**	**5.6822**

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	0.0456					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2521					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.4000e-004	3.7300e-003	1.5900e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	4.3145	4.3145	8.0000e-005	8.0000e-005	4.3401

Landscaping	0.0242	9.2500e-003	0.8024	4.0000e-005		4.4400e-003	4.4400e-003		4.4400e-003	4.4400e-003	0.0000	1.3106	1.3106	1.2600e-003	0.0000	1.3421
Total	**0.3223**	**0.0130**	**0.8040**	**6.0000e-005**		**4.7400e-003**	**4.7400e-003**		**4.7400e-003**	**4.7400e-003**	**0.0000**	**5.6250**	**5.6250**	**1.3400e-003**	**8.0000e-005**	**5.6822**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.5954	9.2700e-003	5.5600e-003	9.4841
Unmitigated	7.5954	9.2700e-003	5.5600e-003	9.4841

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0.130308 / 0.0821507	0.1407	1.7000e-004	1.0000e-004	0.1756
Congregate Care (Assisted Living)	6.90633 / 4.35399	7.4547	9.1000e-003	5.4600e-003	9.3084
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000

Total		7.5954	9.2700e-003	5.5600e-003	9.4841

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0.130308 / 0.0821507	0.1407	1.7000e-004	1.0000e-004	0.1756
Congregate Care (Assisted Living)	6.90633 / 4.35399	7.4547	9.1000e-003	5.4600e-003	9.3084
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**7.5954**	**9.2700e-003**	**5.5600e-003**	**9.4841**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	19.8200	1.1713	0.0000	49.1033
Unmitigated	19.8200	1.1713	0.0000	49.1033

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	0.92	0.1868	0.0110	0.0000	0.4627
Congregate Care (Assisted Living)	96.72	19.6333	1.1603	0.0000	48.6406
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**19.8200**	**1.1713**	**0.0000**	**49.1033**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	0.92	0.1868	0.0110	0.0000	0.4627
Congregate Care (Assisted Living)	96.72	19.6333	1.1603	0.0000	48.6406
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**19.8200**	**1.1713**	**0.0000**	**49.1033**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

1710 Moorpark Ave, San Jose - 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	37.00	Space	0.00	14,669.00	0
Apartments Mid Rise	2.00	Dwelling Unit	0.00	2,000.00	6
Congregate Care (Assisted Living)	106.00	Dwelling Unit	0.80	62,305.00	303

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/MWhr) 210 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2017 CO2 rate - 210

Land Use - Provided land uses - traffic & site plan, default acreage used doe defaults

Construction Phase - Provided construction schedule

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Trenching added

Trips and VMT - 0 trips EMFAC2017, 450 tons pavement demo = 90 one-way trips + 41 = 131 demo trips, 281 cement truck round trips, 296cy asphalt = 71 one-way trips

Demolition - existing building demo = 9,026sf

Grading - grading = 150cy export

Vehicle Trips - supportive care = 3.7, 2.97, 3.29, apt = 7.32, 7.03, 6.45

Vehicle Emission Factors - EMFAC2017

Woodstoves - No wood all gas

Water And Wastewater - WWTP 100% aerobic

Construction Off-road Equipment Mitigation - BMPs, Tier 4 interim mitigation

Energy Mitigation - SJCE 100% carbon free renewable energy

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
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tblConstructionPhase	NumDays	5.00	20.00
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tblConstructionPhase	PhaseEndDate	6/23/2021	3/4/2022
tblConstructionPhase	PhaseEndDate	6/9/2021	12/10/2021
tblConstructionPhase	PhaseEndDate	1/15/2021	1/29/2021
tblConstructionPhase	PhaseEndDate	1/20/2021	4/2/2021
tblConstructionPhase	PhaseEndDate	6/16/2021	4/1/2022
tblConstructionPhase	PhaseEndDate	1/18/2021	2/19/2021
tblConstructionPhase	PhaseStartDate	6/17/2021	12/11/2021
tblConstructionPhase	PhaseStartDate	1/21/2021	4/3/2021
tblConstructionPhase	PhaseStartDate	1/19/2021	2/20/2021
tblConstructionPhase	PhaseStartDate	6/10/2021	3/5/2022
tblConstructionPhase	PhaseStartDate	1/16/2021	1/30/2021

tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
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tblFireplaces	NumberGas	15.90	33.92
tblFireplaces	NumberWood	0.34	0.00
tblFireplaces	NumberWood	18.02	0.00
tblFleetMix	HHD	0.02	0.02
tblFleetMix	HHD	0.02	0.02
tblFleetMix	HHD	0.02	0.02
tblFleetMix	LDA	0.62	0.60
tblFleetMix	LDA	0.62	0.60
tblFleetMix	LDA	0.62	0.60
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD2	5.0600e-003	5.5563e-003
tblFleetMix	LHD2	5.0600e-003	5.5563e-003
tblFleetMix	LHD2	5.0600e-003	5.5563e-003
tblFleetMix	MCY	5.1220e-003	4.7803e-003
tblFleetMix	MCY	5.1220e-003	4.7803e-003
tblFleetMix	MCY	5.1220e-003	4.7803e-003
tblFleetMix	MDV	0.10	0.11
tblFleetMix	MDV	0.10	0.11
tblFleetMix	MDV	0.10	0.11

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tblFleetMix	MHD	0.01	0.01
tblFleetMix	MHD	0.01	0.01
tblFleetMix	OBUS	2.2210e-003	1.4429e-003
tblFleetMix	OBUS	2.2210e-003	1.4429e-003
tblFleetMix	OBUS	2.2210e-003	1.4429e-003
tblFleetMix	SBUS	6.4600e-004	9.0041e-004
tblFleetMix	SBUS	6.4600e-004	9.0041e-004
tblFleetMix	SBUS	6.4600e-004	9.0041e-004
tblFleetMix	UBUS	1.4700e-003	1.1782e-003
tblFleetMix	UBUS	1.4700e-003	1.1782e-003
tblFleetMix	UBUS	1.4700e-003	1.1782e-003
tblGrading	AcresOfGrading	30.00	1.00
tblGrading	MaterialExported	0.00	150.00
tblLandUse	LandUseSquareFeet	14,800.00	14,669.00
tblLandUse	LandUseSquareFeet	106,000.00	62,305.00
tblLandUse	LotAcreage	0.33	0.00
tblLandUse	LotAcreage	0.05	0.00
tblLandUse	LotAcreage	6.63	0.80
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Welders

tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	4.00	0.90
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	5.30
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210

tblTripsAndVMT	HaulingTripNumber	41.00	0.00
tblTripsAndVMT	HaulingTripNumber	19.00	0.00
tblTripsAndVMT	VendorTripNumber	14.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	84.00	0.00
tblTripsAndVMT	WorkerTripNumber	17.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblVehicleEF	HHD	0.27	0.02
tblVehicleEF	HHD	0.06	0.05
tblVehicleEF	HHD	0.06	0.00
tblVehicleEF	HHD	1.43	6.28
tblVehicleEF	HHD	0.94	0.41
tblVehicleEF	HHD	4.01	6.6850e-003
tblVehicleEF	HHD	4,037.05	930.05
tblVehicleEF	HHD	1,498.85	1,226.35
tblVehicleEF	HHD	12.27	0.05
tblVehicleEF	HHD	12.16	5.20
tblVehicleEF	HHD	1.59	2.52
tblVehicleEF	HHD	19.20	2.31
tblVehicleEF	HHD	3.6830e-003	2.1460e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.6600e-003	0.02
tblVehicleEF	HHD	1.3500e-004	1.0000e-006
tblVehicleEF	HHD	3.5230e-003	2.0530e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8550e-003	8.9050e-003

tblVehicleEF	HHD	5.4140e-003	0.02
tblVehicleEF	HHD	1.2400e-004	1.0000e-006
tblVehicleEF	HHD	1.0100e-004	1.0000e-006
tblVehicleEF	HHD	4.6010e-003	5.8000e-005
tblVehicleEF	HHD	0.37	0.42
tblVehicleEF	HHD	6.4000e-005	1.0000e-006
tblVehicleEF	HHD	0.08	0.02
tblVehicleEF	HHD	4.1900e-004	2.8400e-004
tblVehicleEF	HHD	0.07	2.0000e-006
tblVehicleEF	HHD	0.04	8.6530e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	1.8800e-004	1.0000e-006
tblVehicleEF	HHD	1.0100e-004	1.0000e-006
tblVehicleEF	HHD	4.6010e-003	5.8000e-005
tblVehicleEF	HHD	0.43	0.49
tblVehicleEF	HHD	6.4000e-005	1.0000e-006
tblVehicleEF	HHD	0.15	0.07
tblVehicleEF	HHD	4.1900e-004	2.8400e-004
tblVehicleEF	HHD	0.08	2.0000e-006
tblVehicleEF	LDA	1.8990e-003	9.5900e-004
tblVehicleEF	LDA	2.1050e-003	0.03
tblVehicleEF	LDA	0.33	0.41
tblVehicleEF	LDA	0.63	1.72
tblVehicleEF	LDA	181.37	199.86
tblVehicleEF	LDA	42.51	42.17
tblVehicleEF	LDA	0.03	0.02
tblVehicleEF	LDA	0.03	0.13
tblVehicleEF	LDA	1.1470e-003	9.2900e-004
tblVehicleEF	LDA	1.8260e-003	1.2750e-003
tblVehicleEF	LDA	1.0560e-003	8.5500e-004

tblVehicleEF	LDA	1.6790e-003	1.1720e-003
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	4.7560e-003	3.2470e-003
tblVehicleEF	LDA	0.03	0.17
tblVehicleEF	LDA	0.03	0.12
tblVehicleEF	LDA	1.8150e-003	9.0000e-005
tblVehicleEF	LDA	4.3500e-004	0.00
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	6.9190e-003	4.7160e-003
tblVehicleEF	LDA	0.03	0.17
tblVehicleEF	LDA	0.03	0.13
tblVehicleEF	LDT1	3.6800e-003	1.6710e-003
tblVehicleEF	LDT1	4.5270e-003	0.04
tblVehicleEF	LDT1	0.55	0.54
tblVehicleEF	LDT1	1.12	1.85
tblVehicleEF	LDT1	233.07	241.46
tblVehicleEF	LDT1	54.62	51.55
tblVehicleEF	LDT1	0.05	0.03
tblVehicleEF	LDT1	0.06	0.15
tblVehicleEF	LDT1	1.4520e-003	1.0700e-003
tblVehicleEF	LDT1	2.1870e-003	1.4610e-003
tblVehicleEF	LDT1	1.3350e-003	9.8400e-004
tblVehicleEF	LDT1	2.0110e-003	1.3440e-003
tblVehicleEF	LDT1	0.05	0.05
tblVehicleEF	LDT1	0.12	0.09
tblVehicleEF	LDT1	0.04	0.04

tblVehicleEF	LDT1	9.1170e-003	6.5000e-003
tblVehicleEF	LDT1	0.09	0.36
tblVehicleEF	LDT1	0.06	0.15
tblVehicleEF	LDT1	2.3350e-003	2.5670e-003
tblVehicleEF	LDT1	5.6500e-004	0.00
tblVehicleEF	LDT1	0.05	0.05
tblVehicleEF	LDT1	0.12	0.09
tblVehicleEF	LDT1	0.04	0.04
tblVehicleEF	LDT1	0.01	9.4830e-003
tblVehicleEF	LDT1	0.09	0.36
tblVehicleEF	LDT1	0.07	0.17
tblVehicleEF	LDT2	2.9960e-003	1.7260e-003
tblVehicleEF	LDT2	3.1970e-003	0.04
tblVehicleEF	LDT2	0.49	0.56
tblVehicleEF	LDT2	0.89	2.29
tblVehicleEF	LDT2	264.16	249.80
tblVehicleEF	LDT2	61.38	53.79
tblVehicleEF	LDT2	0.04	0.03
tblVehicleEF	LDT2	0.05	0.17
tblVehicleEF	LDT2	1.3060e-003	1.0250e-003
tblVehicleEF	LDT2	2.0190e-003	1.3400e-003
tblVehicleEF	LDT2	1.2010e-003	9.4400e-004
tblVehicleEF	LDT2	1.8570e-003	1.2320e-003
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.07	0.09
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	7.4390e-003	6.5530e-003
tblVehicleEF	LDT2	0.06	0.34
tblVehicleEF	LDT2	0.04	0.18
tblVehicleEF	LDT2	2.6450e-003	9.4800e-003

tblVehicleEF	LDT2	6.2800e-004	8.5000e-005
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.07	0.09
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.01	9.5240e-003
tblVehicleEF	LDT2	0.06	0.34
tblVehicleEF	LDT2	0.05	0.20
tblVehicleEF	LHD1	3.9820e-003	4.1480e-003
tblVehicleEF	LHD1	8.6490e-003	5.1950e-003
tblVehicleEF	LHD1	0.01	9.0230e-003
tblVehicleEF	LHD1	0.14	0.18
tblVehicleEF	LHD1	0.61	0.47
tblVehicleEF	LHD1	1.67	0.89
tblVehicleEF	LHD1	8.93	8.25
tblVehicleEF	LHD1	641.43	698.55
tblVehicleEF	LHD1	26.94	10.09
tblVehicleEF	LHD1	0.06	0.05
tblVehicleEF	LHD1	0.53	0.30
tblVehicleEF	LHD1	0.67	0.23
tblVehicleEF	LHD1	7.8900e-004	9.1500e-004
tblVehicleEF	LHD1	0.01	9.9010e-003
tblVehicleEF	LHD1	0.01	7.0190e-003
tblVehicleEF	LHD1	6.6500e-004	2.1000e-004
tblVehicleEF	LHD1	7.5500e-004	8.7500e-004
tblVehicleEF	LHD1	2.6030e-003	2.4750e-003
tblVehicleEF	LHD1	9.7020e-003	6.6710e-003
tblVehicleEF	LHD1	6.1100e-004	1.9300e-004
tblVehicleEF	LHD1	1.8620e-003	1.4030e-003
tblVehicleEF	LHD1	0.08	0.05
tblVehicleEF	LHD1	0.01	0.02

tblVehicleEF	LHD1	1.0210e-003	7.7200e-004
tblVehicleEF	LHD1	0.10	0.07
tblVehicleEF	LHD1	0.26	0.43
tblVehicleEF	LHD1	0.15	0.04
tblVehicleEF	LHD1	8.9000e-005	8.0000e-005
tblVehicleEF	LHD1	6.2670e-003	6.8120e-003
tblVehicleEF	LHD1	3.0000e-004	1.0000e-004
tblVehicleEF	LHD1	1.8620e-003	1.4030e-003
tblVehicleEF	LHD1	0.08	0.05
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.0210e-003	7.7200e-004
tblVehicleEF	LHD1	0.11	0.09
tblVehicleEF	LHD1	0.26	0.43
tblVehicleEF	LHD1	0.16	0.05
tblVehicleEF	LHD2	2.5430e-003	2.5050e-003
tblVehicleEF	LHD2	5.3180e-003	5.3390e-003
tblVehicleEF	LHD2	3.2330e-003	4.8110e-003
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.45	0.49
tblVehicleEF	LHD2	0.88	0.48
tblVehicleEF	LHD2	13.62	13.00
tblVehicleEF	LHD2	675.95	679.81
tblVehicleEF	LHD2	21.83	6.44
tblVehicleEF	LHD2	0.07	0.07
tblVehicleEF	LHD2	0.22	0.38
tblVehicleEF	LHD2	0.26	0.12
tblVehicleEF	LHD2	1.0460e-003	1.5020e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	9.3120e-003	0.01
tblVehicleEF	LHD2	3.7400e-004	1.0600e-004

tblVehicleEF	LHD2	1.0000e-003	1.4370e-003
tblVehicleEF	LHD2	2.7080e-003	2.7110e-003
tblVehicleEF	LHD2	8.8860e-003	0.01
tblVehicleEF	LHD2	3.4400e-004	9.8000e-005
tblVehicleEF	LHD2	5.1500e-004	6.4200e-004
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.0800e-004	3.7400e-004
tblVehicleEF	LHD2	0.09	0.10
tblVehicleEF	LHD2	0.04	0.14
tblVehicleEF	LHD2	0.04	0.02
tblVehicleEF	LHD2	1.3300e-004	1.2400e-004
tblVehicleEF	LHD2	6.5670e-003	6.5570e-003
tblVehicleEF	LHD2	2.3300e-004	6.4000e-005
tblVehicleEF	LHD2	5.1500e-004	6.4200e-004
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.0800e-004	3.7400e-004
tblVehicleEF	LHD2	0.11	0.11
tblVehicleEF	LHD2	0.04	0.14
tblVehicleEF	LHD2	0.05	0.02
tblVehicleEF	MCY	0.46	0.32
tblVehicleEF	MCY	0.16	0.25
tblVehicleEF	MCY	17.52	17.61
tblVehicleEF	MCY	10.34	9.20
tblVehicleEF	MCY	171.38	209.76
tblVehicleEF	MCY	42.85	59.23
tblVehicleEF	MCY	1.14	1.14
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.1570e-003	2.1380e-003

tblVehicleEF	MCY	3.3210e-003	2.8620e-003
tblVehicleEF	MCY	2.0120e-003	1.9940e-003
tblVehicleEF	MCY	3.1070e-003	2.6760e-003
tblVehicleEF	MCY	0.88	1.79
tblVehicleEF	MCY	0.61	0.63
tblVehicleEF	MCY	0.46	0.95
tblVehicleEF	MCY	2.12	2.13
tblVehicleEF	MCY	0.46	1.49
tblVehicleEF	MCY	2.11	1.88
tblVehicleEF	MCY	2.0640e-003	2.0760e-003
tblVehicleEF	MCY	6.5900e-004	5.8600e-004
tblVehicleEF	MCY	0.88	1.79
tblVehicleEF	MCY	0.61	0.63
tblVehicleEF	MCY	0.46	0.95
tblVehicleEF	MCY	2.66	2.67
tblVehicleEF	MCY	0.46	1.49
tblVehicleEF	MCY	2.30	2.04
tblVehicleEF	MDV	5.1180e-003	1.7720e-003
tblVehicleEF	MDV	7.2260e-003	0.04
tblVehicleEF	MDV	0.68	0.55
tblVehicleEF	MDV	1.51	2.32
tblVehicleEF	MDV	358.67	301.13
tblVehicleEF	MDV	82.28	63.46
tblVehicleEF	MDV	0.07	0.04
tblVehicleEF	MDV	0.11	0.18
tblVehicleEF	MDV	1.3880e-003	1.0340e-003
tblVehicleEF	MDV	2.0820e-003	1.3440e-003
tblVehicleEF	MDV	1.2780e-003	9.5400e-004
tblVehicleEF	MDV	1.9150e-003	1.2360e-003
tblVehicleEF	MDV	0.05	0.06

tblVehicleEF	MDV	0.13	0.10
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.01	6.8870e-003
tblVehicleEF	MDV	0.09	0.34
tblVehicleEF	MDV	0.10	0.20
tblVehicleEF	MDV	3.5870e-003	2.9760e-003
tblVehicleEF	MDV	8.4800e-004	6.2800e-004
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.13	0.10
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.02	9.9830e-003
tblVehicleEF	MDV	0.09	0.34
tblVehicleEF	MDV	0.11	0.22
tblVehicleEF	MH	8.2310e-003	5.0270e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.45	0.31
tblVehicleEF	MH	3.72	1.64
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tblVehicleEF	MH	0.62	0.24
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	8.8300e-004	2.1200e-004
tblVehicleEF	MH	3.2210e-003	3.2970e-003
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	8.1200e-004	1.9500e-004
tblVehicleEF	MH	0.46	0.35
tblVehicleEF	MH	0.04	0.03
tblVehicleEF	MH	0.18	0.14

tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	0.01	0.54
tblVehicleEF	MH	0.22	0.07
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.3200e-004	1.5400e-004
tblVehicleEF	MH	0.46	0.35
tblVehicleEF	MH	0.04	0.03
tblVehicleEF	MH	0.18	0.14
tblVehicleEF	MH	0.05	0.05
tblVehicleEF	MH	0.01	0.54
tblVehicleEF	MH	0.24	0.08
tblVehicleEF	MHD	0.02	3.8320e-003
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tblVehicleEF	MHD	1.04	1.43
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tblVehicleEF	MHD	5.2000e-005	1.6200e-004
tblVehicleEF	MHD	3.0080e-003	7.0060e-003
tblVehicleEF	MHD	8.2100e-004	1.1200e-004
tblVehicleEF	MHD	5.0000e-005	1.5500e-004
tblVehicleEF	MHD	2.8710e-003	6.6960e-003
tblVehicleEF	MHD	7.5400e-004	1.0300e-004
tblVehicleEF	MHD	6.4300e-004	2.8900e-004

tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	3.8200e-004	1.6800e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.23	0.04
tblVehicleEF	MHD	1.2710e-003	6.1800e-004
tblVehicleEF	MHD	0.01	9.4800e-003
tblVehicleEF	MHD	6.6000e-004	8.5000e-005
tblVehicleEF	MHD	6.4300e-004	2.8900e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.03	0.03
tblVehicleEF	MHD	3.8200e-004	1.6800e-004
tblVehicleEF	MHD	0.05	0.01
tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.25	0.05
tblVehicleEF	OBUS	0.01	7.0980e-003
tblVehicleEF	OBUS	4.0840e-003	2.1970e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.24	0.64
tblVehicleEF	OBUS	0.30	0.26
tblVehicleEF	OBUS	4.08	1.58
tblVehicleEF	OBUS	110.55	97.36
tblVehicleEF	OBUS	1,272.30	1,210.85
tblVehicleEF	OBUS	64.94	13.46
tblVehicleEF	OBUS	0.24	0.43
tblVehicleEF	OBUS	0.85	1.45
tblVehicleEF	OBUS	2.74	1.13
tblVehicleEF	OBUS	2.2000e-005	1.4200e-004
tblVehicleEF	OBUS	2.8340e-003	7.8820e-003

tblVehicleEF	OBUS	9.3800e-004	1.5600e-004
tblVehicleEF	OBUS	2.1000e-005	1.3600e-004
tblVehicleEF	OBUS	2.6900e-003	7.5260e-003
tblVehicleEF	OBUS	8.6200e-004	1.4400e-004
tblVehicleEF	OBUS	1.1660e-003	1.0620e-003
tblVehicleEF	OBUS	0.01	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	5.3200e-004	4.8700e-004
tblVehicleEF	OBUS	0.04	0.02
tblVehicleEF	OBUS	0.03	0.18
tblVehicleEF	OBUS	0.26	0.08
tblVehicleEF	OBUS	1.0660e-003	9.2400e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.2100e-004	1.3300e-004
tblVehicleEF	OBUS	1.1660e-003	1.0620e-003
tblVehicleEF	OBUS	0.01	0.02
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	5.3200e-004	4.8700e-004
tblVehicleEF	OBUS	0.05	0.02
tblVehicleEF	OBUS	0.03	0.18
tblVehicleEF	OBUS	0.28	0.08
tblVehicleEF	SBUS	0.81	0.07
tblVehicleEF	SBUS	7.6490e-003	4.4040e-003
tblVehicleEF	SBUS	0.06	6.3380e-003
tblVehicleEF	SBUS	8.87	2.93
tblVehicleEF	SBUS	0.48	0.37
tblVehicleEF	SBUS	7.57	0.86
tblVehicleEF	SBUS	1,023.58	337.48
tblVehicleEF	SBUS	1,008.60	970.50
tblVehicleEF	SBUS	61.81	5.06

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tblVehicleEF	SBUS	1.72	3.09
tblVehicleEF	SBUS	10.76	1.18
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tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	8.4940e-003	0.02
tblVehicleEF	SBUS	1.1020e-003	6.8000e-005
tblVehicleEF	SBUS	2.0920e-003	1.9600e-003
tblVehicleEF	SBUS	2.5880e-003	2.6690e-003
tblVehicleEF	SBUS	8.1060e-003	0.02
tblVehicleEF	SBUS	1.0130e-003	6.2000e-005
tblVehicleEF	SBUS	3.7080e-003	8.7000e-004
tblVehicleEF	SBUS	0.03	8.3040e-003
tblVehicleEF	SBUS	1.05	0.32
tblVehicleEF	SBUS	1.7580e-003	4.1400e-004
tblVehicleEF	SBUS	0.07	0.06
tblVehicleEF	SBUS	0.02	0.05
tblVehicleEF	SBUS	0.40	0.04
tblVehicleEF	SBUS	0.01	3.2190e-003
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tblVehicleEF	SBUS	7.4900e-004	5.0000e-005
tblVehicleEF	SBUS	3.7080e-003	8.7000e-004
tblVehicleEF	SBUS	0.03	8.3040e-003
tblVehicleEF	SBUS	1.53	0.46
tblVehicleEF	SBUS	1.7580e-003	4.1400e-004
tblVehicleEF	SBUS	0.08	0.07
tblVehicleEF	SBUS	0.02	0.05
tblVehicleEF	SBUS	0.43	0.04
tblVehicleEF	UBUS	0.23	1.86
tblVehicleEF	UBUS	0.05	2.1860e-003

tblVehicleEF	UBUS	3.04	14.11
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tblVehicleEF	UBUS	1,937.16	1,668.67
tblVehicleEF	UBUS	126.43	1.40
tblVehicleEF	UBUS	4.75	0.71
tblVehicleEF	UBUS	13.02	0.02
tblVehicleEF	UBUS	0.54	0.07
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.10	5.1160e-003
tblVehicleEF	UBUS	1.3960e-003	1.5000e-005
tblVehicleEF	UBUS	0.23	0.03
tblVehicleEF	UBUS	3.0000e-003	8.3320e-003
tblVehicleEF	UBUS	0.10	4.8930e-003
tblVehicleEF	UBUS	1.2840e-003	1.4000e-005
tblVehicleEF	UBUS	2.5990e-003	6.1000e-005
tblVehicleEF	UBUS	0.04	8.1400e-004
tblVehicleEF	UBUS	1.5170e-003	3.6000e-005
tblVehicleEF	UBUS	0.23	0.03
tblVehicleEF	UBUS	9.4350e-003	4.9280e-003
tblVehicleEF	UBUS	0.65	9.2610e-003
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	1.4020e-003	1.4000e-005
tblVehicleEF	UBUS	2.5990e-003	6.1000e-005
tblVehicleEF	UBUS	0.04	8.1400e-004
tblVehicleEF	UBUS	1.5170e-003	3.6000e-005
tblVehicleEF	UBUS	0.48	1.90
tblVehicleEF	UBUS	9.4350e-003	4.9280e-003
tblVehicleEF	UBUS	0.71	0.01
tblVehicleTrips	ST_TR	6.39	7.03
tblVehicleTrips	ST_TR	2.20	2.97

tblVehicleTrips	SU_TR	5.86	6.45
tblVehicleTrips	SU_TR	2.44	3.29
tblVehicleTrips	WD_TR	6.65	7.32
tblVehicleTrips	WD_TR	2.74	3.70
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
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
Category	tons/yr										MT/yr					
Area	0.3221	0.0130	0.8017	7.0000e-005		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	5.6250	5.6250	1.3300e-003	8.0000e-005	5.6819
Energy	5.0300e-003	0.0430	0.0183	2.7000e-004		3.4800e-003	3.4800e-003		3.4800e-003	3.4800e-003	0.0000	100.4501	100.4501	7.9500e-003	2.3600e-003	101.3522
Mobile	0.1006	0.1749	0.8615	2.7800e-003	0.3342	2.0200e-003	0.3362	0.0894	1.8900e-003	0.0913	0.0000	255.8682	255.8682	0.0102	0.0000	256.1227
Waste						0.0000	0.0000		0.0000	0.0000	19.8200	0.0000	19.8200	1.1713	0.0000	49.1033

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Water						0.0000	0.0000		0.0000	0.0000	2.4896	5.1058	7.5954	9.2700e-003	5.5600e-003	9.4841
Total	**0.4277**	**0.2309**	**1.6815**	**3.1200e-003**	**0.3342**	**0.0103**	**0.3444**	**0.0894**	**0.0101**	**0.0995**	**22.3096**	**367.0491**	**389.3587**	**1.2001**	**8.0000e-003**	**421.7442**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3221	0.0130	0.8017	7.0000e-005		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	5.6250	5.6250	1.3300e-003	8.0000e-005	5.6819
Energy	5.0300e-003	0.0430	0.0183	2.7000e-004		3.4800e-003	3.4800e-003		3.4800e-003	3.4800e-003	0.0000	49.7917	49.7917	9.5000e-004	9.1000e-004	50.0876
Mobile	0.1006	0.1749	0.8615	2.7800e-003	0.3342	2.0200e-003	0.3362	0.0894	1.8900e-003	0.0913	0.0000	255.8682	255.8682	0.0102	0.0000	256.1227
Waste						0.0000	0.0000		0.0000	0.0000	19.8200	0.0000	19.8200	1.1713	0.0000	49.1033
Water						0.0000	0.0000		0.0000	0.0000	2.4896	5.1058	7.5954	9.2700e-003	5.5600e-003	9.4841
Total	**0.4277**	**0.2309**	**1.6815**	**3.1200e-003**	**0.3342**	**0.0103**	**0.3444**	**0.0894**	**0.0101**	**0.0995**	**22.3096**	**316.3907**	**338.7003**	**1.1931**	**6.5500e-003**	**370.4796**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**13.80**	**13.01**	**0.58**	**18.13**	**12.16**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Mitigated	0.1006	0.1749	0.8615	2.7800e-003	0.3342	2.0200e-003	0.3362	0.0894	1.8900e-003	0.0913	0.0000	255.8682	255.8682	0.0102	0.0000	256.1227
Unmitigated	0.1006	0.1749	0.8615	2.7800e-003	0.3342	2.0200e-003	0.3362	0.0894	1.8900e-003	0.0913	0.0000	255.8682	255.8682	0.0102	0.0000	256.1227

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	14.64	14.06	12.90	33,047	33,047
Congregate Care (Assisted Living)	392.20	314.82	348.74	865,958	865,958
Enclosed Parking with Elevator	0.00	0.00	0.00		
Total	406.84	328.88	361.64	899,005	899,005

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Congregate Care (Assisted Living)	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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.595423	0.053963	0.171400	0.106522	0.021043	0.005556	0.013639	0.023425	0.001443	0.001178	0.004780	0.000900	0.000728
Congregate Care (Assisted Living)	0.595423	0.053963	0.171400	0.106522	0.021043	0.005556	0.013639	0.023425	0.001443	0.001178	0.004780	0.000900	0.000728
Enclosed Parking with Elevator	0.595423	0.053963	0.171400	0.106522	0.021043	0.005556	0.013639	0.023425	0.001443	0.001178	0.004780	0.000900	0.000728

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	50.6584	50.6584	7.0000e-003	1.4500e-003	51.2646
NaturalGas Mitigated	5.0300e-003	0.0430	0.0183	2.7000e-004		3.4800e-003	3.4800e-003		3.4800e-003	3.4800e-003	0.0000	49.7917	49.7917	9.5000e-004	9.1000e-004	50.0876
NaturalGas Unmitigated	5.0300e-003	0.0430	0.0183	2.7000e-004		3.4800e-003	3.4800e-003		3.4800e-003	3.4800e-003	0.0000	49.7917	49.7917	9.5000e-004	9.1000e-004	50.0876

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	17278.9	9.0000e-005	8.0000e-004	3.4000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.9221	0.9221	2.0000e-005	2.0000e-005	0.9276
Congregate Care (Assisted Living)	915782	4.9400e-003	0.0422	0.0180	2.7000e-004		3.4100e-003	3.4100e-003		3.4100e-003	3.4100e-003	0.0000	48.8696	48.8696	9.4000e-004	9.0000e-004	49.1600
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
Total		**5.0300e-003**	**0.0430**	**0.0183**	**2.8000e-004**		**3.4700e-003**	**3.4700e-003**		**3.4700e-003**	**3.4700e-003**	**0.0000**	**49.7917**	**49.7917**	**9.6000e-004**	**9.2000e-004**	**50.0876**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	17278.9	9.0000e-005	8.0000e-004	3.4000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.9221	0.9221	2.0000e-005	2.0000e-005	0.9276
Congregate Care (Assisted Living)	915782	4.9400e-003	0.0422	0.0180	2.7000e-004		3.4100e-003	3.4100e-003		3.4100e-003	3.4100e-003	0.0000	48.8696	48.8696	9.4000e-004	9.0000e-004	49.1600
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
Total		**5.0300e-003**	**0.0430**	**0.0183**	**2.8000e-004**		**3.4700e-003**	**3.4700e-003**		**3.4700e-003**	**3.4700e-003**	**0.0000**	**49.7917**	**49.7917**	**9.6000e-004**	**9.2000e-004**	**50.0876**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	8256.7	0.7865	1.1000e-004	2.0000e-005	0.7959
Congregate Care (Assisted Living)	437605	41.6838	5.7600e-003	1.1900e-003	42.1826
Enclosed Parking with Elevator	85960.3	8.1881	1.1300e-003	2.3000e-004	8.2861
Total		**50.6584**	**7.0000e-003**	**1.4400e-003**	**51.2646**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Congregate Care (Assisted Living)	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3221	0.0130	0.8017	7.0000e-005		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	5.6250	5.6250	1.3300e-003	8.0000e-005	5.6819
Unmitigated	0.3221	0.0130	0.8017	7.0000e-005		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	5.6250	5.6250	1.3300e-003	8.0000e-005	5.6819

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	0.0456					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2521					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.4000e-004	3.7300e-003	1.5900e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	4.3145	4.3145	8.0000e-005	8.0000e-005	4.3401
Landscaping	0.0240	9.2200e-003	0.8001	4.0000e-005		4.4500e-003	4.4500e-003		4.4500e-003	4.4500e-003	0.0000	1.3106	1.3106	1.2500e-003	0.0000	1.3418
Total	**0.3221**	**0.0130**	**0.8017**	**6.0000e-005**		**4.7500e-003**	**4.7500e-003**		**4.7500e-003**	**4.7500e-003**	**0.0000**	**5.6250**	**5.6250**	**1.3300e-003**	**8.0000e-005**	**5.6819**

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	0.0456					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2521					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.4000e-004	3.7300e-003	1.5900e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	4.3145	4.3145	8.0000e-005	8.0000e-005	4.3401
Landscaping	0.0240	9.2200e-003	0.8001	4.0000e-005		4.4500e-003	4.4500e-003		4.4500e-003	4.4500e-003	0.0000	1.3106	1.3106	1.2500e-003	0.0000	1.3418
Total	**0.3221**	**0.0130**	**0.8017**	**6.0000e-005**		**4.7500e-003**	**4.7500e-003**		**4.7500e-003**	**4.7500e-003**	**0.0000**	**5.6250**	**5.6250**	**1.3300e-003**	**8.0000e-005**	**5.6819**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e

Category	MT/yr			
Mitigated	7.5954	9.2700e-003	5.5600e-003	9.4841
Unmitigated	7.5954	9.2700e-003	5.5600e-003	9.4841

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0.130308 / 0.0821507	0.1407	1.7000e-004	1.0000e-004	0.1756
Congregate Care (Assisted Living)	6.90633 / 4.35399	7.4547	9.1000e-003	5.4600e-003	9.3084
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**7.5954**	**9.2700e-003**	**5.5600e-003**	**9.4841**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0.130308 / 0.0821507	0.1407	1.7000e-004	1.0000e-004	0.1756
Congregate Care (Assisted Living)	6.90633 / 4.35399	7.4547	9.1000e-003	5.4600e-003	9.3084
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000

Total		7.5954	9.2700e-003	5.5600e-003	9.4841

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	19.8200	1.1713	0.0000	49.1033
Unmitigated	19.8200	1.1713	0.0000	49.1033

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	0.92	0.1868	0.0110	0.0000	0.4627
Congregate Care (Assisted Living)	96.72	19.6333	1.1603	0.0000	48.6406
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**19.8200**	**1.1713**	**0.0000**	**49.1033**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	0.92	0.1868	0.0110	0.0000	0.4627
Congregate Care (Assisted Living)	96.72	19.6333	1.1603	0.0000	48.6406
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**19.8200**	**1.1713**	**0.0000**	**49.1033**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 3: EMFAC2017 Calculations

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	13	0	260	0	131	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	2808	0	2620
Site Preparation	10	0	150	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1620	0	0
Grading	13	0	390	0	19	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	4212	0	380
Trenching	5	0	100	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1080	0	0
Building Construction	84	14	15120	2520	562	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	163296	18396	4102.6
Architectural Coating	17	0	1020	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	11016	0	0
Paving	15	0	300	0	71	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	3240	0	518.3

Number of Days Per Year				
2021	1/4/21	12/31/21	362	
2022	1/1/22	4/1/22	91	
			453	**325** ***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	1/4/2021	1/29/2021	5	20
Site Preparation	1/30/2021	2/19/2021	5	15
Grading	2/20/2021	4/2/2021	5	30
Trenching	2/20/2021	3/19/2020	5	20
Building Construction	4/3/2021	12/10/2021	5	180
Architectural Coating	12/11/2021	3/4/2022	5	60
Paving	3/5/2022	4/1/2022	5	20

Summary of Construction Traffic Emissions (EMFAC2017)

Pollutants YEAR	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
					Tons						*Metric Tons*
Criteria Pollutants											
2021	0.0189	0.1175	0.1908	0.0008	0.0562	0.0117	0.0678	0.0085	0.0056	0.0140	74.5459
2022	0.0041	0.0254	0.0441	0.0002	0.0141	0.0028	0.0169	0.0021	0.0012	0.0034	18.2248
Toxic Air Contaminants (1 Mile Trip Length)											
2021	0.0140	0.0331	0.0640	0.0001	0.0054	0.0013	0.0067	0.0008	0.0006	0.0015	10.5676
2022	0.0032	0.0078	0.0156	0.0000	0.0014	0.0003	0.0017	0.0002	0.0001	0.0003	2.6044

CalEEMod EMFAC2017 Emission Factors Input

Year 2023

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.005162	0.003155	0.003545	0.024833819	0.007063	0	0	0.051479	0
A	CH4_RUNEX	0.001958	0.004163	0.003245	0.00391	0.008545	0.00706	0.001932	0.049536467	0.004013	1.348781	0.326994	0.006356	0.0108
A	CH4_STREX	0.047744	0.063181	0.066279	0.077681	0.015	0.008431	0.009487	4.90854E-07	0.017607	0.001417	0.255241	0.004783	0.023194
A	CO_IDLEX	0	0	0	0	0.185249	0.138442	0.388783	6.342287544	0.573374	0	0	2.176398	0
A	CO_RUNEX	0.56207	0.946438	0.787567	0.865358	0.768919	0.621061	0.261063	0.395696608	0.470154	10.11652	18.86893	0.51865	1.109312
A	CO_STREX	2.160562	2.346256	2.785419	3.129575	1.083381	0.63132	1.136225	0.005919328	1.895072	0.139137	9.034026	0.699825	2.132057
A	CO2_NBIO_IDLEX	0	0	0	0	8.942095	14.00074	73.35401	1065.376459	91.92835	0	0	347.3949	0
A	CO2_NBIO_RUNEX	242.2278	289.2637	312.8205	378.6349	794.1566	768.7296	1095.065	1436.676046	1341.742	1597.13	210.1672	1060.994	1532.749
A	CO2_NBIO_STREX	51.36962	62.08836	67.72596	80.99621	11.82811	7.832833	9.380273	0.049284883	15.47806	1.390925	61.03922	3.981795	18.67936
A	NOX_IDLEX	0	0	0	0	0.058295	0.098034	0.431519	5.438234036	0.369473	0	0	3.527869	0
A	NOX_RUNEX	0.033072	0.078073	0.067378	0.083492	0.730308	0.876464	1.444056	2.680938629	1.441249	0.728908	1.148719	4.873886	1.363761
A	NOX_STREX	0.176158	0.230265	0.270417	0.324369	0.321259	0.182356	1.696526	2.321334599	1.089647	0.010032	0.270672	0.811844	0.245583
A	PM10_IDLEX	0	0	0	0	0.000825	0.001423	0.000427	0.00267045	0.00012	0	0	0.003905	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060919337	0.13034	0.069383	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009747	0.01075	0.012	0.03551304	0.012	0.033326	0.004	0.010909	0.013099
A	PM10_RUNEX	0.001356	0.001766	0.001389	0.001511	0.01021	0.015665	0.006955	0.024670765	0.007029	0.005328	0.001969	0.031247	0.023972
A	PM10_STREX	0.001744	0.002244	0.001745	0.001909	0.000258	0.000133	0.000119	7.19411E-07	0.000142	1.52E-05	0.003039	4.55E-05	0.000274
A	PM25_IDLEX	0	0	0	0	0.00079	0.001361	0.000409	0.002554927	0.000115	0	0	0.003736	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026108287	0.05586	0.029736	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002437	0.002688	0.003	0.00887826	0.003	0.008332	0.001	0.002727	0.003275
A	PM25_RUNEX	0.001249	0.001625	0.001279	0.001393	0.00972	0.014962	0.006648	0.023603494	0.006712	0.005096	0.00184	0.029882	0.022889
A	PM25_STREX	0.001604	0.002063	0.001605	0.001756	0.000237	0.000123	0.00011	6.61472E-07	0.00013	1.4E-05	0.002859	4.18E-05	0.000252
A	ROG_DIURN	0.038084	0.081984	0.061288	0.070174	0.002024	0.00107	0.000417	2.53874E-06	0.001084	1.94E-05	1.809555	0.000537	0.707189
A	ROG_HTSK	0.09006	0.15803	0.120816	0.135544	0.075635	0.041911	0.019674	0.00011586	0.016051	0.000133	0.689105	0.005221	0.05968
A	ROG_IDLEX	0	0	0	0	0.021316	0.015901	0.018316	0.428946297	0.045786	0	0	0.241386	0
A	ROG_RESTL	0.033665	0.06596	0.058242	0.067485	0.001032	0.000547	0.000211	1.40536E-06	0.00048	7.82E-06	0.985054	0.000227	0.247171
A	ROG_RUNEX	0.007459	0.017917	0.013146	0.016466	0.092959	0.111603	0.017071	0.025760254	0.025484	0.019672	2.208057	0.086453	0.06941
A	ROG_RUNLS	0.202838	0.577726	0.418479	0.440788	0.521043	0.276429	0.112019	0.000593596	0.177971	0.000592	1.969445	0.035286	1.439379
A	ROG_STREX	0.211356	0.306088	0.307495	0.382282	0.075776	0.042231	0.050853	2.56712E-06	0.090401	0.005883	1.941958	0.027318	0.096685
A	SO2_IDLEX	0	0	0	0	8.68E-05	0.000134	0.000696	0.009914298	0.000873	0	0	0.003306	0
A	SO2_RUNEX	9.26E-05	0.002616	0.010439	0.003743	0.007755	0.007424	0.010439	0.013153522	0.012917	0.011293	0.00208	0.010129	0.015045
A	SO2_STREX	0	0	9.28E-05	0.000802	0.000117	7.75E-05	9.28E-05	4.87714E-07	0.000153	1.38E-05	0.000604	3.94E-05	0.000185
A	TOG_DIURN	0.038084	0.081984	0.061288	0.070174	0.002024	0.00107	0.000417	2.53874E-06	0.001084	1.94E-05	1.809555	0.000537	0.707189
A	TOG_HTSK	0.09006	0.15803	0.120816	0.135544	0.075635	0.041911	0.019674	0.00011586	0.016051	0.000133	0.689105	0.005221	0.05968
A	TOG_IDLEX	0	0	0	0	0.030064	0.021432	0.02485	0.493262188	0.059237	0	0	0.345172	0
A	TOG_RESTL	0.033665	0.06596	0.058242	0.067485	0.001032	0.000547	0.000211	1.40536E-06	0.00048	7.82E-06	0.985054	0.000227	0.247171
A	TOG_RUNEX	0.010845	0.026122	0.019145	0.023909	0.114266	0.130419	0.021706	0.078007034	0.034475	1.37699	2.736079	0.103211	0.092037
A	TOG_RUNLS	0.202838	0.577726	0.418479	0.440788	0.521043	0.276429	0.112019	0.000593596	0.177971	0.000592	1.969445	0.035286	1.439379
A	TOG_STREX	0.231408	0.335127	0.336668	0.418547	0.082966	0.046238	0.055677	2.81067E-06	0.098977	0.006441	2.11358	0.02991	0.105858

CalEEMod EMFAC2017 Fleet Mix Input

Year **2023**

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.590598	0.05278	0.17808	0.10708	0.021013	0.005252	0.013411	0.022089	0.001622	0.001261	0.005132	0.000923	0.000759
Congregate Care (Assisted Living)	0.590598	0.05278	0.17808	0.10708	0.021013	0.005252	0.013411	0.022089	0.001622	0.001261	0.005132	0.000923	0.000759
Enclosed Parking with Elevator	0.590598	0.05278	0.17808	0.10708	0.021013	0.005252	0.013411	0.022089	0.001622	0.001261	0.005132	0.000923	0.000759

CalEEMod EMFAC2017 Emission Factors Input

Year 2030

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004148	0.002505	0.003832	0.024231453	0.007098	0	0	0.070082	0
A	CH4_RUNEX	0.000959	0.001671	0.001726	0.001772	0.005195	0.005339	0.001034	0.04518098	0.002197	1.859484	0.319087	0.004404	0.005027
A	CH4_STREX	0.028931	0.035248	0.041821	0.043924	0.009023	0.004811	0.008383	4.34672E-07	0.015222	0.002186	0.24786	0.006338	0.019545
A	CO_IDLEX	0	0	0	0	0.17731	0.131894	0.405402	6.28489984	0.644155	0	0	2.927328	0
A	CO_RUNEX	0.411156	0.540474	0.559142	0.551517	0.468742	0.489111	0.152189	0.405949458	0.262856	14.11073	17.60732	0.374881	0.311691
A	CO_STREX	1.716961	1.849789	2.287973	2.324828	0.890393	0.484256	0.872515	0.006685308	1.577018	0.139137	9.199577	0.858725	1.635194
A	CO2_NBIO_IDLEX	0	0	0	0	8.251826	13.00041	65.09769	930.0496847	97.36242	0	0	337.4754	0
A	CO2_NBIO_RUNEX	199.8584	241.4555	249.7974	301.1272	698.5465	679.813	993.4479	1226.348086	1210.85	1668.671	209.7572	970.5049	1350.267
A	CO2_NBIO_STREX	42.16672	51.55301	53.79124	63.46105	10.09364	6.438033	8.550649	0.051649278	13.46187	1.401901	59.22586	5.059627	15.54123
A	NOX_IDLEX	0	0	0	0	0.045908	0.074209	0.341766	5.199426871	0.431935	0	0	2.710433	0
A	NOX_RUNEX	0.019319	0.033468	0.034489	0.035665	0.299902	0.384329	1.428316	2.517362076	1.448391	0.706433	1.137409	3.086533	1.063099
A	NOX_STREX	0.125333	0.151052	0.168209	0.179169	0.225227	0.124883	1.689216	2.314548745	1.129093	0.015157	0.270173	1.184451	0.23668
A	PM10_IDLEX	0	0	0	0	0.000915	0.001502	0.000162	0.002145897	0.000142	0	0	0.002048	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.061109857	0.13034	0.069383	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009901	0.010844	0.012	0.035621239	0.012	0.033326	0.004	0.010676	0.013189
A	PM10_RUNEX	0.000929	0.00107	0.001025	0.001034	0.007019	0.013839	0.007006	0.023790073	0.007882	0.005116	0.002138	0.021245	0.016043
A	PM10_STREX	0.001275	0.001461	0.00134	0.001344	0.00021	0.000106	0.000112	5.80093E-07	0.000156	1.52E-05	0.002862	6.76E-05	0.000212
A	PM25_IDLEX	0	0	0	0	0.000875	0.001437	0.000155	0.002053066	0.000136	0	0	0.00196	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026189939	0.05586	0.029736	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002475	0.002711	0.003	0.00890531	0.003	0.008332	0.001	0.002669	0.003297
A	PM25_RUNEX	0.000855	0.000984	0.000944	0.000954	0.006671	0.013218	0.006696	0.022760894	0.007526	0.004893	0.001994	0.02031	0.015312
A	PM25_STREX	0.001172	0.001344	0.001232	0.001236	0.000193	9.76E-05	0.000103	5.33374E-07	0.000144	1.4E-05	0.002676	6.22E-05	0.000195
A	ROG_DIURN	0.024903	0.046388	0.048996	0.057349	0.001403	0.000642	0.000289	1.32994E-06	0.001062	6.14E-05	1.786807	0.00087	0.347564
A	ROG_HTSK	0.061657	0.093564	0.089096	0.0981	0.054855	0.024352	0.013852	5.78076E-05	0.015622	0.000814	0.631299	0.008304	0.028392
A	ROG_IDLEX	0	0	0	0	0.01734	0.013466	0.01847	0.422100311	0.050126	0	0	0.322319	0
A	ROG_RESTL	0.022934	0.041206	0.048532	0.056738	0.000772	0.000374	0.000168	7.97633E-07	0.000487	3.58E-05	0.946881	0.000414	0.1401
A	ROG_RUNEX	0.003247	0.0065	0.006553	0.006887	0.072661	0.0982	0.011844	0.024014489	0.016744	0.026969	2.128511	0.060159	0.038911
A	ROG_RUNLS	0.170512	0.364405	0.336782	0.340289	0.429696	0.143744	0.071507	0.000284481	0.181965	0.004928	1.487321	0.053902	0.535482
A	ROG_STREX	0.118715	0.154126	0.182707	0.199251	0.043726	0.022756	0.041407	2.2699E-06	0.076636	0.009261	1.877593	0.036024	0.074231
A	SO2_IDLEX	0	0	0	0	7.99E-05	0.000124	0.000618	0.00865265	0.000924	0	0	0.003219	0
A	SO2_RUNEX	9E-05	0.002567	0.00948	0.002976	0.006812	0.006557	0.00948	0.011212041	0.011649	0.010417	0.002076	0.009288	0.013242
A	SO2_STREX	0	0	8.46E-05	0.000628	9.99E-05	6.37E-05	8.46E-05	5.11111E-07	0.000133	1.39E-05	0.000586	5.01E-05	0.000154
A	TOG_DIURN	0.024903	0.046388	0.048996	0.057349	0.001403	0.000642	0.000289	1.32994E-06	0.001062	6.14E-05	1.786807	0.00087	0.347564
A	TOG_HTSK	0.061657	0.093564	0.089096	0.0981	0.054855	0.024352	0.013852	5.78076E-05	0.015622	0.000814	0.631299	0.008304	0.028392
A	TOG_IDLEX	0	0	0	0	0.02413	0.017772	0.025282	0.485180108	0.063906	0	0	0.463821	0
A	TOG_RESTL	0.022934	0.041206	0.048532	0.056738	0.000772	0.000374	0.000168	7.97633E-07	0.000487	3.58E-05	0.946881	0.000414	0.1401
A	TOG_RUNEX	0.004716	0.009483	0.009524	0.009983	0.08579	0.112949	0.014288	0.071682245	0.021563	1.898202	2.666273	0.071678	0.048331
A	TOG_RUNLS	0.170512	0.364405	0.336782	0.340289	0.429696	0.143744	0.071507	0.000284481	0.181965	0.004928	1.487321	0.053902	0.535482
A	TOG_STREX	0.129977	0.168749	0.200041	0.218155	0.047875	0.024915	0.045336	2.48526E-06	0.083906	0.01014	2.04481	0.039442	0.081274

CalEEMod EMFAC2017 Fleet Mix Input

Year 2030

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.595423	0.053963	0.1714	0.106522	0.021043	0.005556	0.013639	0.023425	0.001443	0.001178	0.00478	0.0009	0.000728
Congregate Care (Assisted Living)	0.595423	0.053963	0.1714	0.106522	0.021043	0.005556	0.013639	0.023425	0.001443	0.001178	0.00478	0.0009	0.000728
Enclosed Parking with Elevator	0.595423	0.053963	0.1714	0.106522	0.021043	0.005556	0.013639	0.023425	0.001443	0.001178	0.00478	0.0009	0.000728

Adjustment Factors for EMFAC2017 Gasoline Light Duty Vehicles					
Year	NOx Exhaust	TOG Evaporative	TOG Exhaust	PM Exhaust	CO Exhaust
2020	1	1	1	1	1
2021	1.0002	1.0001	1.0002	1.0009	1.0005
2022	1.0004	1.0003	1.0004	1.0018	1.0014
2023	1.0007	1.0006	1.0007	1.0032	1.0027
2024	1.0012	1.0010	1.0011	1.0051	1.0044
2025	1.0018	1.0016	1.0016	1.0074	1.0065
2026	1.0023	1.0022	1.0020	1.0091	1.0083
2027	1.0028	1.0028	1.0024	1.0105	1.0102
2028	1.0034	1.0035	1.0028	1.0117	1.0120
2029	1.0040	1.0042	1.0032	1.0129	1.0138
2030	1.0047	1.0051	1.0037	1.0142	1.0156
2031	1.0054	1.0061	1.0042	1.0155	1.0173
2032	1.0061	1.0072	1.0047	1.0169	1.0189
2033	1.0068	1.0083	1.0052	1.0182	1.0204
2034	1.0075	1.0095	1.0058	1.0196	1.0218
2035	1.0081	1.0108	1.0063	1.0210	1.0232
2036	1.0088	1.0121	1.0069	1.0223	1.0244
2037	1.0094	1.0134	1.0074	1.0236	1.0255
2038	1.0099	1.0148	1.0079	1.0248	1.0265
2039	1.0104	1.0161	1.0085	1.0259	1.0274
2040	1.0109	1.0174	1.0090	1.0270	1.0281
2041	1.0113	1.0186	1.0095	1.0279	1.0288
2042	1.0116	1.0198	1.0099	1.0286	1.0294
2043	1.0119	1.0207	1.0103	1.0293	1.0299
2044	1.0122	1.0216	1.0106	1.0299	1.0303
2045	1.0124	1.0225	1.0109	1.0303	1.0306
2046	1.0125	1.0233	1.0111	1.0308	1.0309
2047	1.0127	1.0240	1.0113	1.0311	1.0311
2048	1.0128	1.0246	1.0115	1.0314	1.0313
2049	1.0128	1.0252	1.0116	1.0316	1.0315
2050	1.0129	1.0257	1.0117	1.0318	1.0316
Enter Year: 2021	**1.0002**	**1.0001**	**1.0002**	**1.0009**	**1.0005**

*PM Exhaust off model factor is only applied to the PM Exhaust emissions not start/idle

The off-model adjustment factors need to be applied only to emissions from gasoline light duty vehicles (LDA, LDT1, LDT2 and MDV). Please note that the adjustment factors are by calendar year and includes all model years.

Enter NA in the date field if adjustments do not apply

Source: EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STF	PM2.5_PM	PM2.5_PM	PM10_RUI	PM10_IDLI	PM10_STR	PM10_PM	PM10_PMI	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNI	N2O_IDLE	N2O_STRE	ROG_RUNI	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_REST	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_RESTI	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2021	HHDT	Aggregate	Aggregate	Gasoline	5.162845	484.6824	103.2982	4.062598	0	0.407731	0.001311	0	0.000823	0.005	0.02646	0.001426	0	0.000895	0.02	0.06174	2025.269	0	47.29512	0.112325	0	0.000414	0.149526	0	0.012575	0.585782	0	0.002169	0.156953	0.96912	0.038977	0.070674	0.854771	0	0.002374	0.156953	0.96912	0.038977	0.070674	32.05552	0	5.02137	0.020042	0	0.000468
Santa Clara	2021	HHDT	Aggregate	Aggregate	Diesel	8105.749	988266.7	86260.08	4.147844	63.6365	1.887942	0.058758	0.087222	0	0.008868	0.026073	0.061415	0.091165	0	0.035473	0.060837	1528.481	11606.57	0	0.006422	0.218177	0	0.240256	1.824391	0	0.138263	4.697294	0	0	0	0	0	0.157402	5.347512	0	0	0	0	0	0.5229	60.00634	0	0.01444	0.109653	0
Santa Clara	2021	HHDT	Aggregate	Aggregate	Natural Ga	336.2009	13706.54	1311.183	1.939434	21.5699	0	0.005088	0.034407	0	0.009	0.02646	0.005318	0.035962	0	0.036	0.06174	3233.282	4101.533	0	3.57235	1.261083	0	0.659126	0.836124	0	0.176593	0.0496	0	0	0	0	0	3.788896	1.323011	0	0	0	0	0	10.63714	21.51231	0	0	0	0
Santa Clara	2021	LDA	Aggregate	Aggregate	Gasoline	715693.3	26189161	3369392	0.044609	0	0.21159	0.001358	0	0.001822	0.002	0.01575	0.001477	0	0.001981	0.008	0.03675	266.3197	0	56.92202	0.002711	0	0.058853	0.004863	0	0.027764	0.010662	0	0.269366	0.108645	0.230465	0.191774	0.221801	0.015551	0	0.294921	0.108645	0.230465	0.191774	0.221801	0.690036	0	2.392069	0.002635	0	0.000563
Santa Clara	2021	LDA	Aggregate	Aggregate	Diesel	6670.999	255156.4	31695.34	0.087271	0	0	0.007648	0	0	0.002	0.01575	0.007994	0	0	0.008	0.03675	205.4073	0	0	0.000708	0	0	0.032287	0	0	0.015244	0	0	0	0	0	0	0.017354	0	0	0	0	0	0	0.210705	0	0	0.001942	0	0
Santa Clara	2021	LDA	Aggregate	Aggregate	Electricity	24022.27	869835.7	117842.5	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2021	LDT1	Aggregate	Aggregate	Gasoline	71628.15	2413668	331256	0.105802	0	0.272111	0.001862	0	0.002385	0.002	0.01575	0.002025	0	0.002594	0.008	0.03675	308.1227	0	66.19689	0.005661	0	0.076866	0.008066	0	0.03002	0.024911	0	0.384911	0.189186	0.681609	0.358705	0.461608	0.036311	0	0.421425	0.189186	0.681609	0.358705	0.461608	1.200263	0	2.537143	0.003049	0	0.000655
Santa Clara	2021	LDT1	Aggregate	Aggregate	Diesel	39.89374	725.5582	131.2284	1.268412	0	0	0.168474	0	0	0.002	0.01575	0.176091	0	0	0.008	0.03675	413.9966	0	0	0.010139	0	0	0.065074	0	0	0.218297	0	0	0	0	0	0	0.248517	0	0	0	0	0	0	1.237222	0	0	0.003914	0	0
Santa Clara	2021	LDT1	Aggregate	Aggregate	Electricity	483.8807	18039.76	2391.303	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2021	LDT2	Aggregate	Aggregate	Gasoline	246759.9	8311704	1150425	0.087782	0	0.326789	0.001356	0	0.001737	0.002	0.01575	0.001475	0	0.001889	0.008	0.03675	338.518	0	73.70907	0.004072	0	0.077467	0.007118	0	0.035187	0.01674	0	0.36702	0.133338	0.446757	0.285742	0.307995	0.024414	0	0.40184	0.133338	0.446757	0.285742	0.307995	0.930639	0	3.014399	0.00335	0	0.000729
Santa Clara	2021	LDT2	Aggregate	Aggregate	Diesel	1518.218	59025.65	7458.416	0.041668	0	0	0.004904	0	0	0.002	0.01575	0.005126	0	0	0.008	0.03675	282.8504	0	0	0.000657	0	0	0.04446	0	0	0.01415	0	0	0	0	0	0	0.016109	0	0	0	0	0	0	0.12212	0	0	0.002674	0	0
Santa Clara	2021	LDT2	Aggregate	Aggregate	Electricity	2166.546	67548.49	10876.24	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2021	LHDT1	Aggregate	Aggregate	Gasoline	16540.61	571642.7	246430.4	0.262338	0.03949	0.549198	0.002191	0	0.000401	0.002	0.03276	0.002383	0	0.000436	0.008	0.07644	1017.255	122.0379	19.14342	0.012124	0.123606	0.02716	0.015765	0.003154	0.042297	0.059375	0.45228	0.137987	0.130258	0.89758	0.02599	0.052227	0.08664	0.659966	0.151079	0.130258	0.89758	0.02599	0.052227	1.086844	3.748723	1.811769	0.010067	0.001208	0.000189
Santa Clara	2021	LHDT1	Aggregate	Aggregate	Diesel	10609.08	409397.3	133448.8	1.862203	2.152154	0	0.023297	0.02704	0	0.003	0.03276	0.02435	0.028263	0	0.012	0.07644	552.5074	134.745	0	0.007585	0.005098	0	0.086846	0.02118	0	0.163311	0.10976	0	0	0	0	0	0.185919	0.124954	0	0	0	0	0	0.686231	0.909745	0	0.005223	0.001274	0
Santa Clara	2021	LHDT2	Aggregate	Aggregate	Gasoline	2219.575	77018.29	33068.36	0.272207	0.039035	0.535592	0.002122	0	0.00036	0.002	0.03822	0.002307	0	0.000392	0.008	0.08918	1160.22	140.2323	21.7453	0.010038	0.122897	0.026292	0.016913	0.003077	0.040901	0.045762	0.447168	0.133103	0.127611	0.884759	0.023996	0.048928	0.066776	0.652507	0.145731	0.127611	0.884759	0.023996	0.048928	0.835401	3.750559	1.839341	0.011481	0.001388	0.000215
Santa Clara	2021	LHDT2	Aggregate	Aggregate	Diesel	4214.571	160661.6	53014	1.542154	2.158821	0	0.022944	0.027219	0	0.003	0.03822	0.023981	0.02845	0	0.012	0.08918	621.5562	215.9968	0	0.007204	0.005098	0	0.0977	0.033952	0	0.155094	0.10976	0	0	0	0	0	0.176564	0.124954	0	0	0	0	0	0.650931	0.909745	0	0.005876	0.002042	0
Santa Clara	2021	MCY	Aggregate	Aggregate	Gasoline	32119.63	239436.8	64239.26	1.15497	0	0.270443	0.001772	0	0.00303	0.001	0.00504	0.001893	0	0.003213	0.004	0.01176	210.3906	0	61.75755	0.33122	0	0.25818	0.066438	0	0.015338	2.253066	0	1.967635	0.716612	2.132348	1.002545	1.822873	2.774349	0	2.14098	0.716612	2.132348	1.002545	1.822873	19.56337	0	8.976601	0.002082	0	0.000611
Santa Clara	2021	MDV	Aggregate	Aggregate	Gasoline	149542.9	4865312	690430.3	0.11839	0	0.410054	0.001476	0	0.002019	0.002	0.01575	0.001604	0	0.002194	0.008	0.03675	409.4409	0	89.81723	0.005494	0	0.095775	0.008922	0	0.03884	0.024634	0	0.48393	0.15482	0.49034	0.340146	0.361645	0.034949	0	0.529797	0.15482	0.49034	0.340146	0.361645	1.127252	0	3.59329	0.004052	0	0.000889
Santa Clara	2021	MDV	Aggregate	Aggregate	Diesel	3426.389	128242	16726.03	0.044109	0	0	0.004602	0	0	0.002	0.01575	0.00481	0	0	0.008	0.03675	370.3019	0	0	0.000514	0	0	0.058206	0	0	0.011068	0	0	0	0	0	0	0.0126	0	0	0	0	0	0	0.188966	0	0	0.003501	0	0
Santa Clara	2021	MDV	Aggregate	Aggregate	Electricity	687.5446	22639.78	3509.471	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2021	MH	Aggregate	Aggregate	Gasoline	2931.22	26379	293.2393	0.474084	0	0.332292	0.001724	0	0.000381	0.003	0.05586	0.001875	0	0.000414	0.012	0.13034	1782.907	0	26.40751	0.017557	0	0.033119	0.028008	0	0.03399	0.078746	0	0.143103	0.096257	2.347589	0.039223	0.115979	0.114906	0	0.15668	0.096257	2.347589	0.039223	0.115979	2.065959	0	3.165436	0.017643	0	0.000261
Santa Clara	2021	MH	Aggregate	Aggregate	Diesel	984.446	9504.941	98.4446	4.382014	0	0	0.092722	0	0	0.004	0.05586	0.096914	0	0	0.016	0.13034	1031.304	0	0	0.005198	0	0	0.162107	0	0	0.111901	0	0	0	0	0	0	0.127391	0	0	0	0	0	0	0.400207	0	0	0.00975	0	0
Santa Clara	2021	MHDT	Aggregate	Aggregate	Gasoline	1410.134	72248.39	28213.97	0.591018	0.088168	0.389628	0.001358	0	0.000497	0.003	0.05586	0.001477	0	0.00054	0.012	0.13034	1752.404	539.4334	40.1358	0.018696	0.257865	0.042095	0.027833	0.0072	0.028931	0.092815	1.007984	0.233354	0.09611	0.563096	0.020857	0.043005	0.135436	1.470848	0.255494	0.09611	0.563096	0.020857	0.043005	2.155492	15.06152	5.301778	0.017341	0.005338	0.000397
Santa Clara	2021	MHDT	Aggregate	Aggregate	Diesel	9487.148	545455.1	96101.91	3.194916	8.74953	1.398943	0.080969	0.02675	0	0.003	0.05586	0.08463	0.02796	0	0.012	0.13034	1081.992	930.4887	0	0.009431	0.005843	0	0.170074	0.14626	0	0.203046	0.125806	0	0	0	0	0	0.231153	0.143221	0	0	0	0	0	0.573058	2.609835	0	0.010222	0.008791	0
Santa Clara	2021	OBUS	Aggregate	Aggregate	Gasoline	502.2127	24696.47	10048.27	0.501682	0.065104	0.329488	0.000916	0	0.000212	0.003	0.05586	0.000996	0	0.00023	0.012	0.13034	1793.018	381.4064	26.74037	0.014791	0.200187	0.030949	0.025044	0.005583	0.026445	0.070359	0.746923	0.159737	0.026848	0.294072	0.016083	0.036997	0.102667	1.089908	0.174892	0.026848	0.294072	0.016083	0.036997	1.576822	5.778528	3.351004	0.017743	0.003774	0.000265
Santa Clara	2021	OBUS	Aggregate	Aggregate	Diesel	767.9729	54443.73	7049.223	2.779706	13.63199	1.84	0.044765	0.045778	0	0.003	0.05586	0.046789	0.047848	0	0.012	0.13034	1202.163	1945.083	0	0.005321	0.035079	0	0.188963	0.30574	0	0.114561	0.755235	0	0	0	0	0	0.130419	0.859777	0	0	0	0	0	0.397353	8.822131	0	0.011357	0.018376	0
Santa Clara	2021	SBUS	Aggregate	Aggregate	Gasoline	235.3456	11037.57	941.3825	0.448701	0.923977	0.560273	0.001205	0	0.000494	0.002	0.3192	0.001311	0	0.000537	0.008	0.7448	872.735	2601.946	49.24562	0.012804	2.443216	0.058897	0.025163	0.088108	0.05292	0.063019	10.60409	0.336056	0.060254	0.423958	0.009983	0.025	0.091957	15.47346	0.367939	0.060254	0.423958	0.009983	0.025	1.371308	82.01386	8.8054	0.008636	0.025748	0.000487
Santa Clara	2021	SBUS	Aggregate	Aggregate	Diesel	1013.214	32006.31	11692.35	6.970742	45.79682	0.74176	0.043352	0.053733	0	0.003	0.3192	0.045313	0.056163	0	0.012	0.7448	1153.149	3727.733	0	0.004763	0.013307	0	0.181259	0.585948	0	0.102551	0.286497	0	0	0	0	0	0.116746	0.326154	0	0	0	0	0	0.279558	5.707206	0	0.010894	0.035218	0
Santa Clara	2021	UBUS	Aggregate	Aggregate	Gasoline	8.415569	1059.368	33.66228	0.456042	0	1.173674	0.000327	0	9.66E-05	0.003	0.05586	0.000355	0	0.000105	0.012	0.13034	2351.957	0	104.4673	0.006811	0	0.169572	0.0345	0	0.088962	0.022728	0	0.727258	0.171351	1.189018	0.028073	0.044636	0.033164	0	0.796256	0.171351	1.189018	0.028073	0.044636	0.499495	0	8.852622	0.023275	0	0.001034
Santa Clara	2021	UBUS	Aggregate	Aggregate	Diesel	423.0651	46463.12	1692.26	0.803452	0	0	0.005651	0	0	0.008415	0.029326	0.005907	0	0	0.03366	0.068427	1481.161	0	0	0.077358	0	0	0.232818	0	0	0.001105	0	0	0	0	0	0	0.078949	0	0	0	0	0	0	0.131304	0	0	0.014002	0	0
Santa Clara	2021	UBUS	Aggregate	Aggregate	Natural Ga	103.9599	12318.22	415.8396	0.489341	0	0	0.003183	0	0	0.008475	0.029034	0.003327	0	0	0.033899	0.067745	2016.304	0	0	6.413624	0	0	0.411037	0	0	0.091638	0	0	0	0	0	0	6.545574	0	0	0	0	0	0	49.80412	0	0	0	0	0

Source: EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STF	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PM	PM10_PMI	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLE	N2O_STRE	ROG_RUNE	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_REST	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNL	TOG_RESTI	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2022	HHDT	Aggregate	Aggregate	Gasoline	4.973172	516.9338	99.50323	3.654204	0	0.338391	0.001236	0	0.000744	0.005	0.02646	0.001344	0	0.00081	0.02	0.06174	1964.961	0	46.86739	0.097725	0	0.00044	0.140899	0	0.010576	0.494672	0	0.002301	0.136891	0.830556	0.033943	0.061166	0.721824	0	0.00252	0.136891	0.830556	0.033943	0.061166	30.00648	0	5.27737	0.019445	0	0.000464
Santa Clara	2022	HHDT	Aggregate	Aggregate	Diesel	8277.463	1011013	88031.26	3.535499	63.08378	2.080194	0.033949	0.03347	0	0.008873	0.026088	0.035484	0.034983	0	0.035494	0.060872	1486.606	11783.13	0	0.003901	0.215524	0	0.233674	1.852143	0	0.08399	4.640183	0	0	0	0	0	0.095616	5.282495	0	0	0	0	0	0.366847	63.30293	0	0.014045	0.111321	0
Santa Clara	2022	HHDT	Aggregate	Aggregate	Natural Ga	348.7902	14223.14	1360.282	1.755776	21.14752	0	0.004789	0.030991	0	0.009	0.02646	0.005006	0.032392	0	0.036	0.06174	3203.692	4060.116	0	3.511574	1.248503	0	0.653093	0.827681	0	0.161697	0.045805	0	0	0	0	0	3.710887	1.306054	0	0	0	0	0	10.70122	21.55662	0	0	0	0
Santa Clara	2022	LDA	Aggregate	Aggregate	Gasoline	733557.7	26455304	3456649	0.03872	0	0.197227	0.001299	0	0.001748	0.002	0.01575	0.001413	0	0.001902	0.008	0.03675	259.2126	0	55.39361	0.002345	0	0.054199	0.004449	0	0.026685	0.009015	0	0.243726	0.100881	0.22086	0.178182	0.20337	0.013151	0	0.266848	0.100881	0.22086	0.178182	0.20337	0.63218	0	2.325265	0.002565	0	0.000548
Santa Clara	2022	LDA	Aggregate	Aggregate	Diesel	7146.668	268335.1	33963.02	0.071556	0	0	0.006579	0	0	0.002	0.01575	0.006877	0	0	0.008	0.03675	200.3149	0	0	0.000626	0	0	0.031487	0	0	0.013485	0	0	0	0	0	0	0.015352	0	0	0	0	0	0	0.198488	0	0	0.001894	0	0
Santa Clara	2022	LDA	Aggregate	Aggregate	Electricity	25894.61	943282.8	126428	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2022	LDT1	Aggregate	Aggregate	Gasoline	73556.92	2443329	340743.8	0.091156	0	0.251292	0.001724	0	0.002226	0.002	0.01575	0.001875	0	0.002421	0.008	0.03675	300.527	0	64.49485	0.004882	0	0.070027	0.007217	0	0.028775	0.021236	0	0.344801	0.173613	0.628849	0.332831	0.420667	0.030964	0	0.377511	0.173613	0.628849	0.332831	0.420667	1.068397	0	2.450832	0.002974	0	0.000638
Santa Clara	2022	LDT1	Aggregate	Aggregate	Diesel	36.8388	667.9121	121.0603	1.185315	0	0	0.157566	0	0	0.002	0.01575	0.164691	0	0	0.008	0.03675	408.3259	0	0	0.009501	0	0	0.064183	0	0	0.204561	0	0	0	0	0	0	0.232879	0	0	0	0	0	0	1.159574	0	0	0.00386	0	0
Santa Clara	2022	LDT1	Aggregate	Aggregate	Electricity	624.8771	24059.07	3099.469	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2022	LDT2	Aggregate	Aggregate	Gasoline	250455.4	8295824	1167439	0.077278	0	0.299792	0.001307	0	0.001684	0.002	0.01575	0.001421	0	0.001831	0.008	0.03675	327.6413	0	71.42656	0.003665	0	0.072415	0.006473	0	0.033384	0.014906	0	0.339292	0.128171	0.436499	0.281495	0.299507	0.021744	0	0.371482	0.128171	0.436499	0.281495	0.299507	0.860463	0	2.923834	0.003242	0	0.000707
Santa Clara	2022	LDT2	Aggregate	Aggregate	Diesel	1663.513	62652.21	8136.947	0.039252	0	0	0.004754	0	0	0.002	0.01575	0.004969	0	0	0.008	0.03675	275.5741	0	0	0.000647	0	0	0.043316	0	0	0.013935	0	0	0	0	0	0	0.015864	0	0	0	0	0	0	0.123161	0	0	0.002605	0	0
Santa Clara	2022	LDT2	Aggregate	Aggregate	Electricity	2695.96	82111.52	13502.44	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2022	LHDT1	Aggregate	Aggregate	Gasoline	16536.9	566343.8	246375.2	0.235238	0.038471	0.530556	0.002161	0	0.000388	0.002	0.03276	0.00235	0	0.000422	0.008	0.07644	1006.569	121.1222	18.98971	0.01086	0.121305	0.025473	0.014262	0.003125	0.041267	0.052874	0.440699	0.129054	0.125369	0.861898	0.025267	0.050121	0.077153	0.643067	0.141298	0.125369	0.861898	0.025267	0.050121	0.97349	3.751848	1.764958	0.009961	0.001199	0.000188
Santa Clara	2022	LHDT1	Aggregate	Aggregate	Diesel	11104.44	423266.4	139679.8	1.613919	2.033114	0	0.021273	0.026869	0	0.003	0.03276	0.022235	0.028084	0	0.012	0.07644	544.3042	133.047	0	0.007318	0.005098	0	0.085557	0.020913	0	0.157544	0.10976	0	0	0	0	0	0.179353	0.124954	0	0	0	0	0	0.661457	0.909745	0	0.005146	0.001258	0
Santa Clara	2022	LHDT2	Aggregate	Aggregate	Gasoline	2253.3	77523.96	33570.81	0.240034	0.037891	0.516259	0.002078	0	0.000346	0.002	0.03822	0.00226	0	0.000377	0.008	0.08918	1147.291	139.0737	21.54397	0.008737	0.120275	0.024583	0.015135	0.003045	0.039911	0.039365	0.434196	0.123837	0.121118	0.819863	0.023133	0.046225	0.057441	0.633578	0.135586	0.121118	0.819863	0.023133	0.046225	0.722025	3.75488	1.776904	0.011353	0.001376	0.000213
Santa Clara	2022	LHDT2	Aggregate	Aggregate	Diesel	4438.985	166319.5	55836.85	1.346918	2.041795	0	0.021771	0.027131	0	0.003	0.03822	0.022756	0.028358	0	0.012	0.08918	612.5422	213.4891	0	0.007003	0.005098	0	0.096283	0.033558	0	0.150761	0.10976	0	0	0	0	0	0.171631	0.124954	0	0	0	0	0	0.634383	0.909745	0	0.005791	0.002018	0
Santa Clara	2022	MCY	Aggregate	Aggregate	Gasoline	32925.36	241011	65850.71	1.151611	0	0.270649	0.001812	0	0.002978	0.001	0.00504	0.001937	0	0.003161	0.004	0.01176	210.2729	0	61.39967	0.328946	0	0.256691	0.06628	0	0.015352	2.228751	0	1.954835	0.704215	2.060677	0.995009	1.817765	2.753726	0	2.127328	0.704215	2.060677	0.995009	1.817765	19.18808	0	9.0045	0.002081	0	0.000608
Santa Clara	2022	MDV	Aggregate	Aggregate	Gasoline	151961.1	4876240	702265.7	0.099589	0	0.371177	0.001397	0	0.001912	0.002	0.01575	0.001519	0	0.002079	0.008	0.03675	396.236	0	86.90417	0.004621	0	0.087878	0.007887	0	0.036541	0.019446	0	0.437645	0.147462	0.472734	0.331376	0.347901	0.028322	0	0.479161	0.147462	0.472734	0.331376	0.347901	0.980018	0	3.406111	0.003921	0	0.00086
Santa Clara	2022	MDV	Aggregate	Aggregate	Diesel	3721.225	135478.8	18101.22	0.038775	0	0	0.004203	0	0	0.002	0.01575	0.004393	0	0	0.008	0.03675	360.3121	0	0	0.000478	0	0	0.056636	0	0	0.010285	0	0	0	0	0	0	0.011709	0	0	0	0	0	0	0.184421	0	0	0.003406	0	0
Santa Clara	2022	MDV	Aggregate	Aggregate	Electricity	1080.167	34834.41	5508.057	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2022	MH	Aggregate	Aggregate	Gasoline	2891.835	26265.33	289.2991	0.413359	0	0.334516	0.001633	0	0.000362	0.003	0.05586	0.001776	0	0.000394	0.012	0.13034	1756.095	0	25.97914	0.015124	0	0.032419	0.025426	0	0.034963	0.066433	0	0.137518	0.088945	2.156488	0.036513	0.106238	0.096939	0	0.150564	0.088945	2.156488	0.036513	0.106238	1.697423	0	3.037213	0.017378	0	0.000257
Santa Clara	2022	MH	Aggregate	Aggregate	Diesel	1019.353	9712.32	101.9353	4.184918	0	0	0.085576	0	0	0.004	0.05586	0.089445	0	0	0.016	0.13034	1018.587	0	0	0.005027	0	0	0.160108	0	0	0.108225	0	0	0	0	0	0	0.123206	0	0	0	0	0	0	0.382773	0	0	0.009629	0	0
Santa Clara	2022	MHDT	Aggregate	Aggregate	Gasoline	1456.112	75284.48	29133.88	0.474932	0.088412	0.377896	0.001319	0	0.000469	0.003	0.05586	0.001435	0	0.00051	0.012	0.13034	1722.789	532.6547	39.09903	0.014881	0.262553	0.04023	0.023376	0.007484	0.029181	0.072945	1.011617	0.219187	0.087649	0.506692	0.018903	0.038182	0.106442	1.47615	0.239982	0.087649	0.506692	0.018903	0.038182	1.680953	15.10368	4.939745	0.017048	0.005271	0.000387
Santa Clara	2022	MHDT	Aggregate	Aggregate	Diesel	9430.024	551923.8	94917.85	2.277066	7.413096	1.687822	0.039812	0.015538	0	0.003	0.05586	0.041612	0.01624	0	0.012	0.13034	1050.628	914.98	0	0.004378	0.004667	0	0.165144	0.143822	0	0.094265	0.100481	0	0	0	0	0	0.107314	0.11439	0	0	0	0	0	0.32147	2.58681	0	0.009926	0.008644	0
Santa Clara	2022	OBUS	Aggregate	Aggregate	Gasoline	501.9655	24150.25	10043.33	0.443255	0.065137	0.32561	0.000952	0	0.000213	0.003	0.05586	0.001035	0	0.000232	0.012	0.13034	1767.375	377.9272	26.38965	0.013022	0.200837	0.030332	0.022732	0.005646	0.026387	0.061436	0.747416	0.156088	0.026802	0.295531	0.015889	0.036065	0.089647	1.090627	0.170897	0.026802	0.295531	0.015889	0.036065	1.365657	5.781487	3.261978	0.01749	0.00374	0.000261
Santa Clara	2022	OBUS	Aggregate	Aggregate	Diesel	762.3964	53839.19	6991.348	2.314382	10.4182	2.005848	0.021086	0.015288	0	0.003	0.05586	0.02204	0.015979	0	0.012	0.13034	1185.916	1892.098	0	0.002538	0.027964	0	0.18641	0.297411	0	0.054653	0.602048	0	0	0	0	0	0.062218	0.685386	0	0	0	0	0	0.239321	8.657847	0	0.011204	0.017876	0
Santa Clara	2022	SBUS	Aggregate	Aggregate	Gasoline	249.3134	11500.83	997.2534	0.430325	0.924415	0.566946	0.001196	0	0.000498	0.002	0.3192	0.001301	0	0.000541	0.008	0.7448	865.5448	2582.545	48.67377	0.011856	2.442701	0.058309	0.024366	0.088243	0.053528	0.058325	10.61061	0.332747	0.061157	0.415506	0.010413	0.025261	0.085108	15.48298	0.364316	0.061157	0.415506	0.010413	0.025261	1.259002	82.05319	8.624782	0.008565	0.025556	0.000482
Santa Clara	2022	SBUS	Aggregate	Aggregate	Diesel	1014.086	31965.96	11702.42	6.765334	45.00081	0.786274	0.042018	0.05033	0	0.003	0.3192	0.043917	0.052605	0	0.012	0.7448	1145.085	3716.49	0	0.004669	0.013069	0	0.179991	0.584181	0	0.100532	0.281366	0	0	0	0	0	0.114448	0.320314	0	0	0	0	0	0.27746	5.867721	0	0.010818	0.035112	0
Santa Clara	2022	UBUS	Aggregate	Aggregate	Gasoline	8.419396	1059.849	33.67758	0.491737	0	1.236285	0.000328	0	9.7E-05	0.003	0.05586	0.000356	0	0.000105	0.012	0.13034	2351.817	0	104.599	0.006789	0	0.178596	0.036386	0	0.091633	0.022728	0	0.768536	0.190076	1.35875	0.031079	0.049249	0.033164	0	0.84145	0.190076	1.35875	0.031079	0.049249	0.527722	0	8.852622	0.023273	0	0.001035
Santa Clara	2022	UBUS	Aggregate	Aggregate	Diesel	423.2358	46482.16	1692.943	0.803453	0	0	0.005651	0	0	0.008415	0.029326	0.005907	0	0	0.033661	0.068427	1481.178	0	0	0.077358	0	0	0.232821	0	0	0.001105	0	0	0	0	0	0	0.078949	0	0	0	0	0	0	0.131304	0	0	0.014002	0	0
Santa Clara	2022	UBUS	Aggregate	Aggregate	Natural Ga	104.0289	12325.91	416.1154	0.48934	0	0	0.003183	0	0	0.008475	0.029034	0.003327	0	0	0.033899	0.067746	2016.3	0	0	6.413607	0	0	0.411036	0	0	0.091638	0	0	0	0	0	0	6.545556	0	0	0	0	0	0	49.80397	0	0	0	0	0

Source: EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STI	PM2.5_PM	PM2.5_PM	PM10_RU	PM10_IDL	PM10_STR	PM10_PM	PM10_PM	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLE	N2O_STRE	ROG_RUNE	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNL	ROG_REST	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNL	TOG_RESTI	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2023	HHDT	Aggregate	Aggregate	Gasoline	4.815448	553.4124	96.34748	3.178298	0	0.254165	0.001157	0	0.000623	0.005	0.02646	0.001259	0	0.000677	0.02	0.06174	1915.642	0	46.38676	0.084318	0	0.000462	0.130889	0	0.008571	0.409676	0	0.002416	0.109047	0.558691	0.026465	0.047808	0.597798	0	0.002645	0.109047	0.558691	0.026465	0.047808	27.8207	0	5.57125	0.018957	0	0.000459
Santa Clara	2023	HHDT	Aggregate	Aggregate	Diesel	8401.79	1034051	89180.29	2.696198	57.80539	2.360147	0.023887	0.026373	0	0.008879	0.026103	0.024967	0.027565	0	0.035514	0.060907	1411.729	11326.45	0	0.001106	0.214953	0	0.221904	1.78036	0	0.023817	4.627869	0	0	0	0	0	0.027114	5.268477	0	0	0	0	0	0.233741	67.52667	0	0.013337	0.107007	0
Santa Clara	2023	HHDT	Aggregate	Aggregate	Natural Ga	360.3246	14693.25	1405.266	1.588314	20.76108	0	0.004529	0.028055	0	0.009	0.02646	0.004734	0.029323	0	0.036	0.06174	3174.275	4018.428	0	3.456549	1.237751	0	0.647097	0.819183	0	0.148044	0.042416	0	0	0	0	0	3.64007	1.291393	0	0	0	0	0	10.76049	21.60789	0	0	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Gasoline	751359.6	26739811	3542534	0.034059	0	0.184615	0.001247	0	0.001682	0.002	0.01575	0.001356	0	0.001829	0.008	0.03675	252.091	0	53.87356	0.002048	0	0.050071	0.004113	0	0.025656	0.007696	0	0.221504	0.094205	0.212597	0.166193	0.187545	0.011228	0	0.242518	0.094205	0.212597	0.166193	0.187545	0.586148	0	2.259775	0.002495	0	0.000533
Santa Clara	2023	LDA	Aggregate	Aggregate	Diesel	7591.987	280497.7	36090.42	0.058679	0	0	0.005598	0	0	0.002	0.01575	0.005851	0	0	0.008	0.03675	195.1926	0	0	0.000552	0	0	0.030682	0	0	0.011887	0	0	0	0	0	0	0.013532	0	0	0	0	0	0	0.188023	0	0	0.001845	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Electricity	28074.67	1034348	136585.9	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Gasoline	75517.84	2475367	350251	0.078745	0	0.232751	0.001604	0	0.002087	0.002	0.01575	0.001745	0	0.00227	0.008	0.03675	292.8794	0	62.80265	0.004214	0	0.063907	0.006493	0	0.02759	0.018087	0	0.309393	0.159698	0.584022	0.309209	0.384203	0.026384	0	0.338746	0.159698	0.584022	0.309209	0.384203	0.955745	0	2.366858	0.002898	0	0.000621
Santa Clara	2023	LDT1	Aggregate	Aggregate	Diesel	34.1777	620.5176	112.4335	1.098891	0	0	0.146297	0	0	0.002	0.01575	0.152912	0	0	0.008	0.03675	401.6268	0	0	0.008837	0	0	0.06313	0	0	0.190256	0	0	0	0	0	0	0.216594	0	0	0	0	0	0	1.080107	0	0	0.003797	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Electricity	788.4144	31182.48	3917.01	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2023	LDT2	Aggregate	Aggregate	Gasoline	254167.5	8294772	1184412	0.06837	0	0.275999	0.001263	0	0.001639	0.002	0.01575	0.001374	0	0.001783	0.008	0.03675	316.8848	0	69.17216	0.003305	0	0.067695	0.00592	0	0.031692	0.013288	0	0.313842	0.123254	0.427158	0.276975	0.291298	0.019387	0	0.343617	0.123254	0.427158	0.276975	0.291298	0.800025	0	2.837237	0.003136	0	0.000685
Santa Clara	2023	LDT2	Aggregate	Aggregate	Diesel	1802.688	66004.69	8781.203	0.037098	0	0	0.004581	0	0	0.002	0.01575	0.004788	0	0	0.008	0.03675	268.3329	0	0	0.000636	0	0	0.042178	0	0	0.01369	0	0	0	0	0	0	0.015585	0	0	0	0	0	0	0.124122	0	0	0.002537	0	0
Santa Clara	2023	LDT2	Aggregate	Aggregate	Electricity	3304.555	98384.64	16510.28	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2023	LHDT1	Aggregate	Aggregate	Gasoline	16555.13	562142	246646.7	0.210457	0.037398	0.511224	0.002137	0	0.000377	0.002	0.03276	0.002324	0	0.00041	0.008	0.07644	994.5276	120.0678	18.82225	0.009676	0.118805	0.02387	0.012895	0.003089	0.040194	0.046707	0.428491	0.120584	0.120359	0.829144	0.024473	0.047994	0.068155	0.625253	0.132025	0.120359	0.829144	0.024473	0.047994	0.867722	3.754766	1.724	0.009842	0.001188	0.000186
Santa Clara	2023	LHDT1	Aggregate	Aggregate	Diesel	11594.64	435998.6	145846	1.400562	1.919948	0	0.019496	0.026734	0	0.003	0.03276	0.020378	0.027943	0	0.012	0.07644	535.8142	131.265	0	0.007088	0.005098	0	0.084223	0.020633	0	0.152594	0.10976	0	0	0	0	0	0.173718	0.124954	0	0	0	0	0	0.641529	0.909745	0	0.005065	0.001241	0
Santa Clara	2023	LHDT2	Aggregate	Aggregate	Gasoline	2285.018	77947.41	34043.37	0.21093	0.036728	0.496392	0.002042	0	0.000334	0.002	0.03822	0.00222	0	0.000363	0.008	0.08918	1132.921	137.76	21.32176	0.007566	0.117557	0.022949	0.013529	0.00301	0.038884	0.03359	0.420989	0.114958	0.114086	0.752468	0.022171	0.043386	0.049014	0.614306	0.125864	0.114086	0.752468	0.022171	0.043386	0.620201	3.758932	1.718516	0.011211	0.001363	0.000211
Santa Clara	2023	LHDT2	Aggregate	Aggregate	Diesel	4660.728	171541.4	58626.09	1.17888	1.93121	0	0.020832	0.02707	0	0.003	0.03822	0.021774	0.028294	0	0.012	0.08918	603.2432	210.8377	0	0.00683	0.005098	0	0.094821	0.033141	0	0.147052	0.10976	0	0	0	0	0	0.167409	0.124954	0	0	0	0	0	0.621451	0.909745	0	0.005703	0.001993	0
Santa Clara	2023	MCY	Aggregate	Aggregate	Gasoline	33683.49	242470.7	67366.97	1.148719	0	0.270672	0.00184	0	0.002859	0.001	0.00504	0.001969	0	0.003039	0.004	0.01176	210.1672	0	61.03922	0.326994	0	0.255241	0.066143	0	0.01536	2.208057	0	1.941958	0.689105	1.969445	0.985054	1.809555	2.736079	0	2.11358	0.689105	1.969445	0.985054	1.809555	18.86893	0	9.034026	0.00208	0	0.000604
Santa Clara	2023	MDV	Aggregate	Aggregate	Gasoline	154431.4	4896063	714241.1	0.085683	0	0.336488	0.001332	0	0.001823	0.002	0.01575	0.001448	0	0.001982	0.008	0.03675	383.1839	0	84.08131	0.004049	0	0.08064	0.007039	0	0.034344	0.016817	0	0.396565	0.140569	0.457303	0.323766	0.336538	0.024505	0	0.434185	0.140569	0.457303	0.323766	0.336538	0.891357	0	3.240031	0.003792	0	0.000832
Santa Clara	2023	MDV	Aggregate	Aggregate	Diesel	4004.429	142223.9	19410.39	0.034292	0	0	0.003829	0	0	0.002	0.01575	0.004002	0	0	0.008	0.03675	350.448	0	0	0.000445	0	0	0.055086	0	0	0.009578	0	0	0	0	0	0	0.010904	0	0	0	0	0	0	0.180483	0	0	0.003313	0	0
Santa Clara	2023	MDV	Aggregate	Aggregate	Electricity	1532.638	48234.63	7794.674	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2023	MH	Aggregate	Aggregate	Gasoline	2857.04	26157.03	285.8182	0.361451	0	0.336127	0.001555	0	0.000345	0.003	0.05586	0.001691	0	0.000375	0.012	0.13034	1731.827	0	25.56622	0.013045	0	0.031746	0.02323	0	0.035777	0.05596	0	0.132332	0.081683	1.97006	0.033844	0.096831	0.081657	0	0.144887	0.081683	1.97006	0.033844	0.096831	1.390474	0	2.91812	0.017138	0	0.000253
Santa Clara	2023	MH	Aggregate	Aggregate	Diesel	1053.778	9907.819	105.3778	4.0099	0	0	0.079211	0	0	0.004	0.05586	0.082793	0	0	0.016	0.13034	1007.175	0	0	0.004873	0	0	0.158314	0	0	0.104917	0	0	0	0	0	0	0.119441	0	0	0	0	0	0	0.367033	0	0	0.009521	0	0
Santa Clara	2023	MHDT	Aggregate	Aggregate	Gasoline	1507.68	78317.15	30165.67	0.385258	0.088623	0.367592	0.001293	0	0.000446	0.003	0.05586	0.001406	0	0.000485	0.012	0.13034	1697.438	526.34	38.16999	0.011942	0.266499	0.038604	0.019927	0.007724	0.029367	0.057622	1.014767	0.206928	0.080059	0.455824	0.017154	0.033931	0.084081	1.480746	0.22656	0.080059	0.455824	0.017154	0.033931	1.316681	15.14023	4.623501	0.016798	0.005209	0.000378
Santa Clara	2023	MHDT	Aggregate	Aggregate	Diesel	9262.822	558718.8	92583.75	1.59247	5.703996	2.12952	0.007398	0.005414	0	0.003	0.05586	0.007733	0.005658	0	0.012	0.13034	1010.629	886.4048	0	0.000529	0.003602	0	0.158857	0.13933	0	0.011387	0.077551	0	0	0	0	0	0.012963	0.088286	0	0	0	0	0	0.113094	2.687765	0	0.009548	0.008374	0
Santa Clara	2023	OBUS	Aggregate	Aggregate	Gasoline	503.4572	23697.77	10073.17	0.401971	0.065148	0.321785	0.000992	0	0.000219	0.003	0.05586	0.001079	0	0.000239	0.012	0.13034	1743.614	374.6133	26.08015	0.011771	0.201157	0.029667	0.020963	0.005691	0.026276	0.05538	0.74759	0.152323	0.027045	0.299878	0.01619	0.03654	0.080811	1.090882	0.166775	0.027045	0.299878	0.01619	0.03654	1.211154	5.782545	3.193149	0.017254	0.003707	0.000258
Santa Clara	2023	OBUS	Aggregate	Aggregate	Diesel	753.4001	53354.33	6899.877	1.902854	8.28017	2.210652	0.009253	0.002588	0	0.003	0.05586	0.009671	0.002705	0	0.012	0.13034	1163.247	1820.683	0	0.000567	0.024706	0	0.182846	0.286186	0	0.012205	0.531913	0	0	0	0	0	0.013895	0.605542	0	0	0	0	0	0.141032	9.053135	0	0.01099	0.017201	0
Santa Clara	2023	SBUS	Aggregate	Aggregate	Gasoline	263.5229	11968.77	1054.092	0.420713	0.924728	0.578334	0.001201	0	0.000506	0.002	0.3192	0.001307	0	0.00055	0.008	0.7448	859.0893	2565.057	48.16666	0.011122	2.441451	0.057864	0.023879	0.088232	0.054355	0.054742	10.61517	0.330464	0.063152	0.426847	0.010977	0.026004	0.07988	15.48964	0.361817	0.063152	0.426847	0.010977	0.026004	1.167899	82.08092	8.465591	0.008501	0.025383	0.000477
Santa Clara	2023	SBUS	Aggregate	Aggregate	Diesel	1013.614	31894.7	11696.96	6.544978	44.13946	0.832887	0.040645	0.046993	0	0.003	0.3192	0.042483	0.049118	0	0.012	0.7448	1136.76	3703.284	0	0.004568	0.012858	0	0.178683	0.582105	0	0.098352	0.27682	0	0	0	0	0	0.111967	0.315138	0	0	0	0	0	0.275014	6.038953	0	0.01074	0.034987	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Gasoline	8.423223	1060.331	33.69289	0.150806	0	0.638272	0.002209	0	0.000888	0.003	0.05586	0.002402	0	0.000966	0.012	0.13034	1956.542	0	88.49758	0.007038	0	0.09018	0.015696	0	0.066738	0.022728	0	0.374288	0.008476	0.037646	0.001991	0.00493	0.033164	0	0.409798	0.008476	0.037646	0.001991	0.00493	0.258128	0	8.852622	0.019362	0	0.000876
Santa Clara	2023	UBUS	Aggregate	Aggregate	Diesel	430.5287	46874.38	1722.115	0.802545	0	0	0.005646	0	0	0.008399	0.029403	0.005901	0	0	0.033598	0.068607	1480.062	0	0	0.077245	0	0	0.232645	0	0	0.001104	0	0	0	0	0	0	0.078834	0	0	0	0	0	0	0.131094	0	0	0.013992	0	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Natural Ga	96.97562	11960.41	387.9025	0.491564	0	0	0.003197	0	0	0.008538	0.028723	0.003341	0	0	0.034153	0.06702	2024.074	0	0	6.451045	0	0	0.412621	0	0	0.092173	0	0	0	0	0	0	6.583765	0	0	0	0	0	0	50.12464	0	0	0	0	0

Source: EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2030
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDL	PM10_STR	PM10_PM	PM10_PM	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUN	N2O_IDLE	N2O_STRE	ROG_RUN	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_REST	ROG_DIUR	TOG_RUN	TOG_IDLE	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_RESTI	TOG_DIUR	CO_RUNE	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2030	HHDT	Aggregate	Aggregate	Gasoline	6.644908	846.0095	132.9513	2.895279	0	0.044486	0.001084	0	0.000414	0.005	0.02646	0.001179	0	0.00045	0.02	0.06174	1677.599	0	40.07141	0.06849	0	0.000337	0.127319	0	0.001575	0.302922	0	0.001761	0.044849	0.220711	0.012382	0.020645	0.442024	0	0.001928	0.044849	0.220711	0.012382	0.020645	28.21474	0	5.186707	0.016601	0	0.000397
Santa Clara	2030	HHDT	Aggregate	Aggregate	Diesel	9431.66	1177485	101453.9	2.539781	56.05241	2.353151	0.023044	0.021785	0	0.008907	0.026186	0.024086	0.02277	0	0.035627	0.061101	1202.821	10016.29	0	0.001063	0.214358	0	0.189067	1.574421	0	0.022896	4.615071	0	0	0	0	0	0.026066	5.253907	0	0	0	0	0	0.238872	67.80499	0	0.011364	0.094629	0
Santa Clara	2030	HHDT	Aggregate	Aggregate	Natural Ga	400.4237	16329.01	1561.653	0.881174	19.09434	0	0.003462	0.015749	0	0.009	0.02646	0.003619	0.016461	0	0.036	0.06174	2899.524	3653.632	0	3.225286	1.19295	0	0.591087	0.744817	0	0.090199	0.028054	0	0	0	0	0	3.341906	1.230036	0	0	0	0	0	11.01311	21.88788	0	0	0	0
Santa Clara	2030	LDA	Aggregate	Aggregate	Gasoline	869969.1	28403709	4092414	0.020358	0	0.132956	0.000879	0	0.001249	0.002	0.01575	0.000956	0	0.001359	0.008	0.03675	211.6944	0	44.94162	0.001023	0	0.030835	0.003085	0	0.020493	0.003388	0	0.12606	0.065117	0.180811	0.11416	0.123291	0.004944	0	0.13802	0.065117	0.180811	0.11416	0.123291	0.43107	0	1.801842	0.002095	0	0.000445
Santa Clara	2030	LDA	Aggregate	Aggregate	Diesel	10023.63	337674.2	47693.27	0.01676	0	0	0.001829	0	0	0.002	0.01575	0.001912	0	0	0.008	0.03675	166.1368	0	0	0.000273	0	0	0.026114	0	0	0.005885	0	0	0	0	0	0	0.006699	0	0	0	0	0	0	0.146966	0	0	0.001571	0	0
Santa Clara	2030	LDA	Aggregate	Aggregate	Electricity	46172.96	1625146	221619.4	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2030	LDT1	Aggregate	Aggregate	Gasoline	88972.38	2670256	412660.2	0.034308	0	0.154254	0.000998	0	0.001379	0.002	0.01575	0.001085	0	0.001499	0.008	0.03675	248.8135	0	52.89319	0.001722	0	0.036164	0.003879	0	0.021779	0.00667	0	0.15755	0.095382	0.371981	0.194977	0.219194	0.009733	0	0.172497	0.095382	0.371981	0.194977	0.219194	0.548445	0	1.868724	0.002462	0	0.000523
Santa Clara	2030	LDT1	Aggregate	Aggregate	Diesel	12.41764	352.1646	54.72798	0.189506	0	0	0.017188	0	0	0.002	0.01575	0.017965	0	0	0.008	0.03675	322.0531	0	0	0.001569	0	0	0.050622	0	0	0.033785	0	0	0	0	0	0	0.038462	0	0	0	0	0	0	0.286183	0	0	0.003045	0	0
Santa Clara	2030	LDT1	Aggregate	Aggregate	Electricity	2180.044	81488.93	10672.84	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2030	LDT2	Aggregate	Aggregate	Gasoline	281546.9	8446247	1307139	0.035247	0	0.174198	0.000925	0	0.001282	0.002	0.01575	0.001006	0	0.001394	0.008	0.03675	256.344	0	55.96845	0.00178	0	0.043514	0.003847	0	0.023481	0.006634	0	0.189401	0.09208	0.348635	0.233116	0.234964	0.00968	0	0.20737	0.09208	0.348635	0.233116	0.234964	0.568541	0	2.344012	0.002537	0	0.000554
Santa Clara	2030	LDT2	Aggregate	Aggregate	Diesel	2576.298	81354.46	12261.45	0.02908	0	0	0.003937	0	0	0.002	0.01575	0.004115	0	0	0.008	0.03675	226.4921	0	0	0.000595	0	0	0.035601	0	0	0.01282	0	0	0	0	0	0	0.014595	0	0	0	0	0	0	0.129762	0	0	0.002141	0	0
Santa Clara	2030	LDT2	Aggregate	Aggregate	Electricity	8320.478	213767.2	40645.17	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2030	LHDT1	Aggregate	Aggregate	Gasoline	17444.25	563109.1	259893.3	0.098098	0.030587	0.387515	0.002081	0	0.000333	0.002	0.03276	0.002264	0	0.000362	0.008	0.07644	897.5407	110.5325	17.36665	0.004317	0.101968	0.015524	0.006844	0.002802	0.033538	0.018245	0.350811	0.075233	0.094381	0.739315	0.019801	0.035959	0.026623	0.511903	0.082371	0.094381	0.739315	0.019801	0.035959	0.368714	3.768698	1.531971	0.008882	0.001094	0.000172
Santa Clara	2030	LHDT1	Aggregate	Aggregate	Diesel	14887.61	510107.2	187267.4	0.522674	1.343027	0	0.011738	0.026289	0	0.003	0.03276	0.012269	0.027477	0	0.012	0.07644	478.8761	118.3357	0	0.006165	0.005098	0	0.075273	0.018601	0	0.13273	0.10976	0	0	0	0	0	0.151104	0.124954	0	0	0	0	0	0.579164	0.909745	0	0.004527	0.001119	0
Santa Clara	2030	LHDT2	Aggregate	Aggregate	Gasoline	2535.293	81915.35	37772.09	0.091162	0.030032	0.379653	0.001975	0	0.000297	0.002	0.03822	0.002148	0	0.000323	0.008	0.08918	1021.816	126.3902	19.57212	0.00327	0.10112	0.014626	0.00699	0.00275	0.032936	0.012455	0.344716	0.06918	0.074032	0.436992	0.016932	0.02908	0.018175	0.503009	0.075743	0.074032	0.436992	0.016932	0.02908	0.249204	3.775612	1.472175	0.010112	0.001251	0.000194
Santa Clara	2030	LHDT2	Aggregate	Aggregate	Diesel	6126.051	201454.9	77058.01	0.503536	1.378592	0	0.017789	0.026933	0	0.003	0.03822	0.018593	0.028151	0	0.012	0.08918	540.7481	191.3797	0	0.006181	0.005098	0	0.084998	0.030082	0	0.133066	0.10976	0	0	0	0	0	0.151486	0.124954	0	0	0	0	0	0.586662	0.909745	0	0.005112	0.001809	0
Santa Clara	2030	MCY	Aggregate	Aggregate	Gasoline	38839.87	253703.2	77679.74	1.137409	0	0.270173	0.001994	0	0.002676	0.001	0.00504	0.002138	0	0.002862	0.004	0.01176	209.7572	0	59.22586	0.319087	0	0.24786	0.065566	0	0.015364	2.128511	0	1.877593	0.631299	1.487321	0.946881	1.786807	2.666273	0	2.04481	0.631299	1.487321	0.946881	1.786807	17.60732	0	9.199577	0.002076	0	0.000586
Santa Clara	2030	MDV	Aggregate	Aggregate	Gasoline	173606	5113918	803848	0.03715	0	0.190209	0.00093	0	0.001318	0.002	0.01575	0.001012	0	0.001433	0.008	0.03675	309.7804	0	67.68816	0.001872	0	0.04685	0.004005	0	0.024192	0.007071	0	0.21174	0.103941	0.361114	0.278651	0.281249	0.010317	0	0.231829	0.103941	0.361114	0.278651	0.281249	0.571385	0	2.441594	0.003066	0	0.00067
Santa Clara	2030	MDV	Aggregate	Aggregate	Diesel	5652.323	175214.3	26820.46	0.016338	0	0	0.001999	0	0	0.002	0.01575	0.00209	0	0	0.008	0.03675	295.1303	0	0	0.000296	0	0	0.04639	0	0	0.006382	0	0	0	0	0	0	0.007265	0	0	0	0	0	0	0.160558	0	0	0.00279	0	0
Santa Clara	2030	MDV	Aggregate	Aggregate	Electricity	5412.776	143464.5	26723.4	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2030	MH	Aggregate	Aggregate	Gasoline	2781.183	26082.35	278.2296	0.161957	0	0.344848	0.001294	0	0.000284	0.003	0.05586	0.001408	0	0.000309	0.012	0.13034	1534.746	0	22.64387	0.005412	0	0.028477	0.014768	0	0.039513	0.01789	0	0.108156	0.041368	0.780207	0.020421	0.050661	0.026105	0	0.118417	0.041368	0.780207	0.020421	0.050661	0.321425	0	2.382509	0.015188	0	0.000224
Santa Clara	2030	MH	Aggregate	Aggregate	Diesel	1271.562	11026.54	127.1562	3.194675	0	0	0.048471	0	0	0.004	0.05586	0.050662	0	0	0.016	0.13034	913.8987	0	0	0.004117	0	0	0.143652	0	0	0.088635	0	0	0	0	0	0	0.100905	0	0	0	0	0	0	0.288665	0	0	0.00864	0	0
Santa Clara	2030	MHDT	Aggregate	Aggregate	Gasoline	1942.274	96462.8	38861.02	0.137179	0.089333	0.328382	0.001276	0	0.000397	0.003	0.05586	0.001388	0	0.000432	0.012	0.13034	1512.526	477.0555	33.02741	0.004329	0.277482	0.032379	0.010371	0.008413	0.029895	0.018098	1.025296	0.159937	0.053505	0.276198	0.013009	0.02236	0.026409	1.49611	0.175111	0.053505	0.276198	0.013009	0.02236	0.365535	15.26266	3.370143	0.014968	0.004721	0.000327
Santa Clara	2030	MHDT	Aggregate	Aggregate	Diesel	11245.42	599136.6	111242.1	1.636194	4.546441	2.164606	0.007568	0.002068	0	0.003	0.05586	0.00791	0.002162	0	0.012	0.13034	909.8747	786.5238	0	0.000503	0.003226	0	0.14302	0.123631	0	0.010837	0.069445	0	0	0	0	0	0.012337	0.079058	0	0	0	0	0	0.11784	2.775159	0	0.008596	0.007431	0
Santa Clara	2030	OBUS	Aggregate	Aggregate	Gasoline	521.2442	22324.56	10429.05	0.201397	0.065222	0.308429	0.001191	0	0.000252	0.003	0.05586	0.001295	0	0.000274	0.012	0.13034	1542.791	344.1269	23.61734	0.005871	0.202191	0.026706	0.012891	0.005853	0.026143	0.025703	0.748687	0.134449	0.027407	0.319238	0.017082	0.037276	0.037506	1.092483	0.147204	0.027407	0.319238	0.017082	0.037276	0.529537	5.789149	2.766701	0.015267	0.003405	0.000234
Santa Clara	2030	OBUS	Aggregate	Aggregate	Diesel	845.8557	51263.29	7867.551	1.991442	9.302951	2.216948	0.010285	0.002947	0	0.003	0.05586	0.01075	0.003081	0	0.012	0.13034	1066.293	1893.973	0	0.000596	0.028932	0	0.167606	0.297706	0	0.012842	0.6229	0	0	0	0	0	0.01462	0.709124	0	0	0	0	0	0.14672	10.36618	0	0.010074	0.017893	0
Santa Clara	2030	SBUS	Aggregate	Aggregate	Gasoline	362.3014	15198.78	1449.205	0.285961	0.92653	0.616868	0.001215	0	0.000547	0.002	0.3192	0.001322	0	0.000595	0.008	0.7448	803.9675	2414.339	44.56576	0.00626	2.435971	0.055823	0.018735	0.089714	0.057177	0.030067	10.64152	0.317303	0.073145	0.474779	0.014584	0.030637	0.043873	15.52808	0.347407	0.073145	0.474779	0.014584	0.030637	0.649967	82.24088	7.563743	0.007956	0.023892	0.000441
Santa Clara	2030	SBUS	Aggregate	Aggregate	Diesel	980.5629	30722.11	11315.56	4.472027	34.94152	1.257143	0.029756	0.025511	0	0.003	0.3192	0.031102	0.026664	0	0.012	0.7448	1052.894	3501.127	0	0.003486	0.012263	0	0.1655	0.550328	0	0.075046	0.264022	0	0	0	0	0	0.085434	0.300569	0	0	0	0	0	0.238791	7.720739	0	0.009947	0.033077	0
Santa Clara	2030	UBUS	Aggregate	Aggregate	Gasoline	8.45001	1063.703	33.80004	0.336697	0	0.964336	0.002209	0	0.000888	0.003	0.05586	0.002402	0	0.000966	0.012	0.13034	1956.157	0	89.19596	0.006892	0	0.139066	0.027885	0	0.079916	0.022728	0	0.589249	0.05182	0.313542	0.009109	0.015639	0.033164	0	0.645153	0.05182	0.313542	0.009109	0.015639	0.405122	0	8.852622	0.019358	0	0.000883
Santa Clara	2030	UBUS	Aggregate	Aggregate	Diesel	376.8943	42036.62	1507.577	0.804174	0	0	0.005656	0	0	0.008428	0.029265	0.005912	0	0	0.03371	0.068284	1523.264	0	0	0.077448	0	0	0.239436	0	0	0.001107	0	0	0	0	0	0	0.079041	0	0	0	0	0	0	0.131472	0	0	0.0144	0	0
Santa Clara	2030	UBUS	Aggregate	Aggregate	Natural Ga	152.2876	16985.28	609.1502	0.487691	0	0	0.003174	0	0	0.008428	0.029265	0.003317	0	0	0.03371	0.068284	2010.534	0	0	6.385838	0	0	0.40986	0	0	0.091241	0	0	0	0	0	0	6.517216	0	0	0	0	0	0	49.56612	0	0	0	0	0

Attachment 4: Construction Emissions and Health Risk Calculations

1710 Moorpark Ave, San Jose, CA

DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Emissions per Point Source (g/s)
2021	Construction	0.0616	Point	108	123.1	0.03748	4.72E-03	4.37E-05
2022	Construction	0.0075	Point	108	15.0	0.00458	5.77E-04	5.34E-06
Total		***0.0691***			***138.2***	***0.0421***	***0.0053***	

Emissions assumed to be evenly distributed over each construction areas

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

1710 Moorpark Ave, San Jose, CA

PM2.5 Fugitive Dust Construction Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2021	Construction	CON_FUG	0.0264	52.8	0.01608	2.03E-03	2692.528	7.53E-07
2022	Construction	CON_FUG	0.0002	0.4	0.00013	1.58E-05	2692.528	5.86E-09
Total			***0.0266***	***53.2***	***0.0162***	***0.0020***		

Emissions assumed to be evenly distributed over each construction areas

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

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Emissions per Point Source (g/s)
2021	Construction	0.0044	Point	108	8.7	0.00266	3.35E-04	3.10E-06
2022	Construction	0.0041	Point	108	8.3	0.00252	3.18E-04	2.94E-06
Total		***0.0085***			***17.0***	***0.0052***	***0.0007***	

Emissions assumed to be evenly distributed over each construction areas

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

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

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2021	Construction	CON_FUG	0.0066	13.1	0.00400	5.04E-04	2692.528	1.87E-07
2022	Construction	CON_FUG	0.0002	0.4	0.00013	1.58E-05	2692.528	5.86E-09
Total			***0.0068***	***13.5***	***0.0041***	***0.0005***		

Emissions assumed to be evenly distributed over each construction areas

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

1710 Moorpark Ave, San Jose, CA - Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

Emissions Year	Maximum Concentrations Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million) Infant/Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2021	0.1236	0.1125	67.04	0.02	0.24
2022	0.0151	0.0009	8.19	0.00	0.02
Total	-	-	**75.2**	-	-
Maximum	0.1236	0.1125	**-**	**0.02**	**0.24**

Maximum Impacts at MEI Location - With Mitigation

Emissions Year	Maximum Concentrations Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million) Infant/Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2021	0.0088	0.0279	4.75	0.002	0.04
2022	0.0083	0.0009	4.51	0.0017	0.01
Total	-	-	**9.3**	-	-
Maximum	0.0088	0.0279	**-**	**0.002**	**0.04**

- Tier 4 Interim Engine Mitigation, Electric generators, air compressors, and welders

1710 Moorpark Ave, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Neighborhood Christian Preschool (6 weeks - 5 years old) - 1.0 meters - Child Exposure

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

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C_{air} x SAF x 8-Hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
SAF = Student Adjustment Factor (unitless)
= (24 hrs/8 hrs) x (7 days/7 days) = 3
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant	**School Child**	**Adult**
Age -->	**0 - <2**	**2 - <16**	**16 - 30**
Parameter			
ASF =	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00
8-Hr BR* =	1200	520	240
A =	1	1	1
EF =	350	350	250
AT =	70	70	70
SAF =	3.00	3.00	1.00

* 95th percentile 8-hr breathing rates for moderate intensity activities

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Child - Exposure Information			**Child**		**Maximum**	
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**Annual**	**Age* Sensitivity Factor**	**Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
1	1	0 - 1	2021	0.1236	10	67.0	0.025	0.1125	0.2358
2	1	1 - 2	2022	0.0151	10	8.2	0.003	0.0009	0.0160
Total Increased Cancer Risk						**75.2**			

* Children assumed to be 6 weeks - 5 years of age

1710 Moorpark Ave, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Neighborhood Christian Preschool (6 weeks - 5 years old) - 4.0 meters - Child Exposure

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

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C_{air} x SAF x 8-Hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
SAF = Student Adjustment Factor (unitless)
= (24 hrs/8 hrs) x (7 days/7 days) = 3
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant	School Child	Adult
Age -->	0 - <2	2 - <16	16 - 30
Parameter			
ASF =	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00
8-Hr BR* =	1200	520	240
A =	1	1	1
EF =	350	350	250
AT =	70	70	70
SAF =	3.00	3.00	1.00

* 95th percentile 8-hr breathing rates for moderate intensity activities

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Child - Exposure Information: DPM Conc (ug/m3) Year	Annual	Age* Sensitivity Factor	Child Cancer Risk (per million)	Maximum Hazard Index	Maximum Fugitive PM2.5	Maximum Total PM2.5
1	1	0 - 1	2021	0.1212	10	65.8	0.024	0.0995	0.2207
2	1	1 - 2	2022	0.0148	10	8.0	0.003	0.0008	0.0156
Total Increased Cancer Risk						**73.8**			

* Children assumed to be 6 weeks - 5 years of age

1710 Moorpark Ave, San Jose, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Neighborhood Christian Preschool (6 weeks - 5 years old) - 1.0 meters - Child Exposure

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

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C_{air} x SAF x 8-Hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
SAF = Student Adjustment Factor (unitless)
= (24 hrs/8 hrs) x (7 days/7 days) = 3
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant	**School Child**	**Adult**
Age -->	**0 - <2**	**2 - <16**	**16 - 30**
Parameter			
ASF =	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00
8-Hr BR* =	1200	520	240
A =	1	1	1
EF =	350	350	250
AT =	70	70	70
SAF =	3.00	3.00	1.00

* 95th percentile 8-hr breathing rates for moderate intensity activities

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Child - Exposure Information			**Child**
	Exposure				**Age***	**Cancer**
Exposure	**Duration**		**DPM Conc (ug/m3)**		**Sensitivity**	**Risk**
Year	**(years)**	**Age**	**Year**	**Annual**	**Factor**	**(per million)**
1	1	0 - 1	2021	0.0088	10	4.8
2	1	1 - 2	2022	0.0083	10	4.5
Total Increased Cancer Risk						**9.3**

* Children assumed to be 6 weeks - 5 years of age

	Maximum	
Hazard Index	**Fugitive PM2.5**	**Total PM2.5**
0.002	0.0279	0.0366
0.002	0.0009	0.0092

1710 Moorpark Ave, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 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 $(mg/kg\text{-}day)^{-1}$
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 ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult	Maximum		
Exposure Year	Exposure Duration (years)	Age	DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Cancer Risk (per million)	Modeled DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2021	0.0691	10	0.94	2021	0.0691	-	-			
1	1	0 - 1	2021	0.0691	10	11.35	2021	0.0691	1	0.20	0.014	0.0498	0.1171
2	1	1 - 2	2022	0.0085	10	1.39	2022	0.0085	1	0.02	0.002	0.0004	0.0088
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
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						**13.7**				**0.22**			

* Third trimester of pregnancy

1710 Moorpark Ave, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 4.5 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 $(mg/kg\text{-}day)^{-1}$
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 ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult	Maximum		
	Exposure				Age	Cancer	Modeled		Age	Cancer			
Exposure	Duration		DPM Conc (ug/m3)		Sensitivity	Risk	DPM Conc (ug/m3)		Sensitivity	Risk	Hazard	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	Index	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2021	0.0658	10	0.90	2021	0.0658	-	-			
1	1	0 - 1	2021	0.0658	10	10.81	2021	0.0658	1	0.19	0.013	0.0447	0.1104
2	1	1 - 2	2022	0.0081	10	1.32	2022	0.0081	1	0.02	0.002	0.0035	0.0084
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
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						**13.0**				**0.21**			

* Third trimester of pregnancy

1710 Moorpark Ave, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 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 $(mg/kg\text{-}day)^{-1}$
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 ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	Adult - Exposure Information Modeled DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)
0	0.25	-0.25 - 0*	2021	0.0049	10	0.07	2021	0.0049	-	-
1	1	0 - 1	2021	0.0049	10	0.80	2021	0.0049	1	0.01
2	1	1 - 2	2022	0.0047	10	0.76	2022	0.0047	1	0.01
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00
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						**1.6**				**0.03**

* Third trimester of pregnancy

Exposure Year	Maximum Hazard Index	Maximum Fugitive PM2.5	Maximum Total PM2.5
1	0.001	0.0124	0.0169
2	0.001	0.0004	0.0050

1710 Moorpark Ave, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Brooks House (Adult Seniors Only) -4.5 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 $(mg/kg\text{-}day)^{-1}$
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 ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Adult - Exposure Information: Modeled DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)
1	1	55-56	2021	0.0397	1	0.11
2	1	56-57	2022	0.0049	1	0.01
Total Increased Cancer Risk						**0.13**

* Assumed Adult Seniors Only

Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.008	0.0347	0.0744
0.001	0.0003	0.0051

1710 Moorpark Ave, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at Brooks House (Adult Seniors Only) -7.6 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 $(mg/kg\text{-}day)^{-1}$
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 $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Adult - Exposure Information			Adult
	Exposure		Modeled		Age	Cancer
Exposure	Duration		DPM Conc (ug/m3)		Sensitivity	Risk
Year	(years)	Age	Year	Annual	Factor	(per million)
1	1	55-56	2021	0.0409	1	0.12
2	1	56-57	2022	0.0050	1	0.01
Total Increased Cancer Risk						**0.13**

* Assumed Adult Seniors Only

	Maximum	
Hazard Index	**Fugitive PM2.5**	**Total PM2.5**
0.008	0.0249	0.0658
0.001	0.0002	0.0052

Attachment 5: Community Risk Screening and Calculations

Interstate 280 Traffic Emissions and Health Risk Calculations – Project Operation

```
           File Name:   Santa Clara (SF) - 2023 - Annual-I280.EF
CT-EMFAC2017 Version:   1.0.2.27401
            Run Date:   7/6/2020 7:57:26 PM
                Area:   Santa Clara (SF)
       Analysis Year:   2023
              Season:   Annual

=======================================================================

Vehicle Category       VMT Fraction           Diesel VMT Fraction     Gas VMT Fraction
                       Across Category        Within Category         Within Category
         Truck 1            0.015                  0.487                   0.513
         Truck 2            0.016                  0.938                   0.047
       Non-Truck            0.969                  0.014                   0.958

=======================================================================

               Road Type:               Freeway
     Silt Loading Factor:                  CARB         0.015 g/m2
Precipitation Correction:                  CARB         P = 64 days     N = 365 days

=======================================================================

Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

       Pollutant Name     10 mph     20 mph     30 mph     40 mph     50 mph     60 mph     65 mph
                PM2.5   0.005967   0.002883   0.001749   0.001347   0.001308   0.001539   0.001767
                  TOG   0.127630   0.060954   0.036787   0.027123   0.024266   0.026398   0.029669
            Diesel PM   0.000697   0.000424   0.000330   0.000337   0.000419   0.000568   0.000661
                 DEOG   0.008231   0.002276   0.001281   0.000922   0.000794   0.000828   0.000881

=======================================================================

Fleet Average Running Loss Emission Factors (grams/veh-hour)

       Pollutant Name   Emission Factor
                  TOG          1.362230

=======================================================================

Fleet Average Tire Wear Factors (grams/veh-mile)

       Pollutant Name   Emission Factor
                PM2.5          0.002089

=======================================================================

Fleet Average Brake Wear Factors (grams/veh-mile)

       Pollutant Name   Emission Factor
                PM2.5          0.016722

=======================================================================

Fleet Average Road Dust Factors (grams/veh-mile)

       Pollutant Name   Emission Factor
                PM2.5          0.007234

=============================END=======================================
```

1710 Moorpark Ave - Traffic -Roadway Emissions
Interstate 280
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
EB280_DPM	Eastbound Interstate 280	E	4	687.0	0.43	20.6	67.7	3.4	variable	90,090
WB280_DPM	Westbound Interstate 280	W	4	687.0	0.43	20.6	67.7	3.4	variable	90,090
									Total	180,180

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	10	
Emissions per Vehicle (g/VMT)	0.00066	0.000568	0.000697	

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and DPM Emissions - EB280_DPM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	3523	2.76E-04	9	6.50%	5854	4.84E-04	17	5.58%	5025	3.38E-04
2	2.59%	2331	1.83E-04	10	7.36%	6631	5.20E-04	18	3.28%	2953	1.99E-04
3	2.88%	2590	2.03E-04	11	6.33%	5699	4.47E-04	19	2.36%	2124	1.66E-04
4	3.34%	3005	2.36E-04	12	6.84%	6165	4.83E-04	20	0.92%	829	6.50E-05
5	2.19%	1969	1.54E-04	13	6.15%	5543	4.34E-04	21	2.99%	2694	2.11E-04
6	3.39%	3057	2.40E-04	14	6.15%	5543	4.34E-04	22	4.14%	3730	2.92E-04
7	5.98%	5388	4.22E-04	15	5.23%	4714	3.70E-04	23	2.47%	2228	1.75E-04
8	4.66%	4196	3.47E-04	16	3.91%	3523	2.76E-04	24	0.86%	777	6.09E-05
								Total		90,090	

2023 Hourly Traffic Volumes Per Direction and DPM Emissions - WB280_DPM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.91%	3523	2.76E-04	9	6.50%	5854	3.94E-04	17	5.58%	5025	4.15E-04
2	2.59%	2331	1.83E-04	10	7.36%	6631	5.20E-04	18	3.28%	2953	2.44E-04
3	2.88%	2590	2.03E-04	11	6.33%	5699	4.47E-04	19	2.36%	2124	1.66E-04
4	3.34%	3005	2.36E-04	12	6.84%	6165	4.83E-04	20	0.92%	829	6.50E-05
5	2.19%	1969	1.54E-04	13	6.15%	5543	4.34E-04	21	2.99%	2694	2.11E-04
6	3.39%	3057	2.40E-04	14	6.15%	5543	4.34E-04	22	4.14%	3730	2.92E-04
7	5.98%	5388	4.22E-04	15	5.23%	4714	3.70E-04	23	2.47%	2228	1.75E-04
8	4.66%	4196	2.83E-04	16	3.91%	3523	2.76E-04	24	0.86%	777	6.09E-05
								Total		90,090	

Analysis Year = ***2023***

Vehicle Type	2018 Caltrans Vehicles (veh/day)	2023 Vehicles (veh/day)
Truck 1 (MDT)	2,548	2,675
Truck 2 (HDT)	2,772	2,910
Non-Truck	166,280	174,594
Total	**171,600**	**180,180**

Increase From 2018	1.05
Vehicles/Direction	**90,090**
Avg Vehicles/Hour/Direction	3,754

Traffic Data Year = ***2018***

Caltrans AADTs & Truck Percentage (2018)	AADT Total	Total Truck	Trucks by Axle 2	3	4	5
I-280 A Race Street/Southwest Expressway	171,600	5,320	2,548	926	255	1,591
Rte 84, B Fremont, Jct Rte. 238			47.90%	17.40%	4.80%	29.90%
Percent of Total Vehicles		3.10%	1.48%	0.54%	0.15%	0.93%

Traffic Increase per Year (%) = *1.00%*

1710 Moorpark Ave - Traffic -Roadway Emissions
Interstate 280
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
EB280_PM25	Eastbound Interstate 280	E	4	687.0	0.43	20.6	68	1.3	variable	90,090
WB280_PM25	Westbound Interstate 280	W	4	687.0	0.43	20.6	68	1.3	variable	90,090
									Total	180,180

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	10	
Emissions per Vehicle (g/VMT)	0.001767	0.00154	0.005967	

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and PM2.5 Emissions - EB280_PM25

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	1037	2.17E-04	9	7.11%	6407	4.53E-03	17	7.38%	6653	1.21E-03
2	0.42%	376	7.88E-05	10	4.39%	3957	8.29E-04	18	8.17%	7362	1.34E-03
3	0.41%	367	7.69E-05	11	4.66%	4202	8.80E-04	19	5.70%	5132	1.08E-03
4	0.26%	237	4.97E-05	12	5.89%	5305	1.11E-03	20	4.27%	3850	8.07E-04
5	0.50%	451	9.45E-05	13	6.15%	5542	1.16E-03	21	3.26%	2936	6.15E-04
6	0.90%	815	1.71E-04	14	6.04%	5439	1.14E-03	22	3.30%	2972	6.23E-04
7	3.79%	3417	7.16E-04	15	7.01%	6317	1.32E-03	23	2.46%	2216	4.64E-04
8	7.76%	6993	4.95E-03	16	7.14%	6428	1.35E-03	24	1.86%	1679	3.52E-04
								Total		90,090	

2023 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - WB280_PM25

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	1037	2.17E-04	9	7.11%	6407	1.17E-03	17	7.38%	6653	4.71E-03
2	0.42%	376	7.88E-05	10	4.39%	3957	8.29E-04	18	8.17%	7362	5.21E-03
3	0.41%	367	7.69E-05	11	4.66%	4202	8.80E-04	19	5.70%	5132	1.08E-03
4	0.26%	237	4.97E-05	12	5.89%	5305	1.11E-03	20	4.27%	3850	8.07E-04
5	0.50%	451	9.45E-05	13	6.15%	5542	1.16E-03	21	3.26%	2936	6.15E-04
6	0.90%	815	1.71E-04	14	6.04%	5439	1.14E-03	22	3.30%	2972	6.23E-04
7	3.79%	3417	7.16E-04	15	7.01%	6317	1.32E-03	23	2.46%	2216	4.64E-04
8	7.76%	6993	1.28E-03	16	7.14%	6428	1.35E-03	24	1.86%	1679	3.52E-04
								Total		90,090	

1710 Moorpark Ave - Traffic -Roadway Emissions
Interstate 280
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
EB280_TEXH	Eastbound Interstate 280	E	4	687.0	0.43	20.6	68	1.3	variable	90,090
WB280_TEXH	Westbound Interstate 280	W	4	687.0	0.43	20.6	68	1.3	variable	90,090
									Total	180,180

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	10	
All Vehicles TOG Emissions per Vehicle (g/VMT)	0.029669	0.026398	0.12763	
Diesel Vehicles TOG Emissions per Vehicle (g/VMT)	0.001268	0.000828	0.00823	
Gasoline Vehicles Emissions per Vehicle (g/VMT)	0.02840	0.02557	0.11940	

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Exhaust Emissions - EB280_TEXH

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	1037	3.49E-03	9	7.11%	6407	9.07E-02	17	7.38%	6653	2.02E-02
2	0.42%	376	1.27E-03	10	4.39%	3957	1.33E-02	18	8.17%	7362	2.23E-02
3	0.41%	367	1.24E-03	11	4.66%	4202	1.41E-02	19	5.70%	5132	1.73E-02
4	0.26%	237	7.98E-04	12	5.89%	5305	1.79E-02	20	4.27%	3850	1.30E-02
5	0.50%	451	1.52E-03	13	6.15%	5542	1.87E-02	21	3.26%	2936	9.89E-03
6	0.90%	815	2.74E-03	14	6.04%	5439	1.83E-02	22	3.30%	2972	1.00E-02
7	3.79%	3417	1.15E-02	15	7.01%	6317	2.13E-02	23	2.46%	2216	7.46E-03
8	7.76%	6993	9.90E-02	16	7.14%	6428	2.16E-02	24	1.86%	1679	5.66E-03
								Total		90,090	

2023 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - WB280_TEXH

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	1037	3.49E-03	9	7.11%	6407	1.94E-02	17	7.38%	6653	9.42E-02
2	0.42%	376	1.27E-03	10	4.39%	3957	1.33E-02	18	8.17%	7362	1.04E-01
3	0.41%	367	1.24E-03	11	4.66%	4202	1.41E-02	19	5.70%	5132	1.73E-02
4	0.26%	237	7.98E-04	12	5.89%	5305	1.79E-02	20	4.27%	3850	1.30E-02
5	0.50%	451	1.52E-03	13	6.15%	5542	1.87E-02	21	3.26%	2936	9.89E-03
6	0.90%	815	2.74E-03	14	6.04%	5439	1.83E-02	22	3.30%	2972	1.00E-02
7	3.79%	3417	1.15E-02	15	7.01%	6317	2.13E-02	23	2.46%	2216	7.46E-03
8	7.76%	6993	2.12E-02	16	7.14%	6428	2.16E-02	24	1.86%	1679	5.66E-03
								Total		90,090	

1710 Moorpark Ave - Traffic -Roadway Emissions
Interstate 280
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
EB280_TEVAP	Eastbound Interstate 280	E	4	687.0	0.43	20.6	68	1.3	variable	90,090
WB280_TEVAP	Westbound Interstate 280	W	4	687.0	0.43	20.6	68	1.3	variable	90,090
									Total	180,180

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	10	
Emissions per Vehicle per Hour (g/hour)	1.36223	1.36223	1.36223	
Emissions per Vehicle per Mile (g/VMT)	0.02096	0.02270	0.13622	

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Evaporative Emissions - EB280_TEVAP

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	1037	2.58E-03	9	7.11%	6407	1.03E-01	17	7.38%	6653	1.79E-02
2	0.42%	376	9.35E-04	10	4.39%	3957	9.83E-03	18	8.17%	7362	1.98E-02
3	0.41%	367	9.13E-04	11	4.66%	4202	1.04E-02	19	5.70%	5132	1.28E-02
4	0.26%	237	5.89E-04	12	5.89%	5305	1.32E-02	20	4.27%	3850	9.57E-03
5	0.50%	451	1.12E-03	13	6.15%	5542	1.38E-02	21	3.26%	2936	7.30E-03
6	0.90%	815	2.02E-03	14	6.04%	5439	1.35E-02	22	3.30%	2972	7.38E-03
7	3.79%	3417	8.49E-03	15	7.01%	6317	1.57E-02	23	2.46%	2216	5.51E-03
8	7.76%	6993	1.13E-01	16	7.14%	6428	1.60E-02	24	1.86%	1679	4.17E-03
								Total		90,090	

2023 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - WB280_TEVAP

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	1037	2.58E-03	9	7.11%	6407	1.72E-02	17	7.38%	6653	1.07E-01
2	0.42%	376	9.35E-04	10	4.39%	3957	9.83E-03	18	8.17%	7362	1.19E-01
3	0.41%	367	9.13E-04	11	4.66%	4202	1.04E-02	19	5.70%	5132	1.28E-02
4	0.26%	237	5.89E-04	12	5.89%	5305	1.32E-02	20	4.27%	3850	9.57E-03
5	0.50%	451	1.12E-03	13	6.15%	5542	1.38E-02	21	3.26%	2936	7.30E-03
6	0.90%	815	2.02E-03	14	6.04%	5439	1.35E-02	22	3.30%	2972	7.38E-03
7	3.79%	3417	8.49E-03	15	7.01%	6317	1.57E-02	23	2.46%	2216	5.51E-03
8	7.76%	6993	1.88E-02	16	7.14%	6428	1.60E-02	24	1.86%	1679	4.17E-03
								Total		90,090	

1710 Moorpark Ave - Traffic -Roadway Emissions
Interstate 280
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
EB280_FUG	Eastbound Interstate 280	E	4	687.0	0.43	20.6	68	1.3	variable	90,090
WB280_FUG	Westbound Interstate 280	W	4	687.0	0.43	20.6	68	1.3	variable	90,090
									Total	180,180

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	10	
Tire Wear - Emissions per Vehicle (g/VMT)	0.00209	0.00209	0.00209	
Brake Wear - Emissions per Vehicle (g/VMT)	0.01672	0.01672	0.01672	
Road Dust - Emissions per Vehicle (g/VMT)	0.00723	0.00723	0.00723	
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02605	0.02605	0.02605	

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - EB280_FUG

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	1037	3.20E-03	9	7.11%	6407	1.98E-02	17	7.38%	6653	2.05E-02
2	0.42%	376	1.16E-03	10	4.39%	3957	1.22E-02	18	8.17%	7362	2.27E-02
3	0.41%	367	1.13E-03	11	4.66%	4202	1.30E-02	19	5.70%	5132	1.58E-02
4	0.26%	237	7.32E-04	12	5.89%	5305	1.64E-02	20	4.27%	3850	1.19E-02
5	0.50%	451	1.39E-03	13	6.15%	5542	1.71E-02	21	3.26%	2936	9.07E-03
6	0.90%	815	2.52E-03	14	6.04%	5439	1.68E-02	22	3.30%	2972	9.18E-03
7	3.79%	3417	1.06E-02	15	7.01%	6317	1.95E-02	23	2.46%	2216	6.84E-03
8	7.76%	6993	2.16E-02	16	7.14%	6428	1.99E-02	24	1.86%	1679	5.19E-03
								Total		90,090	

2023 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - WB280_FUG

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	1037	3.20E-03	9	7.11%	6407	1.98E-02	17	7.38%	6653	2.05E-02
2	0.42%	376	1.16E-03	10	4.39%	3957	1.22E-02	18	8.17%	7362	2.27E-02
3	0.41%	367	1.13E-03	11	4.66%	4202	1.30E-02	19	5.70%	5132	1.58E-02
4	0.26%	237	7.32E-04	12	5.89%	5305	1.64E-02	20	4.27%	3850	1.19E-02
5	0.50%	451	1.39E-03	13	6.15%	5542	1.71E-02	21	3.26%	2936	9.07E-03
6	0.90%	815	2.52E-03	14	6.04%	5439	1.68E-02	22	3.30%	2972	9.18E-03
7	3.79%	3417	1.06E-02	15	7.01%	6317	1.95E-02	23	2.46%	2216	6.84E-03
8	7.76%	6993	2.16E-02	16	7.14%	6428	1.99E-02	24	1.86%	1679	5.19E-03
								Total		90,090	

1710 Moorpark Avenue, San Jose, CA - Interstate 280 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 2nd Floor Residential Receptors (5.3 meter receptor heights)

Emissions Year	2023
Receptor Information	
Number of Receptors	53
Receptor Height =	2nd Floor - 5.3 meters above ground level
Receptor distances =	5 meter (16 feet) grid spacing in project residential areas
Meteorological Conditions	
BAAQMD San Jose Airport Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Emission	Concentration (µg/m^3)		
Years	DPM	Exhaust TOG	Evaporative TOG
2023	0.01145	0.7323	0.6730

Emission	PM2.5 Concentrations (µg/m^3)		
Years	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2022	0.513	0.4708	0.0420

1710 Moorpark Avenue, San Jose, CA - Interstate 280 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 3rd Floor Residential Receptors (8.7 meter receptor heights)

Emissions Year	2023
Receptor Information	
Number of Receptors	53
Receptor Height =	3rd Floor - 8.7 meters above ground level
Receptor distances =	5 meter (16 feet) grid spacing in project residential areas
Meteorological Conditions	
BAAQMD San Jose Airport Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Emission	Concentration (µg/m^3)		
Years	DPM	Exhaust TOG	Evaporative TOG
2023	0.00806	0.4813	0.4442

Emission	PM2.5 Concentrations (µg/m^3)		
Years	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2022	0.333	0.3053	0.0275

1710 Moorpark Avenue, San Jose, CA - Interstate 280 Traffic Maximum Cancer Risks
On-Site 2nd Floor Residential Receptors (5.3 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
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 ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors (mg/kg-day)$^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - <2**	**2 - <16**	**16 - 30**
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information							
		Exposure		Age	Annual TAC Conc (ug/m3)			Cancer Risk (per million)			
Exposure		Duration		Sensitivity		Exhaust	Evaporative		Exhaust	Evaporative	
Year	Year	(years)	Age	Factor	DPM	TOG	TOG	DPM	TOG	TOG	Total
0	2023	0.25	-0.25 - 0*	10	0.0115	0.7323	0.6730	0.156	0.057	0.003	0.22
1	2023	1	1	10	0.0115	0.7323	0.6730	1.88	0.687	0.037	2.60
2	2024	1	2	10	0.0115	0.7323	0.6730	1.88	0.687	0.037	2.60
3	2025	1	3	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
4	2026	1	4	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
5	2027	1	5	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
6	2028	1	6	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
7	2029	1	7	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
8	2030	1	8	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
9	2031	1	9	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
10	2032	1	10	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
11	2033	1	11	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
12	2034	1	12	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
13	2035	1	13	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
14	2036	1	14	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
15	2037	1	15	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
16	2038	1	16	3	0.0115	0.7323	0.6730	0.30	0.108	0.006	0.41
17	2039	1	17	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
18	2040	1	18	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
19	2041	1	19	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
20	2042	1	20	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
21	2043	1	21	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
22	2044	1	22	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
23	2045	1	23	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
24	2046	1	24	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
25	2047	1	25	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
26	2048	1	26	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
27	2049	1	27	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
28	2050	1	28	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
29	2051	1	29	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
30	2052	1	30	1	0.0115	0.7323	0.6730	0.03	0.012	0.001	0.046
Total Increased Cancer Risk			**Total**					8.52	3.112	0.169	**11.80**

* Third trimester of pregnancy

1710 Moorpark Avenue, San Jose, CA - Interstate 280 Traffic Maximum Cancer Risks
On-Site 3rd Floor Residential Receptors (8.7 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
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 ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information				Cancer Risk (per million)			
		Exposure		Age	Annual TAC Conc (ug/m3)						
Exposure		Duration		Sensitivity		Exhaust	Evaporative		Exhaust	Evaporative	
Year	Year	(years)	Age	Factor	DPM	TOG	TOG	DPM	TOG	TOG	Total
0	2023	0.25	-0.25 - 0*	10	0.0081	0.4813	0.4442	0.110	0.037	0.002	0.15
1	2023	1	1	10	0.0081	0.4813	0.4442	1.32	0.451	0.025	1.80
2	2024	1	2	10	0.0081	0.4813	0.4442	1.32	0.451	0.025	1.80
3	2025	1	3	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
4	2026	1	4	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
5	2027	1	5	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
6	2028	1	6	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
7	2029	1	7	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
8	2030	1	8	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
9	2031	1	9	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
10	2032	1	10	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
11	2033	1	11	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
12	2034	1	12	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
13	2035	1	13	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
14	2036	1	14	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
15	2037	1	15	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
16	2038	1	16	3	0.0081	0.4813	0.4442	0.21	0.071	0.004	0.28
17	2039	1	17	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
18	2040	1	18	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
19	2041	1	19	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
20	2042	1	20	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
21	2043	1	21	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
22	2044	1	22	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
23	2045	1	23	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
24	2046	1	24	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
25	2047	1	25	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
26	2048	1	26	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
27	2049	1	27	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
28	2050	1	28	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
29	2051	1	29	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
30	2052	1	30	1	0.0081	0.4813	0.4442	0.02	0.008	0.000	0.031
Total Increased Cancer Risk			**Total**					6.00	2.045	0.111	**8.16**

* Third trimester of pregnancy

PM2.5 Concentrations From Interstate 280, Moorpark Avenue, and Parkmoor Avenue Traffic at On-Site Project Receptors – 2nd through 4th Floor Levels

1710 Moorpark Avenue, San Jose, CA
Total PM2.5 Concentrations
2nd Floor receptors - 5.3 meter receptor heights
2023

80% for 21 of 24 hours

MERV-13 at 70.0% Ave Control
PM Control Factor = 0.3

			PM2.5 Concentrations (µg/m³)			MERV-13 Filtration - PM2.5 Concentrations (µg/m3)		
			I-280	Moorpark Ave	Parkmoor Ave	I-280	Moorpark Ave	Parkmoor Ave
Receptor No.	UTM-X	UTM-Y	Average Concentration (µg/m3)	Average Concentration (µg/m3)	Average Concentration (µg/m3)	Average Concentration (µg/m3)	Average Concentration (µg/m3)	Average Concentration (µg/m3)
1	595398.74	4130461.17	0.3832	0.1436	0.0307	0.115	0.043	0.009
2	595393.13	4130479.38	0.4411	0.1756	0.0358	0.132	0.053	0.011
3	595403.24	4130461.38	0.3851	0.1433	0.0309	0.116	0.043	0.009
4	595409.24	4130461.38	0.3866	0.1424	0.0312	0.116	0.043	0.009
5	595415.24	4130461.38	0.3881	0.1415	0.0314	0.116	0.042	0.009
6	595421.24	4130461.38	0.3894	0.1404	0.0317	0.117	0.042	0.010
7	595427.24	4130461.38	0.3907	0.1394	0.0319	0.117	0.042	0.010
8	595433.24	4130461.38	0.3918	0.1383	0.0321	0.118	0.041	0.010
9	595397.24	4130467.38	0.4020	0.1538	0.0323	0.121	0.046	0.010
10	595403.24	4130467.38	0.4035	0.1528	0.0326	0.121	0.046	0.010
11	595409.24	4130467.38	0.4049	0.1517	0.0328	0.121	0.046	0.010
12	595415.24	4130467.38	0.4062	0.1505	0.0331	0.122	0.045	0.010
13	595421.24	4130467.38	0.4074	0.1493	0.0333	0.122	0.045	0.010
14	595427.24	4130467.38	0.4085	0.1480	0.0335	0.123	0.044	0.010
15	595433.24	4130467.38	0.4096	0.1466	0.0337	0.123	0.044	0.010
16	595397.24	4130473.38	0.4215	0.1641	0.0341	0.126	0.049	0.010
17	595403.24	4130473.38	0.4229	0.1628	0.0343	0.127	0.049	0.010
18	595409.24	4130473.38	0.4241	0.1614	0.0346	0.127	0.048	0.010
19	595415.24	4130473.38	0.4253	0.1599	0.0348	0.128	0.048	0.010
20	595421.24	4130473.38	0.4263	0.1584	0.0350	0.128	0.048	0.011
21	595427.24	4130473.38	0.4273	0.1568	0.0352	0.128	0.047	0.011
22	595433.24	4130473.38	0.4282	0.1551	0.0354	0.128	0.047	0.011
23	595397.24	4130479.38	0.4420	0.1745	0.0360	0.133	0.052	0.011
24	595403.24	4130479.38	0.4432	0.1729	0.0362	0.133	0.052	0.011
25	595409.24	4130479.38	0.4443	0.1712	0.0364	0.133	0.051	0.011
26	595415.24	4130479.38	0.4453	0.1693	0.0367	0.134	0.051	0.011
27	595421.24	4130479.38	0.4462	0.1674	0.0369	0.134	0.050	0.011
28	595427.24	4130479.38	0.4470	0.1655	0.0371	0.134	0.050	0.011
29	595433.24	4130479.38	0.4478	0.1635	0.0373	0.134	0.049	0.011
30	595391.24	4130485.38	0.4623	0.1862	0.0377	0.139	0.056	0.011
31	595397.24	4130485.38	0.4635	0.1843	0.0380	0.139	0.055	0.011
32	595403.24	4130485.38	0.4645	0.1823	0.0382	0.139	0.055	0.011
33	595409.24	4130485.38	0.4654	0.1801	0.0384	0.140	0.054	0.012
34	595415.24	4130485.38	0.4663	0.1779	0.0386	0.140	0.053	0.012
35	595421.24	4130485.38	0.4671	0.1756	0.0388	0.140	0.053	0.012
36	595427.24	4130485.38	0.4678	0.1732	0.0390	0.140	0.052	0.012
37	595433.24	4130485.38	0.4684	0.1709	0.0392	0.141	0.051	0.012
38	595391.24	4130491.38	0.4850	0.1943	0.0398	0.145	0.058	0.012
39	595397.24	4130491.38	0.4860	0.1919	0.0401	0.146	0.058	0.012
40	595403.24	4130491.38	0.4868	0.1894	0.0403	0.146	0.057	0.012
41	595409.24	4130491.38	0.4876	0.1868	0.0405	0.146	0.056	0.012
42	595415.24	4130491.38	0.48835	0.18416	0.04068	0.147	0.055	0.012
43	595421.24	4130491.38	0.4890	0.1815	0.0409	0.147	0.054	0.012
44	595427.24	4130491.38	0.4896	0.1788	0.0410	0.147	0.054	0.012
45	595433.24	4130491.38	0.4901	0.1761	0.0412	0.147	0.053	0.012
46	595391.24	4130497.38	0.5087	0.1976	0.0421	0.153	0.059	0.013
47	595397.24	4130497.38	0.5095	0.1948	0.0423	0.153	0.058	0.013
48	595403.24	4130497.38	0.5102	0.1919	0.0425	0.153	0.058	0.013
49	595409.24	4130497.38	0.5109	0.1890	0.0427	0.153	0.057	0.013
50	595415.24	4130497.38	0.5115	0.1860	0.0429	0.153	0.056	0.013
51	595421.24	4130497.38	0.5120	0.1830	0.0430	0.154	0.055	0.013
52	595427.24	4130497.38	0.5124	0.1801	0.0432	0.154	0.054	0.013
53	595433.24	4130497.38	0.5128	0.1773	0.0434	0.154	0.053	0.013
		Max	**0.5128**	**0.1976**	**0.0434**	**0.15**	**0.06**	**0.01**

1710 Moorpark Avenue, San Jose, CA
Total PM2.5 Concentrations
3rd Floor receptors - 8.7 meter receptor heights
2023

80% for 21 of 24 hours

MERV-13 at 70.0% Ave Control
PM Control Factor = 0.3

			PM2.5 Concentrations (μg/m³)			MERV-13 Filtration - PM2.5 Concentrations (μg/m3)		
			I-280	Moorpark Ave	Parkmoor Ave	I-280	Moorpark Ave	Parkmoor Ave
Receptor No.	UTM-X	UTM-Y	Average Concentration (μg/m3)	Average Concentration (μg/m3)	Average Concentration (μg/m3)	Average Concentration (μg/m3)	Average Concentration (μg/m3)	Average Concentration (μg/m3)
1	595398.74	4130461.17	0.2691	0.0887	0.0238	0.081	0.027	0.007
2	595393.13	4130479.38	0.2991	0.0937	0.0272	0.090	0.028	0.008
3	595403.24	4130461.38	0.2705	0.0886	0.0241	0.081	0.027	0.007
4	595409.24	4130461.38	0.2719	0.0883	0.0243	0.082	0.026	0.007
5	595415.24	4130461.38	0.2731	0.0880	0.0245	0.082	0.026	0.007
6	595421.24	4130461.38	0.2743	0.0876	0.0247	0.082	0.026	0.007
7	595427.24	4130461.38	0.2754	0.0871	0.0249	0.083	0.026	0.007
8	595433.24	4130461.38	0.2764	0.0866	0.0251	0.083	0.026	0.008
9	595397.24	4130467.38	0.2794	0.0912	0.0249	0.084	0.027	0.007
10	595403.24	4130467.38	0.2807	0.0909	0.0252	0.084	0.027	0.008
11	595409.24	4130467.38	0.2819	0.0905	0.0254	0.085	0.027	0.008
12	595415.24	4130467.38	0.2830	0.0901	0.0256	0.085	0.027	0.008
13	595421.24	4130467.38	0.2841	0.0896	0.0258	0.085	0.027	0.008
14	595427.24	4130467.38	0.2851	0.0891	0.0260	0.086	0.027	0.008
15	595433.24	4130467.38	0.2861	0.0886	0.0262	0.086	0.027	0.008
16	595397.24	4130473.38	0.2896	0.0929	0.0261	0.087	0.028	0.008
17	595403.24	4130473.38	0.2908	0.0925	0.0264	0.087	0.028	0.008
18	595409.24	4130473.38	0.2920	0.0920	0.0266	0.088	0.028	0.008
19	595415.24	4130473.38	0.2930	0.0916	0.0268	0.088	0.027	0.008
20	595421.24	4130473.38	0.2940	0.0910	0.0270	0.088	0.027	0.008
21	595427.24	4130473.38	0.2949	0.0904	0.0272	0.088	0.027	0.008
22	595433.24	4130473.38	0.2958	0.0898	0.0273	0.089	0.027	0.008
23	595397.24	4130479.38	0.2999	0.0934	0.0274	0.090	0.028	0.008
24	595403.24	4130479.38	0.3009	0.0930	0.0276	0.090	0.028	0.008
25	595409.24	4130479.38	0.3020	0.0925	0.0278	0.091	0.028	0.008
26	595415.24	4130479.38	0.3029	0.0920	0.0280	0.091	0.028	0.008
27	595421.24	4130479.38	0.3038	0.0914	0.0282	0.091	0.027	0.008
28	595427.24	4130479.38	0.3047	0.0908	0.0283	0.091	0.027	0.008
29	595433.24	4130479.38	0.3055	0.0901	0.0285	0.092	0.027	0.009
30	595391.24	4130485.38	0.3088	0.0928	0.0284	0.093	0.028	0.009
31	595397.24	4130485.38	0.3099	0.0924	0.0286	0.093	0.028	0.009
32	595403.24	4130485.38	0.3109	0.0920	0.0288	0.093	0.028	0.009
33	595409.24	4130485.38	0.3118	0.0915	0.0290	0.094	0.027	0.009
34	595415.24	4130485.38	0.3127	0.0909	0.0292	0.094	0.027	0.009
35	595421.24	4130485.38	0.3135	0.0903	0.0294	0.094	0.027	0.009
36	595427.24	4130485.38	0.3143	0.0896	0.0296	0.094	0.027	0.009
37	595433.24	4130485.38	0.3150	0.0889	0.0297	0.095	0.027	0.009
38	595391.24	4130491.38	0.3186	0.0899	0.0298	0.096	0.027	0.009
39	595397.24	4130491.38	0.3195	0.0895	0.0300	0.096	0.027	0.009
40	595403.24	4130491.38	0.3205	0.0890	0.0302	0.096	0.027	0.009
41	595409.24	4130491.38	0.3213	0.0885	0.0303	0.096	0.027	0.009
42	595415.24	4130491.38	0.32211	0.08794	0.03051	0.097	0.026	0.009
43	595421.24	4130491.38	0.3229	0.0873	0.0307	0.097	0.026	0.009
44	595427.24	4130491.38	0.3236	0.0867	0.0308	0.097	0.026	0.009
45	595433.24	4130491.38	0.3242	0.0860	0.0310	0.097	0.026	0.009
46	595391.24	4130497.38	0.3276	0.0846	0.0311	0.098	0.025	0.009
47	595397.24	4130497.38	0.3286	0.0842	0.0313	0.099	0.025	0.009
48	595403.24	4130497.38	0.3294	0.0838	0.0315	0.099	0.025	0.009
49	595409.24	4130497.38	0.3302	0.0833	0.0317	0.099	0.025	0.010
50	595415.24	4130497.38	0.3309	0.0828	0.0318	0.099	0.025	0.010
51	595421.24	4130497.38	0.3316	0.0823	0.0320	0.099	0.025	0.010
52	595427.24	4130497.38	0.3322	0.0817	0.0321	0.100	0.025	0.010
53	595433.24	4130497.38	0.3328	0.0811	0.0323	0.100	0.024	0.010
		Max	**0.3328**	**0.0937**	**0.0323**	**0.10**	**0.03**	**0.01**

1710 Moorpark Avenue, San Jose, CA
Total PM2.5 Concentrations
4th Floor receptors - 11.7 meter receptor heights
2023

			PM2.5 Concentrations (µg/m³)		
			I-280	Moorpark Ave	Parkmoor Ave
Receptor No.	UTM-X	UTM-Y	Average Concentration (µg/m3)	Average Concentration (µg/m3)	Average Concentration (µg/m3)
1	595398.74	4130461.17	0.1973	0.0573	0.0179
2	595393.13	4130479.38	0.2149	0.0560	0.0201
3	595403.24	4130461.38	0.1983	0.0572	0.0180
4	595409.24	4130461.38	0.1994	0.0572	0.0182
5	595415.24	4130461.38	0.2004	0.0571	0.0184
6	595421.24	4130461.38	0.2014	0.0570	0.0186
7	595427.24	4130461.38	0.2023	0.0569	0.0188
8	595433.24	4130461.38	0.2032	0.0567	0.0189
9	595397.24	4130467.38	0.2036	0.0575	0.0186
10	595403.24	4130467.38	0.2046	0.0575	0.0188
11	595409.24	4130467.38	0.2056	0.0574	0.0190
12	595415.24	4130467.38	0.2066	0.0573	0.0192
13	595421.24	4130467.38	0.2075	0.0572	0.0193
14	595427.24	4130467.38	0.2083	0.0570	0.0195
15	595433.24	4130467.38	0.2091	0.0568	0.0197
16	595397.24	4130473.38	0.2097	0.0571	0.0194
17	595403.24	4130473.38	0.2107	0.0571	0.0196
18	595409.24	4130473.38	0.2116	0.0570	0.0198
19	595415.24	4130473.38	0.2125	0.0569	0.0199
20	595421.24	4130473.38	0.2133	0.0567	0.0201
21	595427.24	4130473.38	0.2141	0.0566	0.0202
22	595433.24	4130473.38	0.2148	0.0564	0.0204
23	595397.24	4130479.38	0.2155	0.0560	0.0202
24	595403.24	4130479.38	0.2164	0.0559	0.0204
25	595409.24	4130479.38	0.2173	0.0558	0.0205
26	595415.24	4130479.38	0.2181	0.0557	0.0207
27	595421.24	4130479.38	0.2189	0.0556	0.0209
28	595427.24	4130479.38	0.2196	0.0554	0.0210
29	595433.24	4130479.38	0.2202	0.0552	0.0212
30	595391.24	4130485.38	0.2200	0.0540	0.0208
31	595397.24	4130485.38	0.2208	0.0539	0.0210
32	595403.24	4130485.38	0.2217	0.0539	0.0212
33	595409.24	4130485.38	0.2225	0.0538	0.0214
34	595415.24	4130485.38	0.2232	0.0537	0.0215
35	595421.24	4130485.38	0.2239	0.0535	0.0217
36	595427.24	4130485.38	0.2246	0.0534	0.0218
37	595433.24	4130485.38	0.2252	0.0532	0.0219
38	595391.24	4130491.38	0.2246	0.0510	0.0217
39	595397.24	4130491.38	0.2255	0.0509	0.0219
40	595403.24	4130491.38	0.2262	0.0509	0.0220
41	595409.24	4130491.38	0.2270	0.0508	0.0222
42	595415.24	4130491.38	0.22767	0.05074	0.02231
43	595421.24	4130491.38	0.2283	0.0506	0.0225
44	595427.24	4130491.38	0.2290	0.0505	0.0226
45	595433.24	4130491.38	0.2295	0.0503	0.0227
46	595391.24	4130497.38	0.2283	0.0471	0.0226
47	595397.24	4130497.38	0.2291	0.0471	0.0227
48	595403.24	4130497.38	0.2298	0.0471	0.0229
49	595409.24	4130497.38	0.2305	0.0470	0.0230
50	595415.24	4130497.38	0.2312	0.0469	0.0231
51	595421.24	4130497.38	0.2318	0.0469	0.0233
52	595427.24	4130497.38	0.2324	0.0467	0.0234
53	595433.24	4130497.38	0.2330	0.0466	0.0235
		Max	**0.2330**	**0.0575**	**0.0235**

CT-EMFAC2017 Emissions Factors for Moorpark Avenue and Parkmoor Avenue Traffic

```
           File Name:   Santa Clara (SF) - 2023 - Annual.EF
CT-EMFAC2017 Version:   1.0.2.27401
            Run Date:   6/13/2020 12:36:17 AM
                Area:   Santa Clara (SF)
       Analysis Year:   2023
              Season:   Annual

=========================================================================

Vehicle Category        VMT Fraction            Diesel VMT Fraction     Gas VMT Fraction
                        Across Category         Within Category         Within Category
         Truck 1            0.026                   0.487                   0.513
         Truck 2            0.036                   0.938                   0.047
       Non-Truck            0.938                   0.014                   0.958

=========================================================================

              Road Type:        Major/Collector
    Silt Loading Factor:                   CARB         0.032 g/m2
Precipitation Correction:                  CARB         P = 64 days     N = 365 days

=========================================================================

Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

       Pollutant Name      10 mph     15 mph     20 mph     25 mph     30 mph     35 mph
                PM2.5    0.006198   0.004236   0.003051   0.002336   0.001907   0.001664
                  TOG    0.131848   0.088154   0.062068   0.046876   0.037363   0.031255
            Diesel PM    0.001078   0.000832   0.000664   0.000572   0.000533   0.000535
                 DEOG    0.012961   0.007006   0.003698   0.002634   0.002107   0.001752

=========================================================================

Fleet Average Running Loss Emission Factors (grams/veh-hour)

       Pollutant Name   Emission Factor
                  TOG          1.369896

=========================================================================

Fleet Average Tire Wear Factors (grams/veh-mile)

       Pollutant Name   Emission Factor
                PM2.5          0.002188

=========================================================================

Fleet Average Brake Wear Factors (grams/veh-mile)

       Pollutant Name   Emission Factor
                PM2.5          0.017348

=========================================================================

Fleet Average Road Dust Factors (grams/veh-mile)

       Pollutant Name   Emission Factor
                PM2.5          0.016823

=============================END=========================================
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Moorpark Avenue Traffic Emissions and Health Risk Calculations – Project Operation

1710 Moorpark Ave - Traffic -Roadway Emissions
Moorpark Avenue
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
MOOR_DPM	Moorpark Ave - One Way	E	3	680.7	0.42	17.0	55.7	3.4	30	21,470

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.00053			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and DPM Emissions - MOOR_DPM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	840	5.26E-05	9	6.50%	1395	8.74E-05	17	5.58%	1198	7.50E-05
2	2.59%	556	3.48E-05	10	7.36%	1580	9.90E-05	18	3.28%	704	4.41E-05
3	2.88%	617	3.87E-05	11	6.33%	1358	8.50E-05	19	2.36%	506	3.17E-05
4	3.34%	716	4.48E-05	12	6.84%	1469	9.20E-05	20	0.92%	198	1.24E-05
5	2.19%	469	2.94E-05	13	6.15%	1321	8.27E-05	21	2.99%	642	4.02E-05
6	3.39%	728	4.56E-05	14	6.15%	1321	8.27E-05	22	4.14%	889	5.57E-05
7	5.98%	1284	8.04E-05	15	5.23%	1124	7.04E-05	23	2.47%	531	3.32E-05
8	4.66%	1000	6.26E-05	16	3.91%	840	5.26E-05	24	0.86%	185	1.16E-05
								Total		21,470	

Analysis Year = *2023*

Vehicle Type	2015 Caltrans Vehicles (veh/day)	2023 Vehicles (veh/day)
All	**19,880**	**21,470**

Increase From 2015 1.08

Traffic Data Year = *2015*

Santa Clara County 2017 Road Book	AADT Total
Moorpark Ave between 0007E LELAND/SO BASCOM	19,880

Traffic Increase per Year (%) = *1.00%*

1710 Moorpark Ave - Traffic -Roadway Emissions
Moorpark Avenue
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
MOOR_PM25	Moorpark Ave - One Way	E	3	680.7	0.42	17.0	56	1.3	30	21,470
									Total	21,470

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.001907			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and PM2.5 Emissions - MOOR_PM25

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	247	5.54E-05	9	7.11%	1527	3.42E-04	17	7.38%	1585	3.55E-04
2	0.42%	90	2.01E-05	10	4.39%	943	2.11E-04	18	8.17%	1755	3.93E-04
3	0.41%	88	1.96E-05	11	4.66%	1001	2.24E-04	19	5.70%	1223	2.74E-04
4	0.26%	57	1.27E-05	12	5.89%	1264	2.83E-04	20	4.27%	918	2.06E-04
5	0.50%	107	2.41E-05	13	6.15%	1321	2.96E-04	21	3.26%	700	1.57E-04
6	0.90%	194	4.35E-05	14	6.04%	1296	2.90E-04	22	3.30%	708	1.59E-04
7	3.79%	814	1.82E-04	15	7.01%	1506	3.37E-04	23	2.46%	528	1.18E-04
8	7.76%	1667	3.73E-04	16	7.14%	1532	3.43E-04	24	1.86%	400	8.97E-05
								Total		21,470	

1710 Moorpark Ave - Traffic -Roadway Emissions
Moorpark Avenue
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
MOOR_TEXH	Moorpark Ave - One Way	E	3	680.7	0.42	17.0	56	1.3	30	21,470
									Total	21,470

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	30			
All Vehicles TOG Emissions per Vehicle (g/VMT)	0.037363			
Diesel Vehicles TOG Emissions per Vehicle (g/VMT)	0.002107			
Gasoline Vehicles Emissions per Vehicle (g/VMT)	0.03526			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Exhaust Emissions - MOOR_TEXH

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	247	1.02E-03	9	7.11%	1527	6.32E-03	17	7.38%	1585	6.57E-03
2	0.42%	90	3.71E-04	10	4.39%	943	3.91E-03	18	8.17%	1755	7.27E-03
3	0.41%	88	3.63E-04	11	4.66%	1001	4.15E-03	19	5.70%	1223	5.07E-03
4	0.26%	57	2.34E-04	12	5.89%	1264	5.24E-03	20	4.27%	918	3.80E-03
5	0.50%	107	4.45E-04	13	6.15%	1321	5.47E-03	21	3.26%	700	2.90E-03
6	0.90%	194	8.04E-04	14	6.04%	1296	5.37E-03	22	3.30%	708	2.93E-03
7	3.79%	814	3.37E-03	15	7.01%	1506	6.24E-03	23	2.46%	528	2.19E-03
8	7.76%	1667	6.90E-03	16	7.14%	1532	6.35E-03	24	1.86%	400	1.66E-03
								Total		21,470	

1710 Moorpark Ave - Traffic -Roadway Emissions
Moorpark Avenue
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
MOOR_TEVAP	Moorpark Ave - One Way	E	3	680.7	0.42	17.0	56	1.3	30	21,470
									Total	21,470

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle per Hour (g/hour)	1.36990			
Emissions per Vehicle per Mile (g/VMT)	0.04566			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Evaporative Emissions - MOOR_TEVAP

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	247	1.33E-03	9	7.11%	1527	8.19E-03	17	7.38%	1585	8.51E-03
2	0.42%	90	4.81E-04	10	4.39%	943	5.06E-03	18	8.17%	1755	9.41E-03
3	0.41%	88	4.70E-04	11	4.66%	1001	5.37E-03	19	5.70%	1223	6.56E-03
4	0.26%	57	3.03E-04	12	5.89%	1264	6.78E-03	20	4.27%	918	4.92E-03
5	0.50%	107	5.77E-04	13	6.15%	1321	7.09E-03	21	3.26%	700	3.75E-03
6	0.90%	194	1.04E-03	14	6.04%	1296	6.95E-03	22	3.30%	708	3.80E-03
7	3.79%	814	4.37E-03	15	7.01%	1506	8.08E-03	23	2.46%	528	2.83E-03
8	7.76%	1667	8.94E-03	16	7.14%	1532	8.22E-03	24	1.86%	400	2.15E-03
								Total		21,470	

1710 Moorpark Ave - Traffic -Roadway Emissions
Moorpark Avenue
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
MOOR_FUG	Moorpark Ave - One Way	E	3	680.7	0.42	17.0	56	1.3	30	21,470
									Total	21,470

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00219			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01735			
Road Dust - Emissions per Vehicle (g/VMT)	0.01682			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03636			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - MOOR_FUG

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	247	1.06E-03	9	7.11%	1527	6.52E-03	17	7.38%	1585	6.77E-03
2	0.42%	90	3.83E-04	10	4.39%	943	4.03E-03	18	8.17%	1755	7.50E-03
3	0.41%	88	3.74E-04	11	4.66%	1001	4.28E-03	19	5.70%	1223	5.22E-03
4	0.26%	57	2.41E-04	12	5.89%	1264	5.40E-03	20	4.27%	918	3.92E-03
5	0.50%	107	4.59E-04	13	6.15%	1321	5.64E-03	21	3.26%	700	2.99E-03
6	0.90%	194	8.29E-04	14	6.04%	1296	5.54E-03	22	3.30%	708	3.03E-03
7	3.79%	814	3.48E-03	15	7.01%	1506	6.43E-03	23	2.46%	528	2.26E-03
8	7.76%	1667	7.12E-03	16	7.14%	1532	6.54E-03	24	1.86%	400	1.71E-03
								Total		21,470	

1710 Moorpark Avenue, San Jose, CA - Moorpark Ave. Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 2nd Floor Residential Receptors (5.3 meter receptor heights)

Emissions Year	2023
Receptor Information	
Number of Receptors	53
Receptor Height =	2nd Floor - 5.3 meters above ground level
Receptor distances =	5 meter (16 feet) grid spacing in project residential areas
Meteorological Conditions	
BAAQMD San Jose Airport Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Emission Years	Concentration (μg/m³)		
	DPM	Exhaust TOG	Evaporative TOG
2023	0.00335	0.1915	0.2478

Emission Years	PM2.5 Concentrations (μg/m³)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2022	0.198	0.1877	0.0098

1710 Moorpark Avenue, San Jose, CA - Moorpark Ave. Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 3rd Floor Residential Receptors (8.7 meter receptor heights)

Emissions Year	2023
Receptor Information	
Number of Receptors	53
Receptor Height =	3rd Floor - 8.7 meters above ground level
Receptor distances =	5 meter (16 feet) grid spacing in project residential areas
Meteorological Conditions	
BAAQMD San Jose Airport Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Emission Years	Concentration (μg/m³)		
	DPM	Exhaust TOG	Evaporative TOG
2023	0.00185	0.0813	0.1052

Emission Years	PM2.5 Concentrations (μg/m³)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2022	0.094	0.0890	0.0047

1710 Moorpark Avenue, San Jose, CA - Moorpark Ave. Traffic Maximum Cancer Risks
On-Site 2nd Floor Residential Receptors (5.3 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
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 ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information							
		Exposure		Age	Annual TAC Conc (ug/m3)			Cancer Risk (per million)			
Exposure		Duration		Sensitivity		Exhaust	Evaporative		Exhaust	Evaporative	
Year	Year	(years)	Age	Factor	DPM	TOG	TOG	DPM	TOG	TOG	Total
0	2023	0.25	-0.25 - 0*	10	0.0034	0.1915	0.2478	0.046	0.015	0.001	0.06
1	2023	1	1	10	0.0034	0.1915	0.2478	0.55	0.180	0.014	0.74
2	2024	1	2	10	0.0034	0.1915	0.2478	0.55	0.180	0.014	0.74
3	2025	1	3	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
4	2026	1	4	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
5	2027	1	5	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
6	2028	1	6	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
7	2029	1	7	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
8	2030	1	8	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
9	2031	1	9	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
10	2032	1	10	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
11	2033	1	11	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
12	2034	1	12	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
13	2035	1	13	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
14	2036	1	14	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
15	2037	1	15	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
16	2038	1	16	3	0.0034	0.1915	0.2478	0.09	0.028	0.002	0.12
17	2039	1	17	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
18	2040	1	18	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
19	2041	1	19	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
20	2042	1	20	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
21	2043	1	21	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
22	2044	1	22	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
23	2045	1	23	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
24	2046	1	24	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
25	2047	1	25	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
26	2048	1	26	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
27	2049	1	27	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
28	2050	1	28	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
29	2051	1	29	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
30	2052	1	30	1	0.0034	0.1915	0.2478	0.01	0.003	0.000	0.013
Total Increased Cancer Risk			**Total**					2.49	0.814	0.062	**3.37**

* Third trimester of pregnancy

1710 Moorpark Avenue, San Jose, CA - Moorpark Ave. Traffic Maximum Cancer Risks
On-Site 3rd Floor Residential Receptors (8.7 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
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 ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information							
		Exposure		Age	Annual TAC Conc (ug/m3)			Cancer Risk (per million)			
Exposure		Duration		Sensitivity		Exhaust	Evaporative		Exhaust	Evaporative	
Year	Year	(years)	Age	Factor	DPM	TOG	TOG	DPM	TOG	TOG	Total
0	2023	0.25	-0.25 - 0*	10	0.0019	0.0813	0.1052	0.025	0.006	0.000	0.03
1	2023	1	1	10	0.0019	0.0813	0.1052	0.30	0.076	0.006	0.39
2	2024	1	2	10	0.0019	0.0813	0.1052	0.30	0.076	0.006	0.39
3	2025	1	3	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
4	2026	1	4	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
5	2027	1	5	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
6	2028	1	6	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
7	2029	1	7	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
8	2030	1	8	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
9	2031	1	9	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
10	2032	1	10	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
11	2033	1	11	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
12	2034	1	12	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
13	2035	1	13	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
14	2036	1	14	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
15	2037	1	15	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
16	2038	1	16	3	0.0019	0.0813	0.1052	0.05	0.012	0.001	0.06
17	2039	1	17	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
18	2040	1	18	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
19	2041	1	19	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
20	2042	1	20	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
21	2043	1	21	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
22	2044	1	22	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
23	2045	1	23	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
24	2046	1	24	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
25	2047	1	25	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
26	2048	1	26	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
27	2049	1	27	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
28	2050	1	28	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
29	2051	1	29	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
30	2052	1	30	1	0.0019	0.0813	0.1052	0.01	0.001	0.000	0.007
Total Increased Cancer Risk			**Total**					1.38	0.346	0.026	**1.75**

* Third trimester of pregnancy

<u>Parkmoor Avenue Traffic Emissions and Health Risk Calculations – Project Operation</u>

1710 Moorpark Ave - Traffic -Roadway Emissions
Parkmoor Avenue
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
PARK_DPM	Parkmoor Ave - One Way	W	2	668.5	0.42	13.3	43.7	3.4	30	11,610

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.00053			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and DPM Emissions - PARK_DPM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	454	2.79E-05	9	6.50%	754	4.64E-05	17	5.58%	648	3.98E-05
2	2.59%	300	1.85E-05	10	7.36%	855	5.26E-05	18	3.28%	381	2.34E-05
3	2.88%	334	2.05E-05	11	6.33%	734	4.52E-05	19	2.36%	274	1.68E-05
4	3.34%	387	2.38E-05	12	6.84%	794	4.89E-05	20	0.92%	107	6.57E-06
5	2.19%	254	1.56E-05	13	6.15%	714	4.39E-05	21	2.99%	347	2.14E-05
6	3.39%	394	2.42E-05	14	6.15%	714	4.39E-05	22	4.14%	481	2.96E-05
7	5.98%	694	4.27E-05	15	5.23%	608	3.74E-05	23	2.47%	287	1.77E-05
8	4.66%	541	3.33E-05	16	3.91%	454	2.79E-05	24	0.86%	100	6.16E-06
								Total		11,610	

Analysis Year = ***2023***

Vehicle Type	2015 Caltrans Vehicles (veh/day)	2023 Vehicles (veh/day)
All	**10,750**	**11,610**

Increase From 2015 1.08

Traffic Data Year = ***2015***

Santa Clara County 2017 Road Book	AADT Total
Parkmoor Ave between BASCOM/0038E	10,750

Traffic Increase per Year (%) = *1.00%*

1710 Moorpark Ave - Traffic -Roadway Emissions
Parkmoor Avenue
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
PARK_PM25	Parkmoor Ave - One Way	W	2	668.5	0.42	13.3	44	1.3	30	11,610
									Total	11,610

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.001907			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and PM2.5 Emissions - PARK_PM25

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	134	2.94E-05	9	7.11%	826	1.82E-04	17	7.38%	857	1.89E-04
2	0.42%	48	1.07E-05	10	4.39%	510	1.12E-04	18	8.17%	949	2.09E-04
3	0.41%	47	1.04E-05	11	4.66%	541	1.19E-04	19	5.70%	661	1.46E-04
4	0.26%	31	6.72E-06	12	5.89%	684	1.50E-04	20	4.27%	496	1.09E-04
5	0.50%	58	1.28E-05	13	6.15%	714	1.57E-04	21	3.26%	378	8.33E-05
6	0.90%	105	2.31E-05	14	6.04%	701	1.54E-04	22	3.30%	383	8.43E-05
7	3.79%	440	9.69E-05	15	7.01%	814	1.79E-04	23	2.46%	286	6.28E-05
8	7.76%	901	1.98E-04	16	7.14%	828	1.82E-04	24	1.86%	216	4.76E-05
								Total		11,610	

1710 Moorpark Ave - Traffic -Roadway Emissions
Parkmoor Avenue
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
PARK_TEXH	Parkmoor Ave - One Way	W	2	668.5	0.42	13.3	44	1.3	30	11,610
									Total	11,610

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	30			
All Vehicles TOG Emissions per Vehicle (g/VMT)	0.037363			
Diesel Vehicles TOG Emissions per Vehicle (g/VMT)	0.002107			
Gasoline Vehicles Emissions per Vehicle (g/VMT)	0.03526			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Exhaust Emissions - PARK_TEXH

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	134	5.44E-04	9	7.11%	826	3.36E-03	17	7.38%	857	3.49E-03
2	0.42%	48	1.97E-04	10	4.39%	510	2.07E-03	18	8.17%	949	3.86E-03
3	0.41%	47	1.93E-04	11	4.66%	541	2.20E-03	19	5.70%	661	2.69E-03
4	0.26%	31	1.24E-04	12	5.89%	684	2.78E-03	20	4.27%	496	2.02E-03
5	0.50%	58	2.36E-04	13	6.15%	714	2.91E-03	21	3.26%	378	1.54E-03
6	0.90%	105	4.27E-04	14	6.04%	701	2.85E-03	22	3.30%	383	1.56E-03
7	3.79%	440	1.79E-03	15	7.01%	814	3.31E-03	23	2.46%	286	1.16E-03
8	7.76%	901	3.67E-03	16	7.14%	828	3.37E-03	24	1.86%	216	8.80E-04
								Total		11,610	

1710 Moorpark Ave - Traffic -Roadway Emissions
Parkmoor Avenue
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
PARK_TEVAP	Parkmoor Ave - One Way	W	2	668.5	0.42	13.3	44	1.3	30	11,610
									Total	11,610

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle per Hour (g/hour)	1.36990			
Emissions per Vehicle per Mile (g/VMT)	0.04566			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Evaporative Emissions - PARK_TEVAP

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	134	7.04E-04	9	7.11%	826	4.35E-03	17	7.38%	857	4.52E-03
2	0.42%	48	2.55E-04	10	4.39%	510	2.69E-03	18	8.17%	949	5.00E-03
3	0.41%	47	2.49E-04	11	4.66%	541	2.85E-03	19	5.70%	661	3.48E-03
4	0.26%	31	1.61E-04	12	5.89%	684	3.60E-03	20	4.27%	496	2.61E-03
5	0.50%	58	3.06E-04	13	6.15%	714	3.76E-03	21	3.26%	378	1.99E-03
6	0.90%	105	5.53E-04	14	6.04%	701	3.69E-03	22	3.30%	383	2.02E-03
7	3.79%	440	2.32E-03	15	7.01%	814	4.29E-03	23	2.46%	286	1.50E-03
8	7.76%	901	4.75E-03	16	7.14%	828	4.36E-03	24	1.86%	216	1.14E-03
								Total		11,610	

1710 Moorpark Ave - Traffic -Roadway Emissions
Parkmoor Avenue
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link[a] Width (m)	Link Width (ft)	Release[a] Height (m)	Average Speed (mph)	Average Vehicles per Day
PARK_FUG	Parkmoor Ave - One Way	W	2	668.5	0.42	13.3	44	1.3	30	11,610
									Total	11,610

[a] EPA 2015 - Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, Appendix J

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00219			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01735			
Road Dust - Emissions per Vehicle (g/VMT)	0.01682			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03636			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - PARK_FUG

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	134	5.61E-04	9	7.11%	826	3.46E-03	17	7.38%	857	3.60E-03
2	0.42%	48	2.03E-04	10	4.39%	510	2.14E-03	18	8.17%	949	3.98E-03
3	0.41%	47	1.99E-04	11	4.66%	541	2.27E-03	19	5.70%	661	2.77E-03
4	0.26%	31	1.28E-04	12	5.89%	684	2.87E-03	20	4.27%	496	2.08E-03
5	0.50%	58	2.44E-04	13	6.15%	714	3.00E-03	21	3.26%	378	1.59E-03
6	0.90%	105	4.40E-04	14	6.04%	701	2.94E-03	22	3.30%	383	1.61E-03
7	3.79%	440	1.85E-03	15	7.01%	814	3.42E-03	23	2.46%	286	1.20E-03
8	7.76%	901	3.78E-03	16	7.14%	828	3.48E-03	24	1.86%	216	9.08E-04
								Total		11,610	

1710 Moorpark Avenue, San Jose, CA - Parkmoor Ave. Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 2nd Floor Residential Receptors (5.3 meter receptor heights)

Emissions Year	2023
Receptor Information	
Number of Receptors	53
Receptor Height =	2nd Floor - 5.3 meters above ground level
Receptor distances =	5 meter (16 feet) grid spacing in project residential areas

Meteorological Conditions	
BAAQMD San Jose Airport Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Emission	Concentration (µg/m³)		
Years	DPM	Exhaust TOG	Evaporative TOG
2023	0.00056	0.0400	0.0518

Emission	PM2.5 Concentrations (µg/m³)		
Years	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2022	0.043	0.0412	0.0022

1710 Moorpark Avenue, San Jose, CA - Parkmoor Ave. Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 3rd Floor Residential Receptors (8.7 meter receptor heights)

Emissions Year	2023
Receptor Information	
Number of Receptors	53
Receptor Height =	3rd Floor - 8.7 meters above ground level
Receptor distances =	5 meter (16 feet) grid spacing in project residential areas

Meteorological Conditions	
BAAQMD San Jose Airport Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Emission	Concentration (µg/m³)		
Years	DPM	Exhaust TOG	Evaporative TOG
2023	0.00044	0.0298	0.0386

Emission	PM2.5 Concentrations (µg/m³)		
Years	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2022	0.032	0.0307	0.0016

1710 Moorpark Avenue, San Jose, CA - Parkmoor Ave. Traffic Maximum Cancer Risks
On-Site 2nd Floor Residential Receptors (5.3 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
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 $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information				Cancer Risk (per million)			
		Exposure		Age	Annual TAC Conc (ug/m3)						
Exposure		Duration		Sensitivity		Exhaust	Evaporative		Exhaust	Evaporative	
Year	Year	(years)	Age	Factor	DPM	TOG	TOG	DPM	TOG	TOG	Total
0	2023	0.25	-0.25 - 0*	10	0.0006	0.0400	0.0518	0.008	0.003	0.000	0.01
1	2023	1	1	10	0.0006	0.0400	0.0518	0.09	0.038	0.003	0.13
2	2024	1	2	10	0.0006	0.0400	0.0518	0.09	0.038	0.003	0.13
3	2025	1	3	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
4	2026	1	4	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
5	2027	1	5	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
6	2028	1	6	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
7	2029	1	7	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
8	2030	1	8	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
9	2031	1	9	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
10	2032	1	10	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
11	2033	1	11	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
12	2034	1	12	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
13	2035	1	13	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
14	2036	1	14	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
15	2037	1	15	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
16	2038	1	16	3	0.0006	0.0400	0.0518	0.01	0.006	0.000	0.02
17	2039	1	17	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
18	2040	1	18	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
19	2041	1	19	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
20	2042	1	20	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
21	2043	1	21	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
22	2044	1	22	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
23	2045	1	23	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
24	2046	1	24	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
25	2047	1	25	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
26	2048	1	26	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
27	2049	1	27	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
28	2050	1	28	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
29	2051	1	29	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
30	2052	1	30	1	0.0006	0.0400	0.0518	0.00	0.001	0.000	0.002
Total Increased Cancer Risk			**Total**					0.42	0.170	0.013	**0.60**

* Third trimester of pregnancy

1710 Moorpark Avenue, San Jose, CA - Parkmoor Ave. Traffic Maximum Cancer Risks
On-Site 3rd Floor Residential Receptors (8.7 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
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 ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information				Cancer Risk (per million)			
		Exposure		Age	Annual TAC Conc (ug/m3)						
Exposure		Duration		Sensitivity		Exhaust	Evaporative		Exhaust	Evaporative	
Year	Year	(years)	Age	Factor	DPM	TOG	TOG	DPM	TOG	TOG	Total
0	2023	0.25	-0.25 - 0*	10	0.0004	0.0298	0.0386	0.006	0.002	0.000	0.01
1	2023	1	1	10	0.0004	0.0298	0.0386	0.07	0.028	0.002	0.10
2	2024	1	2	10	0.0004	0.0298	0.0386	0.07	0.028	0.002	0.10
3	2025	1	3	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
4	2026	1	4	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
5	2027	1	5	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
6	2028	1	6	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
7	2029	1	7	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
8	2030	1	8	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
9	2031	1	9	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
10	2032	1	10	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
11	2033	1	11	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
12	2034	1	12	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
13	2035	1	13	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
14	2036	1	14	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
15	2037	1	15	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
16	2038	1	16	3	0.0004	0.0298	0.0386	0.01	0.004	0.000	0.02
17	2039	1	17	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
18	2040	1	18	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
19	2041	1	19	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
20	2042	1	20	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
21	2043	1	21	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
22	2044	1	22	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
23	2045	1	23	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
24	2046	1	24	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
25	2047	1	25	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
26	2048	1	26	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
27	2049	1	27	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
28	2050	1	28	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
29	2051	1	29	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
30	2052	1	30	1	0.0004	0.0298	0.0386	0.00	0.000	0.000	0.002
Total Increased Cancer Risk			**Total**					0.33	0.127	0.010	**0.46**

* Third trimester of pregnancy

Health Risk Calculations at Construction MEI Receptor Location from Interstate 280, Moorpark Avenue, and Parkmoor Avenue

1710 Moorpark Ave, San jose, CA- Interstate 280 Traffic - TACs & PM2.5
Maximum Roadway TACs and PM2.5 Concentrations at Preschool
AERMOD Risk Modeling Parameters and Maximum Concentrations
Infant/Child Exposures (1.0 meter receptor heights)

Emissions Years	2023
Receptor Information	
Number of Receptors	1
Receptor Height =	1.0 meters
Receptor distances =	Construction MEI - Preschool receptor

Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

School MEI Maximum Concentrations

Meteorological Data	Concentration (µg/m^3)		
Years	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.00922	0.6180	0.5641

Meteorological Data	PM2.5 Concentrations (µg/m^3)		
Years	Total PM2.5	UTM-X (m)	UTM-Y (m)
2013-2017	0.24	595495.08	4130434.0

1710 Moorpark Ave, San Jose, CA-Moorpark Ave Traffic - TACs & PM2.5
Maximum Roadway TACs and PM2.5 Concentrations at Preschool
AERMOD Risk Modeling Parameters and Maximum Concentrations
Infant/Child Exposures (1.0 meter receptor heights)

Emissions Years	2023
Receptor Information	
Number of Receptors	1
Receptor Height =	1.0 meters
Receptor distances =	Construction MEI - Preschool receptor
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

School MEI Maximum Concentrations

Meteorological Data	Concentration (µg/m^3)		
Years	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.00169	0.1237	0.1600

Meteorological Data	PM2.5 Concentrations (µg/m^3)		
Years	Total PM2.5	UTM-X (m)	UTM-Y (m)
2013-2017	**0.07**	595495.08	4130434.0

1710 Moorpark Ave, San jose, CA-Parkmoor Ave Traffic - TACs & PM2.5
Maximum Roadway TACs and PM2.5 Concentrations at Preschool
AERMOD Risk Modeling Parameters and Maximum Concentrations
Infant/Child Exposures (1.0 meter receptor heights)

Emissions Years	2023
Receptor Information	
Number of Receptors	1
Receptor Height =	1.0 meters
Receptor distances =	Construction MEI - Preschool receptor
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

School MEI Maximum Concentrations

Meteorological Data	Concentration (µg/m^3)		
Years	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.00043	0.0290	0.0375

Meteorological Data	PM2.5 Concentrations (µg/m^3)		
Years	Total PM2.5	UTM-X (m)	UTM-Y (m)
2013-2017	**0.02**	595495.08	4130434.0

1710 Moorpark Ave, San jose, CA- Interstate 280 Traffic
Maximum Cancer Risk at Construction MEI - Neighborhood Christian Preschool
Infant/Child Exposures (1.0 meter receptor heights)
6-Year Child Exposure (Ages 6 weeks through 5 years old)

Cancer Risk Calculation Method

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

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C_{air} x DAF x 8-Hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DAF = Daycare Adjustment Factor (unitless) for exposures different than 8 hours/day
= (DHR/8 hrs)
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
DHR = Daycare operation hours
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant	Child
Age -->	0 - <2	2 - <16
Parameter		
ASF	10	3
8-Hr BR* =	1200	520
DHR =	12	12
A =	1	1
EF =	250	250
ED =	2	4
AT =	70	70
DAF =	1.50	1.50

* 95th percentile 8-hr breathing rates for moderate intensity activities

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Year	Exposure Duration (years)	Age	Maximum - Exposure Information: Age Sensitivity Factor	Annual TAC Conc (ug/m3): DPM	Annual TAC Conc (ug/m3): Exhaust TOG	Annual TAC Conc (ug/m3): Evaporative TOG	Cancer Risk (per million): DPM	Cancer Risk (per million): Exhaust TOG	Cancer Risk (per million): Evaporative TOG	Cancer Risk (per million): Total
1	2021	1	0 - 1	10	0.0092	0.6180	0.5641	1.786	0.684	0.037	2.51
2	2022	1	1 - 2	10	0.0092	0.6180	0.5641	1.786	0.684	0.037	2.51
3	2023	1	2 - 3	3	0.0092	0.6180	0.5641	0.232	0.089	0.005	0.33
4	2024	1	3 - 4	3	0.0092	0.6180	0.5641	0.232	0.089	0.005	0.33
5	2025	1	4 - 5	3	0.0092	0.6180	0.5641	0.232	0.089	0.005	0.33
6	2026	1	5 - 6	3	0.0092	0.6180	0.5641	0.232	0.089	0.005	0.33
Total Increased Cancer Risk								4.037	1.545	0.083	**5.7**

1710 Moorpark Ave, San Jose, CA- Moorpark Ave Traffic
Maximum Cancer Risk at Construction MEI - Neighborhood Christian Preschool
Infant/Child Exposures (1.0 meter receptor heights)
6-Year Child Exposure (Ages 6 weeks through 5 years old)

Cancer Risk Calculation Method

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

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C_{air} x DAF x 8-Hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DAF = Daycare Adjustment Factor (unitless) for exposures different than 8 hours/day = (DHR/8 hrs)
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
DHR = Daycare operation hours
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant	Child
Age -->	0 - <2	2 - <16
Parameter		
ASF	10	3
8-Hr BR* =	1200	520
DHR =	12	12
A =	1	1
EF =	250	250
ED =	2	4
AT =	70	70
DAF =	1.50	1.50

* 95th percentile 8-hr breathing rates for moderate intensity activities

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Year	Exposure Duration (years)	Age	Maximum - Exposure Information: Age Sensitivity Factor	Annual TAC Conc (ug/m3): DPM	Annual TAC Conc (ug/m3): Exhaust TOG	Annual TAC Conc (ug/m3): Evaporative TOG	Cancer Risk (per million): DPM	Cancer Risk (per million): Exhaust TOG	Cancer Risk (per million): Evaporative TOG	Total
1	2021	1	0 - 1	10	0.0017	0.1237	0.1600	0.327	0.137	0.010	0.47
2	2022	1	1 - 2	10	0.0017	0.1237	0.1600	0.327	0.137	0.010	0.47
3	2023	1	2 - 3	3	0.0017	0.1237	0.1600	0.043	0.018	0.001	0.06
4	2024	1	3 - 4	3	0.0017	0.1237	0.1600	0.043	0.018	0.001	0.06
5	2025	1	4 - 5	3	0.0017	0.1237	0.1600	0.043	0.018	0.001	0.06
6	2026	1	5 - 6	3	0.0017	0.1237	0.1600	0.043	0.018	0.001	0.06
Total Increased Cancer Risk								0.740	0.309	0.024	**1.1**

1710 Moorpark Ave, San Jose, CA- Parkmoor Ave Traffic
Maximum Cancer Risk at Construction MEI - Neighborhood Christian Preschool
Infant/Child Exposures (1.0 meter receptor heights)
6-Year Child Exposure (Ages 6 weeks through 5 years old)

Cancer Risk Calculation Method

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

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C_{air} x DAF x 8-Hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DAF = Daycare Adjustment Factor (unitless) for exposures different than 8 hours/day
= (DHR/8 hrs)
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
DHR = Daycare operation hours
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant	Child
Age -->	0 - <2	2 - <16
Parameter		
ASF	10	3
8-Hr BR* =	1200	520
DHR =	12	12
A =	1	1
EF =	250	250
ED =	2	4
AT =	70	70
DAF =	1.50	1.50

* 95th percentile 8-hr breathing rates for moderate intensity activities

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Year	Exposure Duration (years)	Age	Maximum - Exposure Information: Age Sensitivity Factor	Annual TAC Conc (ug/m3): DPM	Annual TAC Conc (ug/m3): Exhaust TOG	Annual TAC Conc (ug/m3): Evaporative TOG	Cancer Risk (per million): DPM	Cancer Risk (per million): Exhaust TOG	Cancer Risk (per million): Evaporative TOG	Cancer Risk (per million): Total
1	2021	1	0 - 1	10	0.0004	0.0290	0.0375	0.083	0.032	0.002	0.12
2	2022	1	1 - 2	10	0.0004	0.0290	0.0375	0.083	0.032	0.002	0.12
3	2023	1	2 - 3	3	0.0004	0.0290	0.0375	0.011	0.004	0.000	0.02
4	2024	1	3 - 4	3	0.0004	0.0290	0.0375	0.011	0.004	0.000	0.02
5	2025	1	4 - 5	3	0.0004	0.0290	0.0375	0.011	0.004	0.000	0.02
6	2026	1	5 - 6	3	0.0004	0.0290	0.0375	0.011	0.004	0.000	0.02
Total Increased Cancer Risk								0.188	0.072	0.006	**0.3**

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 coducting 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	**7/10/2020**
Contact Name	Casey Divine
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x103
Email	cdivine@illingworthrodkin.com
Project Name	1710 Moorpark Supportive Housing
Address	1710 Moorpark Ave
City	San Jose
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	108du
Comments:	

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

1. Complete all the contact and project information requested in . **Table A** 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 blue section only.

6. Note that a small percentage of the stationary sources h **Table B** sk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name ght). 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

Distance from Receptor (feet) or MEI[1]	Plant No.	Facility Name	Address	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments
350	16210	San Jose Fire Dept Stn#4 / Accts Payable	710 Leigh Avenue	1.32	0	0		Generators		2018 Dataset

Construction MEI

Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
0.2	0.2	0	0

Project Site

Distance from Receptor (feet) or MEI[1]	FACID (Plant No.)	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
350	16210	0.2	0.2	0	0

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 index of
    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 instead
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier 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