1 HAYWARD AVENUE AIR QUALITY & GREENHOUSE GAS ASSESSMENT

San Mateo, California

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Introduction

The purpose of this report is to address the air quality, community health risk, and greenhouse gas emission (GHG) impacts associated with the construction of the proposed mixed-use apartment development with office space located at 1 Hayward Avenue in San Mateo, California. The air quality impacts and GHG emissions from this project would be associated with the demolition of the existing uses at the site, construction of the new building and infrastructure, and operation of the project. Air pollutant and GHG emissions associated with construction and operation of the project were predicted using appropriate computer models. In addition, the potential project health risk impact (including construction and operation) and the impacts of existing toxic air contaminant (TAC) sources affecting the nearby existing and proposed sensitive receptors were evaluated. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The 0.29-acre project site is currently occupied by three buildings consisting of five dwelling units, with associated driveways, and a small office. The project proposes to demolish the existing buildings to construct a four-story mixed-use building with a below-grade parking garage containing 22 parking spaces. The ground floor would consist of 4,650 square feet (sf) of office space. Floors two through four will consist of 18 dwelling units. Construction is proposed to begin in October 2022 and be completed by March 2023.

Project Conditions of Approval – Construction Emissions Control

The project conditions of approval include features to minimize air quality impacts that may occur during construction. During any construction period ground disturbance, the applicant will ensure that the project contractor implement measures to control dust and exhaust. The contractor will 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) will be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site will be covered.

3. All visible mud or dirt track-out onto adjacent public roads will 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 will be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used.

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

6. Idling times will 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 will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will 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 will respond and take corrective action within 48 hours. The Air District's phone number will also be visible to ensure compliance with applicable regulations.

9. All mobile construction equipment larger than 25 horsepower used at the site shall meet U.S. EPA Tier 4 emission standards for particulate matter (PM_{10} and $PM_{2.5}$), if feasible, otherwise,

    a. If use of Tier 4 equipment is not available, alternatively use equipment that meets U.S. EPA emission standards for Tier 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve a 40 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment; alternatively (or in combination).

    b. Use of electrical or non-diesel fueled equipment.

The practices 1-8 above are consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines. These controls on construction equipment emissions are intended to reduce emissions of air pollutants and toxic air contaminants. This condition is consistent with the City's General Plan Policy LU 8.9 *Air Quality Construction Impact* and Policy LU 8.11 *Toxic Air Contaminants*.

<u>Project Conditions of Approval – Sensitive Receptor Exposure Control (General Plan Policy LU 8.11 Toxic Air Contaminants)</u>

The project conditions of approval include features to minimize air quality impacts that may occur during the operation of the project. Enhanced filtration in ventilation systems for residential dwelling units would be required 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 annual $PM_{2.5}$ concentrations from El Camino Real traffic are above their respective threshold at the project site. 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 project conditions of approval. 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 residential buildings on the project site. 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 Project Conditions of Approval

A properly installed and operated ventilation system with MERV13 would achieve an 80-percent reduction. The overall effectiveness calculations take into account the amount of time spent outdoors. 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. For El Camino Real, this would reduce the maximum annual $PM_{2.5}$ concentration to 0.11 $\mu g/m^3$. With this Conditions of Approval, impacts from El Camino Real would be below their respective single--source threshold. This condition is consistent with the City's General Plan Policy LU 8.11 *Toxic Air Contaminants*.

<u>Project Conditions of Approval – City's Climate Action Plan (CAP) Checklist (General Plan Policy LU 8.3 GHG Emission Reductions)</u>

The City of San Mateo's CAP Appendix 3 Consistency Checklist or other qualified GHG program in effect, shall be submitted along with any application for the project, demonstrating compliance with all mandatory requirements of the San Mateo's CAP Appendix 3 Compliance Checklist, except where the item is not applicable or where a suitable substitution is provided.

Setting

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

Air Pollutants of Concern

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

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

Toxic Air Contaminants

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

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are in the adjacent multi-family residences to the northeast of the site. There are other sensitive receptors surrounding the site at further distances, including the St. Matthew Catholic Elementary School and the Centennial Montessori School. This project would also introduce new sensitive receptors (i.e., residents) to the area.

Regulatory Setting

Federal Regulations

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

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of NO_X and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[2]

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

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

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

State Regulations

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

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

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

Bay Area Air Quality Management District (BAAQMD)

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

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

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.

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[4] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. Overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall CalEnviroScreen score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.[5] The BAAQMD has identified six communities as impacted: Concord, Richmond/San Pablo, Western Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco. The project site is not within a CARE area and not within a BAAQMD overburdened area as identified by CalEnviroScreen.

The BAAQMD California Environmental Quality Act (*CEQA) Air Quality Guidelines*[6] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. *Attachment 1* includes detailed community risk modeling methodology.

City of San Mateo Vision 2030 General Plan

The Land Use Element of the City of San Mateo Vision 2030 General Plan includes goals, policies, and actions to reduce exposure of the City's sensitive population to exposure of air pollution, toxic

[4] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program , accessed 2/18/2021.
[5] See BAAQMD: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en , accessed 10/1/2021.
[6] Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.

air contaminants, and GHGs. The following goals, policies, and actions are applicable to the proposed project:

Climate Change Goals and Policies

Goal 8a Reduce greenhouse gas emissions each year consistent with the Climate Action Plan.

Policy LU 8.1 Carbon Footprint. The City shall prepare an updated greenhouse gas emissions inventory consistent with the Climate Action Plan.

Policy LU 8.2 Effects of Climate Change. Incorporate consideration of the effects of climate change in development of General Plan updates, disaster planning, City projects, infrastructure planning, future policies and long-term strategies. Explore voluntary adjustments of base flood elevation.

Policy LU 8.3 GHG Emission Reductions. Monitor and report progress toward the City's GHG emissions reduction target on an annual basis and regularly review emission reduction measures and new opportunities consistent with guidance of the City's Climate Action Plan.

Air Quality Goals and Policies

Policy LU 8.9 Air Quality Construction Impacts. The City shall mitigate air quality impacts generated during construction activities by requiring the following measures:

1. Use of appropriate dust control measures, based on project size and latest BAAQMD guidance, shall be applied to all construction activities within San Mateo.

2. Applicants seeking demolition permits shall demonstrate compliance with applicable BAAQMD requirements involving lead paint and asbestos containing materials (ACM's) designed to mitigate exposure to lead paint and asbestos.

3. Utilization of construction emission control measures recommended by BAAQMD as appropriate for the specifics of the project (e.g., length of time of construction and distance from sensitive receptors). This may include the utilization of low emission construction equipment, restrictions on the length of time of use of certain heavy-duty construction equipment, and utilization of methods to reduce emissions from construction equipment (alternative fuels, particulate matter traps and diesel particulate filters).

Policy LU 8.11 Toxic Air Contaminants. The City shall require that when new development that would be a source of TACs is proposed near residences or sensitive receptors, either adequate buffer distances shall be provided (based on recommendations and requirements of the California Air Resources Control

Board and BAAQMD), or filters or other equipment/solutions shall be provided to reduce the potential exposure to acceptable levels.

When new residential or other sensitive receptors are proposed near existing sources of TAC's, either adequate buffer distances shall be provided (based on recommendations and requirements of the California Air Resources Control Board and BAAQMD), or filters or other equipment/solutions shall be provided to the source to reduce the potential exposure to acceptable levels.

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, which were used in this analysis and are summarized in Table 1. Impacts above these thresholds are considered potentially significant.

Table 1. BAAQMD CEQA Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	**Average Daily Emissions (lbs./day)**	**Annual Average Emissions (tons/year)**
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	None	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	10 per one million	100 per one million	
Hazard Index	1.0	10.0	
Incremental annual $PM_{2.5}$	0.3 µg/m^3	0.8 µg/m^3	
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) *		

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.

Source: Bay Area Air Quality Management District, 2017

AIR QUALITY IMPACTS AND MITIGATION MEASURES

Impact AIR-1: 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.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 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 2021 (EMFAC2021) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks.[7] The CalEEMod model output along with construction inputs are included in *Attachment 2* and EMFAC2021 vehicle emissions modeling outputs are included in *Attachment 3*.

Conditions Of Approval

Consistent with the City's General Plan Policy LU 8.9 *Air Quality Construction Impact* and Policy LU 8.11 *Toxic Air Contaminants*, measures to minimize impacts would be incorporated into project construction plans. Project Conditions of Approval (COAs) include measures to minimize dust generation and equipment exhaust that are consistent with these policies. The construction impact analysis includes the effects of the COA.

CalEEMod Modeling

Land Use Inputs

The proposed project land uses were entered into CalEEMod as described in Table 2.

[7] See CARB's EMFAC2021 Emissions Inventory at https://arb.ca.gov/emfac/emissions-inventory.

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Apartments Mid Rise	18	Dwelling Unit	23,190	0.29
General Office Building	4.65	1000-sf	4,650	
Enclosed Parking with Elevator	22	Parking Spaces	9,510	

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 default CalEEMod information for a project of this type and size which was then reviewed and adjusted by the applicant.

The project construction equipment worksheet based on defaults but reviewed 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 based on defaults. 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 October 2022 and would be built out over a period of approximately 6 months, or 123 construction workdays. The earliest year of full operation was assumed to be 2024.

Construction Truck Traffic Emissions

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 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 and grading were estimated from the provided demolition and grading volumes by assuming each truck 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 latest version of the CalEEMod model is based on the older version of the CARB EMFAC2017 motor vehicle emission factor model. This model has been superseded by the EMFAC2021 model; however, CalEEMod has not been updated to include EMFAC2021. Therefore, the construction traffic information was combined with EMFAC2021 motor vehicle emissions factors. EMFAC2021 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 (soil import/export). Since CalEEMod does not address cement 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 emissions in San Mateo County for 2022-2023 was used in these calculations. Table 3 provides the traffic inputs that were combined with the EMFAC2021 emission database to compute vehicle emissions.

Table 3. Construction Traffic Data Used for EMFAC2021 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]	62.9% LDA 5.8% LDT1 31.3% LDT2	77.5% MHDT 22.5% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	20.0	CalEEMod default distance with 5-min truck idle time.
Demolition	100	-	31	6,754-sf building demolition. CalEEMod default worker trips.
Site Preparation	5	-	-	CalEEMod default worker trips.
Grading	16	-	125	1,000-cy soil export. CalEEMod default worker trips.
Trenching	10	-	-	CalEEMod default worker trips.
Building Construction	1,800	400	100	50 cement round trips. CalEEMod default worker and vendor trips.
Architectural Coating	20	-	-	CalEEMod default worker trips.
Paving	90	-	-	CalEEMod default worker trips.

Notes: [1] Based on Year 2022 - 2023 EMFAC2021 light-duty vehicle fleet mix for San Mateo County.
[2] Includes demolition and grading trips estimated by CalEEMod based on amount of material to be removed.

Summary of Computed Construction Period Emissions

Average daily emissions were computed by dividing the total construction emissions by the number of active construction workdays (123 days). Table 4 shows the 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 4, predicted project construction emissions would not exceed the BAAQMD significance thresholds during construction.

Table 4. Construction Period Emissions

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total Construction Emissions (tons)	0.23	0.44	0.02	0.02
Average daily emissions (pounds)[1]	3.81	7.23	0.37	0.33
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 123 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. As part of the project *conditions of approval*, the project would include construction emissions control features that would implement BAAQMD-recommended best management practices.

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.

CalEEMod Inputs

Land Uses

The project land uses were input to CalEEMod as described above for the construction period modeling.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest year of full operation would be 2024 if construction begins in 2022. Emissions associated with build-out later than 2024 would be lower.

Traffic Information

CalEEMod allows the user to enter specific vehicle trip generation rates. Therefore, the project-

specific daily trip generation rate provided by the traffic consultant was entered into the model.[8] However, the daily trip generation rate provided for the residential dwelling units is the CalEEMod default rate for the "Apartments Mid Rise" land use type. Therefore, the only modification to the CalEEMod default trip generation rate was for the weekday "General Office Building" land use type. The project would produce 173 daily trips. The default trip types and lengths specified by CalEEMod were used.

EMFAC2021 Adjustment

The vehicle emission factors and fleet mix used in CalEEMod are based on EMFAC2017, which is an older CARB emission inventory for on road and off road mobile sources. Since the release of CalEEMod Version 2020.4.0, new emission factors have been produced by CARB. EMFAC2021 became available for use in January 2021. It includes the latest data on California's car and truck fleets and travel activity. The CalEEMod vehicle emission factors and fleet mix were updated with the emission rates and fleet mix from EMFAC2021, which were adjusted with the CARB EMFAC off-model adjustment factors. On road emission rates from 2024 San Mateo County were used (See *Attachment 3*). More details about the updates in emissions calculation methodologies and data are available in the EMFAC2021 Technical Support Document.[9]

Energy

CalEEMod defaults for energy use were used, which include the 2019 Title 24 Building Standards. GHG emissions modeling includes those indirect emissions from electricity consumption. San Mateo has a reach code for mixed-use residential developments that bans natural gas from new construction. All Title 24 natural gas consumption was added to the Title 24 electricity intensity in CalEEMod because of this reach code. CalEEMod has a default emission factor of 0 pounds of CO_2 per megawatt of electricity produced, which is based on Peninsula Clean Energy's 2019 emissions rate.

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 since the project site would not send wastewater to septic tanks or facultative lagoons. CalEEMod default inputs assume new residential construction would include woodburning fireplaces and stoves. The project would not include wood-burning devices, as these devices are prohibited by BAAQMD Regulation 6, Rule 3.[10] Therefore, the number of woodstoves and woodburning fireplaces in CalEEMod were set to zero.

Existing Uses

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[8] AECOM 1 Hayward Ave Mixed-Use Development Transportation Impact Analysis Report, Attachment: *1 Hayward Ave – TIA Draft #2 – 100121.pdf.*

[9] See CARB 2021: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac

[10] Bay Area Air Quality Management District, https://www.baaqmd.gov/~/media/dotgov/files/rules/regulation-6-rule-3/documents/20191120_r0603_final-pdf.pdf?la=en

The existing site consists of three buildings making up five dwelling units, with associated driveways, and a small office. 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. The daily emissions were estimated assuming 365 days of operation. Table 5 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.

Table 5. Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2024 Project Operational Emissions (*tons/year*)	0.21	0.05	0.12	0.03
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Thresholds?	No	No	No	No
2024 Project Operational Emissions (*lbs./day*)[1]	1.16	0.30	0.65	0.17
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 AIR-2: Expose sensitive receptors to substantial pollutant concentrations?

Project impacts related to increased community risk can occur either by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity or by significantly exacerbating existing cumulative TAC impacts. This project would introduce new sources of TACs during construction (i.e., on-site construction and truck hauling emissions) and operation (i.e., mobile sources).

Project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. The project would not include the installation of any emergency generators powered by a diesel engine but would generate some traffic consisting of mostly light-duty gasoline-powered vehicles, which would produce TAC and air pollutant emissions.

Project impacts to existing sensitive receptors were addressed for temporary construction activities and long-term operational conditions. There are also several sources of existing TACs and localized air pollutants in the vicinity of the project. The impact of the existing sources of TAC was also assessed in terms of the cumulative risk which includes the project contribution, as well as the risk on the new sensitive receptors introduced by the project.

Community Risk Methodology for Construction and Operation

Community risk impacts were addressed by predicting increased cancer risk, the increase in annual $PM_{2.5}$ concentrations and computing the Hazard Index (HI) for non-cancer health risks. The risk impacts from the project are the combination of risks from construction and operation sources. These sources include on-site construction activity, construction truck hauling, and increased traffic from the project. To evaluate the increased cancer risks from the project, a 30-year exposure period was used, per BAAQMD guidance,[11] with the sensitive receptors being exposed to both project construction and operation emissions during this timeframe.

The project increased cancer risk is computed by summing the project construction cancer risk and operation cancer risk contributions. Unlike, the increased maximum cancer risk, the annual $PM_{2.5}$ concentration and HI values are not additive but based on the annual maximum values for the entirety of the project. The project maximally exposed individual (MEI) is identified as the sensitive receptor that is most impacted by the project's construction and operation.

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

Modeled Sensitive Receptors

Receptors for this assessment included locations where sensitive populations would be present for extended periods of time (i.e., chronic exposures). This includes the existing residences to the south and east of the site and other existing residences at further distances, as shown in Figure 1. Residential receptors are assumed to include all receptor groups (i.e., third trimester, infants, children, and adults) with almost continuous exposure to project emissions.

Community Health Risk 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 (see Impact AIR-2). 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 $PM_{2.5}$.[12] This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

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

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

Conditions Of Approval

Consistent with the City's General Plan Policy LU 8.9 *Air Quality Construction Impact* and Policy LU 8.11 *Toxic Air Contaminants*, measures to minimize impacts would be incorporated into project construction plans. Project COAs include measures to minimize dust generation and equipment exhaust that are consistent with these policies. The construction impact analysis includes the effects of the COA that would reduce emissions of TACs and $PM_{2.5}$.

Construction Emissions

The CalEEMod model and EMFAC2021 emissions 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 0.02 tons (43 pounds). The on-road emissions are a result of haul truck travel during 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 0.003 tons (7 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors 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.[13] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

Combustion equipment DPM exhaust emissions were modeled as a series of point sources with a nine-foot release height (construction equipment exhaust stack height) placed at 23 feet (7 meter) intervals throughout the construction site. This resulted in 24 individual point sources being used to represent mobile equipment DPM exhaust emissions in the respective construction area, with DPM emissions occurring throughout the project construction site. In addition, the following stack parameters were used: a vertical release, a stack diameter of 2.5 inches, an exhaust temperature of 918˚F, and an exit velocity of 309 feet per second. Since these are point sources plume rise is calculated by the AERMOD dispersion model. Emissions from vehicle travel on- and off-site were also distributed among the point sources throughout the site. The locations of the point sources used for the modeling are identified in Figure 1.

For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 7 feet (2 meters) was used for the area source. Fugitive dust emissions at construction sites come from a variety of sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other

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

materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources.

AERMOD Inputs and Meteorological Data

The modeling used a five-year data set (2013 - 2017) of hourly meteorological data from the San Francisco International Airport prepared for use with the AERMOD model by BAAQMD. Construction emissions were modeled as occurring daily between 7:00 a.m. to 4:00 p.m., when the majority of construction activity is expected to occur. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2022-2023 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, second, and third floor of nearby single and multi-family residences.[14] Receptor heights of 3 feet (1 meter) were used at the St. Matthew Catholic Elementary School and the Centennial Montessori School.

Summary of Construction Community Risk Impacts

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the Office of Environmental Health Hazard Assessment (OEHHA) guidance for age sensitivity factors and exposure parameters as recommended by BAAQMD (see *Attachment 1)*. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Third trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period.

The maximum modeled annual $PM_{2.5}$ concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI value was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation refence exposure level of 5 $\mu g/m^3$.

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 (MEI). Results of this assessment indicated that the construction MEI was located on the second floor (15 feet above ground) of the adjacent multi-family home northeast of the project site. Table 6 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities affecting the construction MEIs. *Attachment 4* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations. A fourth floor of modeling is

[14] 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

not included in this analysis since the cancer risk and annual $PM_{2.5}$ concentrations decreased from the second to third floors and would continue to decrease with height.

Community Risks from Project Operation – Generator and Traffic

Stationary equipment that could emit substantial TACs (e.g., emergency generators) are not planned for this project. Operation of the project would have long-term emissions from mobile sources (i.e., traffic). Per BAAQMD recommended risks and methodology, a road with less than 10,000 total vehicles per day is considered a low-impact source of TACs.[15] This project would generate 173 daily trips[16] dispersed on the roadway system with a majority of the trips being from light-duty vehicles (i.e., passenger automobiles), which is a fraction of 10,000 daily vehicles. Therefore, emissions from project traffic are considered negligible and were not included in this analysis.

Summary of Project-Related Community Risks at the Off-Site Project MEI

Project risk impacts are shown in Table 6. The maximum cancer risks from construction activities at the residential project MEI locations without the project's COAs would exceed the single-source significance threshold. However, with the incorporation of the project's COAs, the risk would no longer exceed the BAAQMD single-source significance threshold. The $PM_{2.5}$ concentration and non-cancer hazards from construction activities without the project's COAs would be below the single-source significance threshold.

Table 6. Construction and Operation Risk Impacts at the Off-Site MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impact				
Project Construction	Without COA	**16.61 (infant)**	0.11	0.02
	With COA*	0.99 (infant)	0.01	<0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Without COA	***Yes***	*No*	*No*
	With COA*	*No*	*No*	*No*

* Construction equipment with Tier 4 interim engines and Best Management Practices as condition of approval.

[15] 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

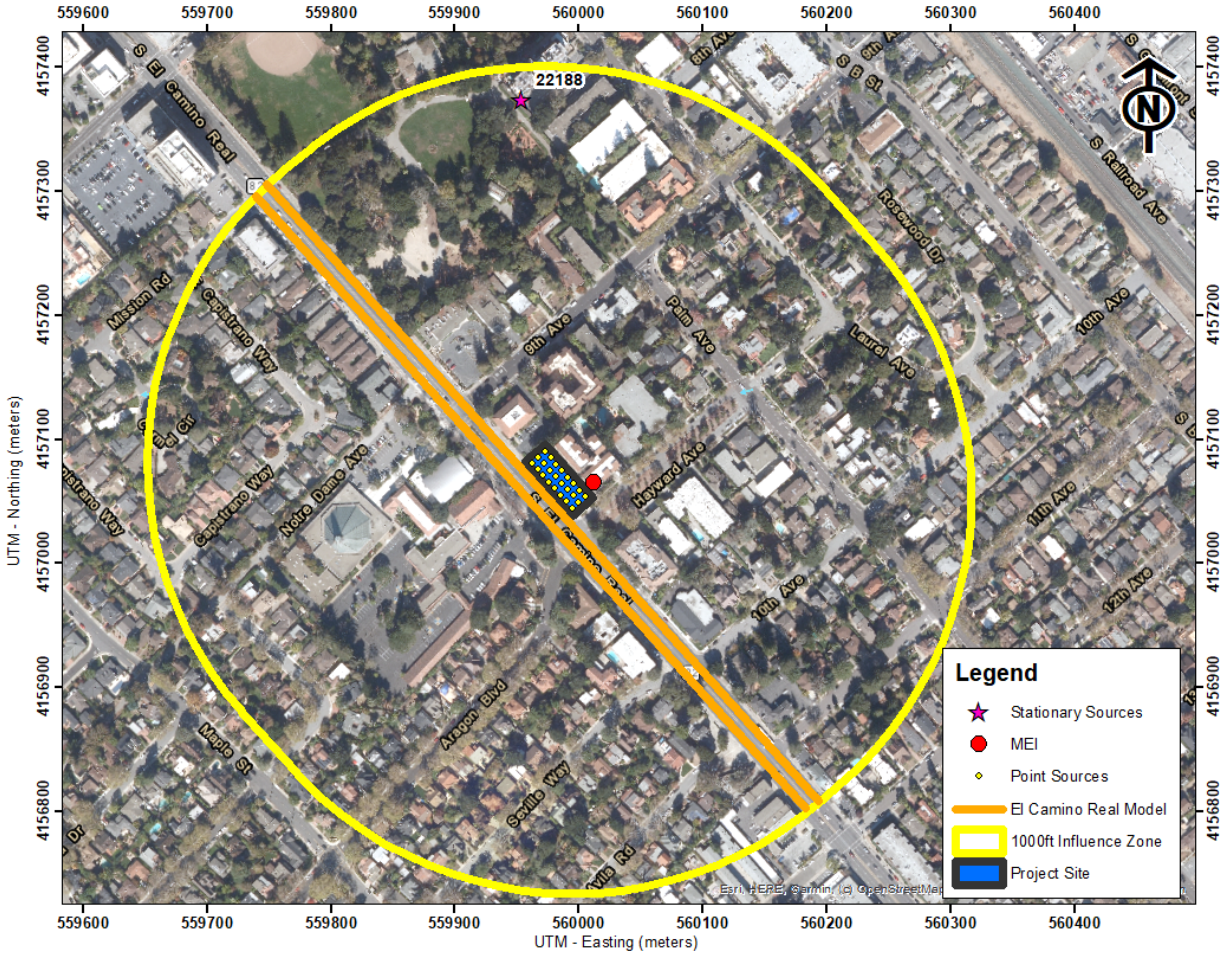
[16] Email attachment from AECOM, September, 2021, Attachment:*1 Hayward Ave – TIA Draft #2 100121.pdf.*

Figure 1. Locations of Project Construction Site, Off-Site Sensitive Receptors, and Maximum TAC Impact

Cumulative Community Risks of all TAC Sources at the Offsite Project 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 a project site (i.e., influence area). These sources include rail lines, highways, busy surface streets, and stationary sources identified by BAAQMD. A review of the project area and based on provided traffic information indicated that one roadway, El Camino Real, within the influence area would have traffic exceeding 10,000 vehicles per day. Other nearby streets are assumed to have less than 10,000 vehicles per day. A review of BAAQMD's stationary source geographic information systems (GIS) map tool identified one stationary sources with the potential to affect the project site and MEI. Figure 2 shows the location of the sources affecting the MEI. Community risk impacts from these sources upon the MEI are reported in Table 7. Details of the modeling and community risk calculations are included in *Attachment 5.*

Figure 2. Project Site and Nearby TAC and $PM_{2.5}$ Sources



Local Roadways – El Camino Real

A refined analysis of potential health impacts from vehicle traffic on El Camino Real was conducted. The refined analysis involved predicting emissions for the traffic volume and mix of vehicle types on the roadway near the project site and using an atmospheric dispersion model to predict exposure to TACs. The associated cancer risks are then computed based on the modeled exposures. *Attachment 1* includes a description of how community risk impacts, including cancer risk are computed.

Emission Rates

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on both roadways using the Caltrans version of the 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 (e.g., TOG), running evaporative losses for TOG, and tire and brake wear and fugitive road dust for $PM_{2.5}$. All $PM_{2.5}$ emissions from all vehicles were used, rather than just the $PM_{2.5}$ fraction from diesel powered vehicles, because all vehicle types (i.e., gasoline and diesel powered) produce $PM_{2.5}$. Additionally, $PM_{2.5}$ emissions from vehicle tire and brake wear and from re-entrained roadway dust were included in these emissions. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2017 emissions data. Inputs to the model include region (San Mateo County), type of road (major/collector), truck percentage for non-state highways in San Mateo County (3.13 percent),[17] traffic mix assigned by CT-EMFAC2017 for the county, year of analysis (2022 – construction start year), and season (annual).

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 2022 (project construction 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 CT-EMFAC2017. Year 2022 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions, will decrease in the future.

The average daily traffic (ADT) for El Camino Real was calculated based on traffic data provided by the project's traffic consultant.[18] The estimated ADT on El Camino Real was 38,729 vehicles. Average hourly traffic distributions for San Mateo County roadways were developed using the EMFAC model,[19] which were then applied to the ADT volumes to obtain estimated hourly traffic

[17] 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

[18] 1 Hayward Ave Mixed-Use Development Transportation Impact Analysis Report, AECOM, September 2021, Attachment: *1 Hayward Ave – TIA Draft #1 Appendix – 092421.pdf.*

[19] The Burden output from EMFAC2007, a previous version of CARB's EMFAC model, was used for this since the current web-based version of EMFAC2014 does not include Burden type output with hour by hour traffic volume information.

volumes and emissions for the roadway. An average travel speed of 35 miles per hour (mph) on El Camino Real was used for all hours of the day based on posted speed limit signs on the roadway.

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.[20] TAC and $PM_{2.5}$ emissions from traffic on El Camino Real within 1,000 feet of the project site were evaluated. Vehicle traffic on the roadway was modeled using a series of adjacent volume sources along a line (line volume sources); with line segments used for the northbound and southbound travel directions on El Camino Real. The same meteorological data and off-site sensitive receptors used in the previous dispersion modeling were used in the roadway modeling. Other inputs to the model included road geometry, hourly traffic emissions, and receptor locations. Annual TAC and $PM_{2.5}$ concentrations for 2022 from traffic on El Camino Real were calculated using the model. Concentrations were calculated at the project MEI with receptor heights of 15 feet (4.5 meters) to represent the breathing heights of residents on the second floor in the multi-family homes.

Figure 2 shows the roadway segments modeled and residential receptor locations used in the modeling. Table 7 lists the risks and hazards from the roadway. The emission rates and roadway calculations used in the analysis are shown in *Attachment 5*.

BAAQMD Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2018* GIS website,[21] 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. One source, a diesel-powered generator, was identified using this tool. The BAAQMD GIS website provided screening risks and hazards for this source, so a stationary source information request was not required to be submitted to BAAQMD.

The screening level risks and hazards provided by BAAQMD for the stationary sources were adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. Community risk impacts from the stationary sources upon the MEIs are reported in Table 7.

Summary of Cumulative Health Risk Impact at Construction MEI

Table 7 reports both the project and cumulative community risk impacts at the sensitive receptors most affected by construction (i.e., the MEI). The project would have an exceedance with respect to community risk caused by project construction activities, since the maximum cancer risk without the project's COAs exceeds the BAAQMD single-source threshold. With the implementation of the project's COAs, the project's cancer risks would be lowered to a level below

[20] BAAQMD. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012
[21] BAAQMD, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

the single-source threshold. The annual $PM_{2.5}$ concentration and Hazard Index, without and with the COAs, do not exceed their single-source or cumulative threshold. According to BAAQMD, health risks would be less than significant if the risks from the project are reduced below the single source thresholds.

Table 7. Cumulative Community Risk Impacts at the Location of the Project MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	Without COA	**16.61 (infant)**	0.11	0.02
	With COA*	0.99 (infant)	0.01	<0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Without COA	***Yes***	*No*	*No*
	With COA	*No*	*No*	*No*
Cumulative Sources				
El Camino Real, ADT 38,729		4.83	0.32	<0.01
Lesley Foundation dba Lesley Senior Communities (Facility ID #22188, Generators), MEI at 1000+ feet		0.10	-	-
Combined Sources	Without COA	21.54	0.43	<0.03
	With COA	5.92	0.33	<0.02
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Without COA	*No*	*No*	*No*
	With COA	*No*	*No*	*No*

Effectiveness of the Conditions of Approval

CalEEMod was used to compute emissions associated with the project's COAs assuming that all equipment met U.S. EPA Tier 4 interim engines standards along with BAAQMD best management practices for construction were included. With this implemented, the project's construction cancer risk impact, assuming infant exposure, would be reduced by 94 percent to 0.99 chances per million. A plan that reduces DPM emissions by 45 percent would reduce cancer risk to about 9.1 chances per million. As a result, the project's construction cancer risk with the COAs would be reduced below the BAAQMD single-source threshold.

On-Site Community Health Risk Impacts – New Project Residents

The City's General Plan, Policy LU 8.11 - *Toxic Air Contaminants*, requires that when new residential are proposed near existing sources of TAC's, either adequate buffer distances shall be provided or filters or other equipment/solutions shall be provided to reduce the potential exposure to acceptable levels. BAAQMD's recommended thresholds for health risks and hazards, shown in Table 1, are used to evaluate on-site exposure.

This health risk assessment was completed to assess the impact existing TAC sources would have on the new proposed sensitive receptors (residents) that that project would introduce. The same TAC sources identified above were used in this health risk assessment.[22] The project includes a COA to require enhanced MERV13 filtration in order to meet the General Plan's policy.

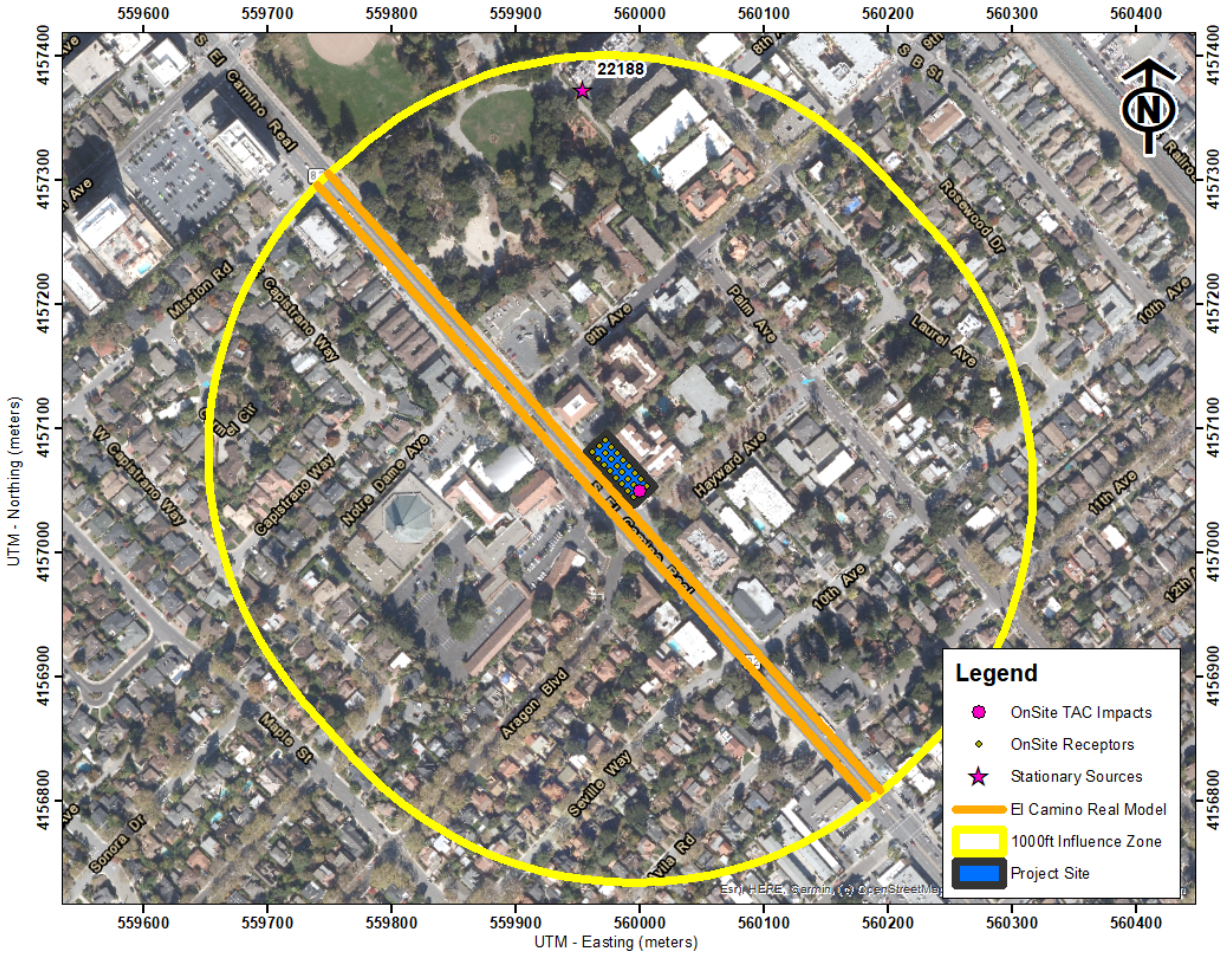
Local Roadways – El Camino Real

The roadway analysis for the project residents was conducted in the same manner as described above for the off-site MEI. However, year 2024 (operational year), instead of 2022 (construction year), emission factors were conservatively assumed as being representative of future conditions. Changing to the operational year results in an increased ADT on El Camino Real of 39,496. The project set of receptors were placed throughout the project area and were spaced every 23 feet (7 meters). Roadway impacts were modeled at receptor heights of 15 feet (4.5 meters) and 25 feet (7.6 meters) representing sensitive receptors on the second and third floors of the future multi-family residences. The portions of El Camino Real included in the modeling are shown in Figure 3 along with the project site 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 third trimester pregnancy and infants/children and were assumed to be in the new homes for 24 hours per day for 350 days per year. The highest impacts from El Camino Real occurred at the second-floor receptor (first residential level) in the southeast portion of the project site. Cancer risks associated with El Camino Real are greatest closest to the roadway and decrease with distance. The roadway community risk impacts at the project site with the incorporation of the project's MERV13 air filtration COA are shown in Table 8. Details of the emission calculations, dispersion modeling, and cancer risk calculations are contained in *Attachment 5.* A fourth floor of modeling is not included in this analysis since the cancer risk and annual $PM_{2.5}$ concentrations decreased from the second to third floors of the proposed building and would continue to decrease with height.

[22] 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, On-Site Residential Receptors, Roadway Segments Evaluated, and Locations of Maximum Roadway TAC Impacts



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 8 shows the health risk screening results from the stationary sources.

Combined Community Health Risk at Project Site

Community risk impacts from the existing TAC sources upon the project site are reported in Table 8. The risks from the singular TAC sources are compared against the BAAQMD single-source threshold. The risks from all the sources are then combined and compared against the BAAQMD cumulative-source threshold. As shown, the cancer risk, annual $PM_{2.5}$ concentrations, and HI from the nearby sources do not exceed their single-source or cumulative-source thresholds. The risks shown in Table 8 incorporate the project's conditions of approval.

Table 8. Cumulative Community Risk Impacts Upon the On-site Sensitive Receptors

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
El Camino Real, ADT 39,496 – With COA	2.37	0.11	<0.01
Lesley Foundation dba Lesley Senior Communities (Facility ID #22188, Generator), Project Site at 900 feet	0.12	-	-
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	*No*	*No*	*No*
Cumulative Total	2.50	0.11	<0.01
BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Exceed Threshold?	*No*	*No*	*No*

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 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 & Senate Bill 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*.[23] 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

[23] 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 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.

Senate Bill 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 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.[24] 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 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.[25]

[24] 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.
[25] See: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2018, total gross nationwide GHG emissions were 6,676.6 million metric tons (MMT) carbon dioxide equivalent (CO_2e).[26] These emissions were lower than peak levels of 7,416 MMT that were emitted in 2007. CARB updates the statewide GHG emission inventory on an annual basis where the latest inventory includes 2000 through 2017 emissions.[27] In 2017, GHG emissions from statewide emitting activities were 424 MMT. The 2017 emissions have decreased by 14 percent since peak levels in 2004 and are 7 MMT below the 1990 emissions level and the State's 2020 GHG limit. Per capita GHG emissions in California have dropped from a 2001 peak of 14.1 MT per person to 10.7 MT per person in 2017. The most recent Bay Area emission inventory was computed for the year 2011.[28] The Bay Area GHG emission were 87 MMT. As a point of comparison, statewide emissions were about 444 MMT in 2011

City of San Mateo Climate Action Plan

The City of San Mateo Climate Action Plan (CAP),[29] updated and adopted in April 2020, is a qualified GHG reduction strategy that was developed by the City to not only reduce their GHG emissions but also improve the quality of life in San Mateo. The 2020 CAP contains 29 GHG reduction measures that will help reduce the community's GHG emissions to meet the City's reduction targets. The City has GHG reduction targets of reducing GHG levels by 15 percent from 2005 levels by 2020, 4.3 $MTCO_2e$ per capita by 2030, and 1.2 MTCO2e per capita by 2050.

Additionally, The CAP includes the CAP Consistency Checklist (Appendix 3 in the CAP) that identifies the minimum criteria a project must demonstrate to use the City's CAP for purposes of streamlining the analysis of GHG emissions under CEQA. The CAP Checklist ensures that all new development projects are complaint with the City's CAP measures. If a new development complies with the CAP, then the new development would be found to have a less-than-significant impact for GHG emissions.

BAAQMD GHG Significance Thresholds

The BAAQMD's CEQA Air Quality Guidelines do not use quantified thresholds for projects that are in a jurisdiction with a qualified GHG reductions plan (i.e., a Climate Action Plan). The plan has to address emissions associated with the period that the project would operate (e.g., beyond year 2020). For quantified emissions, the 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

[26] United States Environmental Protection Agency, 2020. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018*. April. Web: https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf

[27] CARB. 2019. *2019 Edition, California Greenhouse Gas Emission Inventory: 2000 – 2017*. Web: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf

[28] BAAQMD. 2015. *Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011*. January. Web: http://www.baaqmd.gov/~/media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf accessed Nov. 26, 2019.

[29] *City of San Mateo Climate Action Plan.* April 2020. https://www.cityofsanmateo.org/DocumentCenter/View/80652/2020-Climate-Action-Plan?bidId=

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.

BAAQMD has not published quantified thresholds post 2020; therefore, the City of San Mateo has elected to rely on the compliance with the City's CAP Checklist measures to determine significance for GHG emissions. The City's CAP Checklist is included in *Attachment 6*.

Impact-GHG 1: 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 and the City's Climate Action Plan.

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

The project service population efficiency rate is based on the number of future residents and employees. For this project, the number of future residents and employees was provided by the applicant. Using the provided information, the service population was estimated to be 36 (27 residents + 9 employees).

Construction GHG Emissions

GHG emissions associated with construction were computed to be 84 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 GHG 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 9, the annual emissions resulting from operation of the new dwelling units of

the proposed project are predicted to be 141 MT of CO_2e in 2024 and 131 MT of CO_2e in 2030. The service population emission for the year 2024 and 2030 are predicted to be 3.92 and 3.63 MT/CO_2e/year/service population, respectively.

The project would be below the City's service population target of 4.3 MTCO_2e per capita by 2030. However, the project is subject to the City of San Mateo's CAP to meet AB 32 requirements. The implementation of the COAs, which requires the project to use the CAP checklist, would demonstrate the project's consistency with the City's CAP.

Table 9. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Proposed Project in 2024	Proposed Project in 2030
Area	0	0
Energy Consumption	0	0
Mobile	120	110
Solid Waste Generation	6	6
Water Usage	1	1
Total (MT CO_2e/year)	128	118
Service Population Emissions (MT CO_2e/year/service population)	3.56	3.27
City's CAP Target		***4.3 in 2030***

Impact GHG-2: 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 emissions. Also included are any modeling assumptions.

Attachment 3 includes the EMFAC2021 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 assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction. AERMOD dispersion modeling files for this assessment, 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 project site receptors.

Attachment 6 is the Compliance Checklist contained in the City's Climate Action Plan.

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.[30] 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.[31] 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.[32] 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

[30] 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.
[31] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[32] 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

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

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: 1 Hayward Ave

See Equipment Type TAB for type, horsepower and load factor

Complete ALL Portions in Yellow

Project Size
- 18 Dwelling Units
- 0.29 total project acres disturbed
- 23,190 s.f. residential
- NA s.f. retail
- 4,650 s.f. office/commercial
- NA s.f. other, specify:
- 9,510 s.f. parking garage — 22 spaces
- NA s.f. parking lot — spaces

Construction Hours 7 am to 4 pm

Pile Driving? Y/N?

Project include OPERATIONAL GENERATOR OR FIRE PUMP on-site? Y/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	HP Annual Hours	Comments
	Demolition	**Start Date:**	**10/3/2022**	**Total phase:**	**10**			**Overall Import/Export Volumes**
		End Date:	**10/14/2022**					
1	Concrete/Industrial Saws	81	0.73	8	10	8	4730	**Demolition Volume**
	Excavators	158	0.38			0	0	Square footage of buildings to be demolished
1	Rubber-Tired Dozers	247	0.4	1	10	1	988	(*or* total tons to be hauled)
2	Tractors/Loaders/Backhoes	97	0.37	6	10	6	4307	**6754** square feet *or*
	Other Equipment?							**?** Hauling volume (tons)
								Any pavement demolished and hauled? **?** **tons**
	Site Preparation	**Start Date:**	**10/15/2022**	**Total phase:**	**1**			
		End Date:	**10/17/2022**					
1	Graders	187	0.41	8	1	8	613	
	Rubber Tired Dozers	247	0.4			0	0	
1	Tractors/Loaders/Backhoes	97	0.37	8	1	8	287	
	Other Equipment?							
	Grading / Excavation	**Start Date:**	**10/18/2022**	**Total phase:**	**2**			
		End Date:	**10/19/2022**					**Soil Hauling Volume**
	Excavators	158	0.38			0	0	Export volume = **1000** cubic yards?
1	Graders	187	0.41	6	2	6	920	Import volume = **_** cubic yards?
1	Rubber Tired Dozers	247	0.4	6	2	6	1186	
	Concrete/Industrial Saws	81	0.73			0	0	
1	Tractors/Loaders/Backhoes	97	0.37	7	2	7	502	
	Other Equipment?							
	Trenching/Foundation	**Start Date:**	**10/18/2022**	**Total phase:**	**2**			
		End Date:	**10/19/2022**					
1	Tractor/Loader/Backhoe	97	0.37	8	2	8	574	
1	Excavators	158	0.38	8	2	8	961	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**10/20/2022**	**Total phase:**	**100**			**Cement Trucks? 50 Total Round-Trips**
		End Date:	**3/8/2023**					
1	Cranes	231	0.29	4	100	4	26796	Electric? (Y/N) ___ Otherwise assumed diesel
2	Forklifts	89	0.2	6	100	6	21360	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
	Generator Sets	84	0.74			0	0	Or temporary line power? (Y/N) ___
1	Tractors/Loaders/Backhoes	97	0.37	8	100	8	28712	
	Welders	46	0.45			0	0	
	Other Equipment?							
	Building - Interior/Architectural Coating	**Start Date:**	**3/9/2023**	**Total phase:**	**5**			
		End Date:	**3/15/2023**					
4	Air Compressors	78	0.48	6	5	6	4493	
	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**3/16/2023**	**Total phase:**	**5**			
		Start Date:	**3/22/2023**					
4	Cement and Mortar Mixers	9	0.56	6	5	6	605	
1	Pavers	130	0.42	7	5	7	1911	**Asphalt? ___ cubic yards or ____ round trips?**
	Paving Equipment	132	0.36			0	0	
1	Rollers	80	0.38	7	5	7	1064	
1	Tractors/Loaders/Backhoes	97	0.37	7	5	7	1256	
	Other Equipment?							
	Additional Phases	**Start Date:**		**Total phase:**				
		Start Date:						
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	

Equipment types listed in "Equipment Types" worksheet tab.

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

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Complete one sheet for each project component

Construction Criteria Air Pollutants						
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	**CO2e**	
Year	Tons				MT	
Construction Equipment						
2022	0.23	0.41	0.02	0.02	63.06	
EMFAC						
2022	0.00	0.03	0.00	0.00	21.21	
Total Construction Emissions by Year						
2022	0.23	0.44	0.02	0.02	84.27	
	Total Construction Emissions					
Tons	0.23	0.44	0.02	0.02	84.27	
Pounds/Workdays	*Average Daily Emissions*				Workdays	
2022	3.81	7.23	0.37	0.33		**123**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		
	Total Construction Emissions					
Pounds	3.81	7.23	0.37	0.33	0.00	
Average	3.81	7.23	0.37	0.33	0.00	123.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Operational Criteria Air Pollutants						
Unmitigated	ROG	NOX	Total PM10	Total PM2.5		
Year	Tons					
Total	0.21	0.05	0.12	0.03		
	Existing Use Emissions					
Total	0.00	0.00	0.00	0.00		
	Net Annual Operational Emissions					
Tons/year	0.21	0.05	0.12	0.03		
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**		
	Average Daily Emissions					
Pounds Per Day	1.16	0.30	0.65	0.17		
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Category	**CO2e**			
	Project	Existing	Project 2030	Existing
Area	0.22	0.00	0.22	0.00
Energy	0.00	0.00	0.00	0.00
Mobile	120.33	0.00	109.89	0.00
Waste	6.34	0.00	6.34	0.00
Water	1.23	0.00	1.23	0.00
TOTAL	128.12	0.00	117.67	0.00
Net GHG Emissions		128.12		117.67
Service Population	36.00			
Per Capita Emissions		3.56		3.27

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	4.65	1000sqft	0.00	4,650.00	0
Enclosed Parking with Elevator	22.00	Space	0.00	9,510.00	0
Apartments Mid Rise	18.00	Dwelling Unit	0.29	23,190.00	51

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2024
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Applicant provided unit amounts, acreage, and square footage

Construction Phase - CalEEMod defaults used.

Off-road Equipment - Applicant provided equipment info

Off-road Equipment - Default equipment information assumed

Off-road Equipment - Default equipment information assumed

Off-road Equipment - Default equipment information assumed

Off-road Equipment - Default equipment information assumed

Off-road Equipment - Default equipment information assumed

Off-road Equipment - Default equipment information assumed

Date: 11/4/2021 3:23 PM

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Trips and VMT - All trips entered into EMFAC2021

Demolition -

Grading -

Vehicle Trips - Weekday general office building trip rate provided by AECOM traffic study

Vehicle Emission Factors - Emission factors from EMFAC2021

Woodstoves - No hearths

Water And Wastewater - 100% aerobic

Construction Off-road Equipment Mitigation - All equipment t4i, BMP

Fleet Mix - Fleet mix from EMFAC2021

Energy Use - San Mateo has nat gas reach code

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	NT24NG	1.01	0.00
tblEnergyUse	T24E	90.83	96.49
tblEnergyUse	T24E	3.66	3.67
tblEnergyUse	T24NG	5,828.01	0.00
tblEnergyUse	T24NG	18.14	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	2.70	0.00
tblFireplaces	NumberNoFireplace	0.72	0.00
tblFireplaces	NumberWood	3.06	0.00
tblFleetMix	HHD	2.1250e-003	2.5990e-003
tblFleetMix	HHD	2.1250e-003	2.5990e-003
tblFleetMix	HHD	2.1250e-003	2.5990e-003
tblFleetMix	LDA	0.47	0.46
tblFleetMix	LDA	0.47	0.46
tblFleetMix	LDA	0.47	0.46
tblFleetMix	LDT1	0.07	0.04
tblFleetMix	LDT1	0.07	0.04
tblFleetMix	LDT1	0.07	0.04
tblFleetMix	LDT2	0.23	0.27
tblFleetMix	LDT2	0.23	0.27

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tblFleetMix	LDT2	0.23	0.27
tblFleetMix	LHD1	0.03	0.03
tblFleetMix	LHD1	0.03	0.03
tblFleetMix	LHD1	0.03	0.03
tblFleetMix	LHD2	6.2330e-003	6.0580e-003
tblFleetMix	LHD2	6.2330e-003	6.0580e-003
tblFleetMix	LHD2	6.2330e-003	6.0580e-003
tblFleetMix	MCY	0.03	0.02
tblFleetMix	MCY	0.03	0.02
tblFleetMix	MCY	0.03	0.02
tblFleetMix	MDV	0.14	0.15
tblFleetMix	MDV	0.14	0.15
tblFleetMix	MDV	0.14	0.15
tblFleetMix	MH	2.6010e-003	2.0180e-003
tblFleetMix	MH	2.6010e-003	2.0180e-003
tblFleetMix	MH	2.6010e-003	2.0180e-003
tblFleetMix	MHD	0.01	8.8710e-003
tblFleetMix	MHD	0.01	8.8710e-003
tblFleetMix	MHD	0.01	8.8710e-003
tblFleetMix	OBUS	1.4690e-003	2.3350e-003
tblFleetMix	OBUS	1.4690e-003	2.3350e-003
tblFleetMix	OBUS	1.4690e-003	2.3350e-003
tblFleetMix	SBUS	4.3400e-004	4.2300e-004
tblFleetMix	SBUS	4.3400e-004	4.2300e-004
tblFleetMix	SBUS	4.3400e-004	4.2300e-004
tblFleetMix	UBUS	5.9100e-004	7.6900e-004
tblFleetMix	UBUS	5.9100e-004	7.6900e-004
tblFleetMix	UBUS	5.9100e-004	7.6900e-004
tblGrading	MaterialExported	0.00	1,000.00

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tblLandUse	LandUseSquareFeet	8,800.00	9,510.00
tblLandUse	LandUseSquareFeet	18,000.00	23,190.00
tblLandUse	LotAcreage	0.11	0.00
tblLandUse	LotAcreage	0.20	0.00
tblLandUse	LotAcreage	0.47	0.29
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblTripsAndVMT	HaulingTripNumber	31.00	0.00
tblTripsAndVMT	HaulingTripNumber	125.00	0.00
tblTripsAndVMT	VendorTripNumber	4.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	4.00	0.00
tblVehicleEF	HHD	0.03	0.27
tblVehicleEF	HHD	0.17	0.26
tblVehicleEF	HHD	3.0000e-006	1.0000e-006
tblVehicleEF	HHD	5.25	4.67
tblVehicleEF	HHD	0.93	1.67
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	944.14	782.39
tblVehicleEF	HHD	1,618.63	1,785.76
tblVehicleEF	HHD	0.26	0.29
tblVehicleEF	HHD	0.15	0.13
tblVehicleEF	HHD	0.26	0.29
tblVehicleEF	HHD	3.0000e-006	1.0000e-006
tblVehicleEF	HHD	5.30	4.03

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tblVehicleEF	HHD	3.11	2.65
tblVehicleEF	HHD	2.39	2.71
tblVehicleEF	HHD	3.9570e-003	3.2460e-003
tblVehicleEF	HHD	0.06	0.09
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	2.0000e-006	5.0000e-006
tblVehicleEF	HHD	3.7860e-003	3.1010e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.7110e-003	8.6250e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	2.0000e-006	4.0000e-006
tblVehicleEF	HHD	4.0000e-006	7.3600e-004
tblVehicleEF	HHD	1.8800e-004	2.1400e-004
tblVehicleEF	HHD	0.36	0.29
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.7000e-005	1.6760e-003
tblVehicleEF	HHD	1.4000e-005	3.0000e-006
tblVehicleEF	HHD	8.4280e-003	6.5500e-003
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	4.0000e-006	7.3600e-004
tblVehicleEF	HHD	1.8800e-004	2.1400e-004
tblVehicleEF	HHD	0.42	0.59
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	HHD	0.21	0.30
tblVehicleEF	HHD	8.7000e-005	1.6760e-003
tblVehicleEF	HHD	1.6000e-005	3.0000e-006
tblVehicleEF	LDA	1.5500e-003	1.8160e-003

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tblVehicleEF	LDA	0.04	0.06
tblVehicleEF	LDA	0.49	0.57
tblVehicleEF	LDA	2.11	2.92
tblVehicleEF	LDA	231.09	246.71
tblVehicleEF	LDA	49.25	64.18
tblVehicleEF	LDA	3.7240e-003	3.8360e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.16	0.23
tblVehicleEF	LDA	0.04	6.4230e-003
tblVehicleEF	LDA	1.2500e-003	1.1640e-003
tblVehicleEF	LDA	1.6730e-003	1.9790e-003
tblVehicleEF	LDA	0.02	2.2480e-003
tblVehicleEF	LDA	1.1510e-003	1.0720e-003
tblVehicleEF	LDA	1.5380e-003	1.8200e-003
tblVehicleEF	LDA	0.03	0.25
tblVehicleEF	LDA	0.08	0.08
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	5.8840e-003	7.0240e-003
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.19	0.29
tblVehicleEF	LDA	2.2860e-003	2.4390e-003
tblVehicleEF	LDA	4.8700e-004	6.3400e-004
tblVehicleEF	LDA	0.03	0.25
tblVehicleEF	LDA	0.08	0.08
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	8.5530e-003	0.01
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.21	0.32

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tblVehicleEF	LDT1	2.4400e-003	4.7080e-003
tblVehicleEF	LDT1	0.05	0.09
tblVehicleEF	LDT1	0.64	1.09
tblVehicleEF	LDT1	2.21	4.62
tblVehicleEF	LDT1	271.39	318.31
tblVehicleEF	LDT1	57.89	83.21
tblVehicleEF	LDT1	4.5100e-003	7.5870e-003
tblVehicleEF	LDT1	0.02	0.04
tblVehicleEF	LDT1	0.05	0.10
tblVehicleEF	LDT1	0.18	0.34
tblVehicleEF	LDT1	0.04	8.0370e-003
tblVehicleEF	LDT1	1.5140e-003	1.6830e-003
tblVehicleEF	LDT1	1.9900e-003	2.6340e-003
tblVehicleEF	LDT1	0.02	2.8130e-003
tblVehicleEF	LDT1	1.3930e-003	1.5480e-003
tblVehicleEF	LDT1	1.8300e-003	2.4220e-003
tblVehicleEF	LDT1	0.04	0.46
tblVehicleEF	LDT1	0.10	0.13
tblVehicleEF	LDT1	0.04	0.00
tblVehicleEF	LDT1	0.01	0.02
tblVehicleEF	LDT1	0.06	0.38
tblVehicleEF	LDT1	0.22	0.46
tblVehicleEF	LDT1	2.6860e-003	3.1470e-003
tblVehicleEF	LDT1	5.7300e-004	8.2300e-004
tblVehicleEF	LDT1	0.04	0.46
tblVehicleEF	LDT1	0.10	0.13
tblVehicleEF	LDT1	0.04	0.00
tblVehicleEF	LDT1	0.01	0.03
tblVehicleEF	LDT1	0.06	0.38

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tblVehicleEF	LDT1	0.24	0.51
tblVehicleEF	LDT2	2.1380e-003	2.1100e-003
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.59	0.64
tblVehicleEF	LDT2	2.61	3.21
tblVehicleEF	LDT2	285.14	327.47
tblVehicleEF	LDT2	61.30	83.04
tblVehicleEF	LDT2	4.5260e-003	4.6930e-003
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.04	0.05
tblVehicleEF	LDT2	0.21	0.27
tblVehicleEF	LDT2	0.04	7.6930e-003
tblVehicleEF	LDT2	1.3550e-003	1.2500e-003
tblVehicleEF	LDT2	1.7390e-003	2.0170e-003
tblVehicleEF	LDT2	0.02	2.6930e-003
tblVehicleEF	LDT2	1.2470e-003	1.1500e-003
tblVehicleEF	LDT2	1.5990e-003	1.8550e-003
tblVehicleEF	LDT2	0.03	0.19
tblVehicleEF	LDT2	0.08	0.06
tblVehicleEF	LDT2	0.04	0.00
tblVehicleEF	LDT2	8.2710e-003	8.0290e-003
tblVehicleEF	LDT2	0.05	0.15
tblVehicleEF	LDT2	0.24	0.32
tblVehicleEF	LDT2	2.8210e-003	3.2370e-003
tblVehicleEF	LDT2	6.0700e-004	8.2100e-004
tblVehicleEF	LDT2	0.03	0.19
tblVehicleEF	LDT2	0.08	0.06
tblVehicleEF	LDT2	0.04	0.00
tblVehicleEF	LDT2	0.01	0.01

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tblVehicleEF	LDT2	0.05	0.15
tblVehicleEF	LDT2	0.26	0.35
tblVehicleEF	LHD1	4.8690e-003	5.3230e-003
tblVehicleEF	LHD1	6.2330e-003	5.7120e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.18	0.20
tblVehicleEF	LHD1	0.54	0.73
tblVehicleEF	LHD1	1.00	2.42
tblVehicleEF	LHD1	8.66	8.42
tblVehicleEF	LHD1	766.61	763.92
tblVehicleEF	LHD1	11.40	19.31
tblVehicleEF	LHD1	7.2200e-004	5.7700e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.05	0.04
tblVehicleEF	LHD1	0.39	0.40
tblVehicleEF	LHD1	0.27	0.41
tblVehicleEF	LHD1	8.3600e-004	6.1000e-004
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	9.7710e-003	9.2850e-003
tblVehicleEF	LHD1	7.3860e-003	9.2260e-003
tblVehicleEF	LHD1	2.3100e-004	1.8200e-004
tblVehicleEF	LHD1	8.0000e-004	5.8400e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.4430e-003	2.3210e-003
tblVehicleEF	LHD1	7.0200e-003	8.7890e-003
tblVehicleEF	LHD1	2.1200e-004	1.6700e-004
tblVehicleEF	LHD1	1.1350e-003	0.09
tblVehicleEF	LHD1	0.05	0.02

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tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	7.2100e-004	0.00
tblVehicleEF	LHD1	0.08	0.06
tblVehicleEF	LHD1	0.15	0.13
tblVehicleEF	LHD1	0.06	0.10
tblVehicleEF	LHD1	8.4000e-005	8.2000e-005
tblVehicleEF	LHD1	7.4860e-003	7.4700e-003
tblVehicleEF	LHD1	1.1300e-004	1.9100e-004
tblVehicleEF	LHD1	1.1350e-003	0.09
tblVehicleEF	LHD1	0.05	0.02
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	7.2100e-004	0.00
tblVehicleEF	LHD1	0.09	0.07
tblVehicleEF	LHD1	0.15	0.13
tblVehicleEF	LHD1	0.06	0.11
tblVehicleEF	LHD2	3.0260e-003	3.1050e-003
tblVehicleEF	LHD2	5.6680e-003	5.3750e-003
tblVehicleEF	LHD2	6.5810e-003	0.01
tblVehicleEF	LHD2	0.14	0.15
tblVehicleEF	LHD2	0.47	0.46
tblVehicleEF	LHD2	0.59	1.37
tblVehicleEF	LHD2	13.42	13.16
tblVehicleEF	LHD2	742.79	804.88
tblVehicleEF	LHD2	7.75	10.45
tblVehicleEF	LHD2	1.6540e-003	1.5600e-003
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.08	0.07
tblVehicleEF	LHD2	0.43	0.53

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tblVehicleEF	LHD2	0.16	0.24
tblVehicleEF	LHD2	1.3960e-003	1.3090e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.2500e-004	9.1000e-005
tblVehicleEF	LHD2	1.3360e-003	1.2520e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.6840e-003	2.6480e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	1.1500e-004	8.4000e-005
tblVehicleEF	LHD2	6.1800e-004	0.05
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.9800e-004	0.00
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.08	0.08
tblVehicleEF	LHD2	0.03	0.06
tblVehicleEF	LHD2	1.2800e-004	1.2600e-004
tblVehicleEF	LHD2	7.1760e-003	7.7600e-003
tblVehicleEF	LHD2	7.7000e-005	1.0300e-004
tblVehicleEF	LHD2	6.1800e-004	0.05
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.9800e-004	0.00
tblVehicleEF	LHD2	0.11	0.10
tblVehicleEF	LHD2	0.08	0.08
tblVehicleEF	LHD2	0.04	0.06
tblVehicleEF	MCY	0.33	0.15

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tblVehicleEF	MCY	0.26	0.17
tblVehicleEF	MCY	18.49	11.05
tblVehicleEF	MCY	9.24	7.75
tblVehicleEF	MCY	212.87	186.93
tblVehicleEF	MCY	60.07	46.09
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	7.5490e-003
tblVehicleEF	MCY	1.15	0.52
tblVehicleEF	MCY	0.27	0.13
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	2.1340e-003	2.0120e-003
tblVehicleEF	MCY	3.1040e-003	3.7080e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	1.9920e-003	1.8810e-003
tblVehicleEF	MCY	2.9110e-003	3.4820e-003
tblVehicleEF	MCY	0.61	3.28
tblVehicleEF	MCY	0.52	3.55
tblVehicleEF	MCY	0.36	0.00
tblVehicleEF	MCY	2.18	0.93
tblVehicleEF	MCY	0.42	3.71
tblVehicleEF	MCY	1.94	1.28
tblVehicleEF	MCY	2.1060e-003	1.8480e-003
tblVehicleEF	MCY	5.9400e-004	4.5600e-004
tblVehicleEF	MCY	0.61	0.08
tblVehicleEF	MCY	0.52	3.55
tblVehicleEF	MCY	0.36	0.00
tblVehicleEF	MCY	2.72	1.13
tblVehicleEF	MCY	0.42	3.71
tblVehicleEF	MCY	2.11	1.39

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tblVehicleEF	MDV	2.2040e-003	2.4060e-003
tblVehicleEF	MDV	0.06	0.08
tblVehicleEF	MDV	0.58	0.66
tblVehicleEF	MDV	2.74	3.34
tblVehicleEF	MDV	342.68	392.51
tblVehicleEF	MDV	72.68	98.90
tblVehicleEF	MDV	5.9130e-003	5.7940e-003
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.04	0.06
tblVehicleEF	MDV	0.23	0.32
tblVehicleEF	MDV	0.04	7.7260e-003
tblVehicleEF	MDV	1.3830e-003	1.2700e-003
tblVehicleEF	MDV	1.7680e-003	2.0650e-003
tblVehicleEF	MDV	0.02	2.7040e-003
tblVehicleEF	MDV	1.2750e-003	1.1700e-003
tblVehicleEF	MDV	1.6260e-003	1.8980e-003
tblVehicleEF	MDV	0.04	0.22
tblVehicleEF	MDV	0.08	0.06
tblVehicleEF	MDV	0.04	0.00
tblVehicleEF	MDV	8.7520e-003	9.6890e-003
tblVehicleEF	MDV	0.05	0.17
tblVehicleEF	MDV	0.27	0.38
tblVehicleEF	MDV	3.3860e-003	3.8780e-003
tblVehicleEF	MDV	7.1900e-004	9.7800e-004
tblVehicleEF	MDV	0.04	0.22
tblVehicleEF	MDV	0.08	0.06
tblVehicleEF	MDV	0.04	0.00
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.05	0.17

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tblVehicleEF	MDV	0.30	0.42
tblVehicleEF	MH	6.1010e-003	9.3180e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.49	0.86
tblVehicleEF	MH	1.85	2.40
tblVehicleEF	MH	1,447.76	1,669.61
tblVehicleEF	MH	17.04	21.87
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	0.95	1.21
tblVehicleEF	MH	0.23	0.28
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	2.4900e-004	3.1100e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.2780e-003	3.3220e-003
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	2.2900e-004	2.8600e-004
tblVehicleEF	MH	0.28	24.03
tblVehicleEF	MH	0.03	6.71
tblVehicleEF	MH	0.12	0.00
tblVehicleEF	MH	0.04	0.06
tblVehicleEF	MH	6.6690e-003	0.16
tblVehicleEF	MH	0.08	0.11
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.6900e-004	2.1600e-004
tblVehicleEF	MH	0.28	24.03
tblVehicleEF	MH	0.03	6.71

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tblVehicleEF	MH	0.12	0.00
tblVehicleEF	MH	0.05	0.08
tblVehicleEF	MH	6.6690e-003	0.16
tblVehicleEF	MH	0.09	0.12
tblVehicleEF	MHD	3.9480e-003	0.01
tblVehicleEF	MHD	1.6080e-003	0.01
tblVehicleEF	MHD	9.9120e-003	0.01
tblVehicleEF	MHD	0.39	0.67
tblVehicleEF	MHD	0.22	0.40
tblVehicleEF	MHD	1.12	1.33
tblVehicleEF	MHD	63.54	150.10
tblVehicleEF	MHD	1,063.89	1,267.25
tblVehicleEF	MHD	9.92	10.76
tblVehicleEF	MHD	9.0030e-003	0.02
tblVehicleEF	MHD	0.13	0.15
tblVehicleEF	MHD	8.2440e-003	8.1870e-003
tblVehicleEF	MHD	0.35	0.86
tblVehicleEF	MHD	1.29	1.10
tblVehicleEF	MHD	1.65	1.32
tblVehicleEF	MHD	2.8000e-004	2.2030e-003
tblVehicleEF	MHD	0.13	0.05
tblVehicleEF	MHD	6.1520e-003	0.01
tblVehicleEF	MHD	1.2100e-004	1.3500e-004
tblVehicleEF	MHD	2.6800e-004	2.1070e-003
tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	5.8790e-003	0.01
tblVehicleEF	MHD	1.1200e-004	1.2400e-004
tblVehicleEF	MHD	2.8800e-004	0.03
tblVehicleEF	MHD	0.02	7.1450e-003

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tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	1.8700e-004	0.00
tblVehicleEF	MHD	0.01	0.04
tblVehicleEF	MHD	0.02	0.06
tblVehicleEF	MHD	0.05	0.06
tblVehicleEF	MHD	6.0300e-004	1.3930e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	9.8000e-005	1.0600e-004
tblVehicleEF	MHD	2.8800e-004	0.03
tblVehicleEF	MHD	0.02	7.1450e-003
tblVehicleEF	MHD	0.03	0.05
tblVehicleEF	MHD	1.8700e-004	0.00
tblVehicleEF	MHD	0.02	0.06
tblVehicleEF	MHD	0.02	0.06
tblVehicleEF	MHD	0.06	0.07
tblVehicleEF	OBUS	6.6710e-003	6.4170e-003
tblVehicleEF	OBUS	2.8040e-003	6.4430e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.61	0.48
tblVehicleEF	OBUS	0.34	0.23
tblVehicleEF	OBUS	1.52	1.10
tblVehicleEF	OBUS	102.35	89.99
tblVehicleEF	OBUS	1,307.86	1,316.74
tblVehicleEF	OBUS	13.17	9.70
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.14	0.17
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.43	0.40
tblVehicleEF	OBUS	1.48	0.74

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tblVehicleEF	OBUS	1.21	1.13
tblVehicleEF	OBUS	1.3800e-004	2.3700e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	7.5690e-003	8.4550e-003
tblVehicleEF	OBUS	1.4400e-004	1.0000e-004
tblVehicleEF	OBUS	1.3200e-004	2.2700e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	7.2290e-003	8.0830e-003
tblVehicleEF	OBUS	1.3200e-004	9.2000e-005
tblVehicleEF	OBUS	7.8300e-004	0.03
tblVehicleEF	OBUS	0.01	8.3470e-003
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	4.0400e-004	0.00
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.07	0.05
tblVehicleEF	OBUS	9.7100e-004	8.4900e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.3000e-004	9.6000e-005
tblVehicleEF	OBUS	7.8300e-004	0.03
tblVehicleEF	OBUS	0.01	8.3470e-003
tblVehicleEF	OBUS	0.06	0.04
tblVehicleEF	OBUS	4.0400e-004	0.00
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.08	0.06
tblVehicleEF	SBUS	0.10	0.09
tblVehicleEF	SBUS	9.3480e-003	0.08
tblVehicleEF	SBUS	9.5380e-003	8.3560e-003

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tblVehicleEF	SBUS	3.67	2.26
tblVehicleEF	SBUS	0.86	1.50
tblVehicleEF	SBUS	1.46	1.21
tblVehicleEF	SBUS	365.45	203.37
tblVehicleEF	SBUS	990.47	973.16
tblVehicleEF	SBUS	7.49	5.80
tblVehicleEF	SBUS	0.05	0.03
tblVehicleEF	SBUS	0.11	0.11
tblVehicleEF	SBUS	7.4410e-003	5.4090e-003
tblVehicleEF	SBUS	3.26	1.43
tblVehicleEF	SBUS	4.48	2.76
tblVehicleEF	SBUS	0.70	0.46
tblVehicleEF	SBUS	3.8180e-003	1.5180e-003
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	1.1800e-004	7.5000e-005
tblVehicleEF	SBUS	3.6530e-003	1.4510e-003
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.5480e-003	2.5240e-003
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	1.0800e-004	6.9000e-005
tblVehicleEF	SBUS	6.1300e-004	0.05
tblVehicleEF	SBUS	7.7700e-003	0.01
tblVehicleEF	SBUS	0.44	0.26
tblVehicleEF	SBUS	2.9600e-004	0.00
tblVehicleEF	SBUS	0.10	0.08
tblVehicleEF	SBUS	0.01	0.04
tblVehicleEF	SBUS	0.05	0.05

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tblVehicleEF	SBUS	3.4950e-003	1.8640e-003
tblVehicleEF	SBUS	9.5210e-003	9.1220e-003
tblVehicleEF	SBUS	7.4000e-005	5.7000e-005
tblVehicleEF	SBUS	6.1300e-004	0.05
tblVehicleEF	SBUS	7.7700e-003	0.01
tblVehicleEF	SBUS	0.64	0.41
tblVehicleEF	SBUS	2.9600e-004	0.00
tblVehicleEF	SBUS	0.12	0.18
tblVehicleEF	SBUS	0.01	0.04
tblVehicleEF	SBUS	0.06	0.05
tblVehicleEF	UBUS	1.52	0.55
tblVehicleEF	UBUS	0.01	6.4790e-003
tblVehicleEF	UBUS	11.42	6.29
tblVehicleEF	UBUS	0.83	0.86
tblVehicleEF	UBUS	1,603.68	1,063.17
tblVehicleEF	UBUS	9.21	5.61
tblVehicleEF	UBUS	0.26	0.16
tblVehicleEF	UBUS	7.2150e-003	9.6970e-003
tblVehicleEF	UBUS	0.69	0.25
tblVehicleEF	UBUS	0.10	0.07
tblVehicleEF	UBUS	0.08	0.14
tblVehicleEF	UBUS	0.03	0.05
tblVehicleEF	UBUS	4.9940e-003	4.6870e-003
tblVehicleEF	UBUS	5.3000e-005	2.2000e-005
tblVehicleEF	UBUS	0.03	0.05
tblVehicleEF	UBUS	7.8010e-003	0.01
tblVehicleEF	UBUS	4.7760e-003	4.4790e-003
tblVehicleEF	UBUS	4.9000e-005	2.1000e-005
tblVehicleEF	UBUS	5.3200e-004	0.02

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tblVehicleEF	UBUS	9.6610e-003	6.9710e-003
tblVehicleEF	UBUS	4.1000e-004	0.00
tblVehicleEF	UBUS	0.02	0.05
tblVehicleEF	UBUS	3.6080e-003	0.01
tblVehicleEF	UBUS	0.06	0.02
tblVehicleEF	UBUS	0.01	8.5370e-003
tblVehicleEF	UBUS	9.1000e-005	5.5000e-005
tblVehicleEF	UBUS	5.3200e-004	0.02
tblVehicleEF	UBUS	9.6610e-003	6.9710e-003
tblVehicleEF	UBUS	4.1000e-004	0.00
tblVehicleEF	UBUS	1.55	0.61
tblVehicleEF	UBUS	3.6080e-003	0.01
tblVehicleEF	UBUS	0.07	0.03
tblVehicleTrips	WD_TR	9.74	16.19
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	NumberCatalytic	0.36	0.00
tblWoodstoves	NumberNoncatalytic	0.36	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0231	0.2337	0.2367	3.8000e-004	8.9600e-003	0.0122	0.0211	3.1100e-003	0.0113	0.0144	0.0000	33.6378	33.6378	0.0102	0.0000	33.8917
2023	0.2081	0.1808	0.2060	3.3000e-004	0.0000	9.0500e-003	9.0500e-003	0.0000	8.4000e-003	8.4000e-003	0.0000	28.9531	28.9531	8.6200e-003	0.0000	29.1685
Maximum	**0.2081**	**0.2337**	**0.2367**	**3.8000e-004**	**8.9600e-003**	**0.0122**	**0.0211**	**3.1100e-003**	**0.0113**	**0.0144**	**0.0000**	**33.6378**	**33.6378**	**0.0102**	**0.0000**	**33.8917**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	7.8500e-003	0.1485	0.2640	3.8000e-004	4.0300e-003	6.2000e-004	4.6500e-003	1.4000e-003	6.2000e-004	2.0200e-003	0.0000	33.6377	33.6377	0.0102	0.0000	33.8916
2023	0.1962	0.1281	0.2267	3.3000e-004	0.0000	5.2000e-004	5.2000e-004	0.0000	5.2000e-004	5.2000e-004	0.0000	28.9531	28.9531	8.6200e-003	0.0000	29.1684
Maximum	**0.1962**	**0.1485**	**0.2640**	**3.8000e-004**	**4.0300e-003**	**6.2000e-004**	**4.6500e-003**	**1.4000e-003**	**6.2000e-004**	**2.0200e-003**	**0.0000**	**33.6377**	**33.6377**	**0.0102**	**0.0000**	**33.8916**

	ROG	NOx	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

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Percent Reduction	**11.77**	**33.26**	**-10.83**	**0.00**	**55.02**	**94.63**	**82.88**	**54.98**	**94.20**	**88.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	10-3-2022	1-2-2023	0.2568	0.1562
2	1-3-2023	4-2-2023	0.3834	0.3205
		Highest	0.3834	0.3205

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	0.1323	1.5400e-003	0.1338	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2188	0.2188	2.1000e-004	0.0000	0.2241
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0785	0.0524	0.5283	1.2900e-003	0.1167	8.1000e-004	0.1175	0.0291	7.5000e-004	0.0298	0.0000	118.7132	118.7132	6.1100e-003	4.9100e-003	120.3292
Waste						0.0000	0.0000		0.0000	0.0000	2.5577	0.0000	2.5577	0.1512	0.0000	6.3366
Water						0.0000	0.0000		0.0000	0.0000	0.7073	0.0000	0.7073	2.4300e-003	1.5400e-003	1.2266
Total	**0.2108**	**0.0539**	**0.6621**	**1.3000e-003**	**0.1167**	**1.5500e-003**	**0.1183**	**0.0291**	**1.4900e-003**	**0.0306**	**3.2650**	**118.9320**	**122.1970**	**0.1599**	**6.4500e-003**	**128.1164**

Mitigated Operational

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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	0.1323	1.5400e-003	0.1338	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2188	0.2188	2.1000e-004	0.0000	0.2241
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0785	0.0524	0.5283	1.2900e-003	0.1167	8.1000e-004	0.1175	0.0291	7.5000e-004	0.0298	0.0000	118.7132	118.7132	6.1100e-003	4.9100e-003	120.3292
Waste						0.0000	0.0000		0.0000	0.0000	2.5577	0.0000	2.5577	0.1512	0.0000	6.3366
Water						0.0000	0.0000		0.0000	0.0000	0.7073	0.0000	0.7073	2.4300e-003	1.5400e-003	1.2266
Total	**0.2108**	**0.0539**	**0.6621**	**1.3000e-003**	**0.1167**	**1.5500e-003**	**0.1183**	**0.0291**	**1.4900e-003**	**0.0306**	**3.2650**	**118.9320**	**122.1970**	**0.1599**	**6.4500e-003**	**128.1164**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/3/2022	10/14/2022	5	10	
2	Site Preparation	Site Preparation	10/15/2022	10/17/2022	5	1	
3	Grading	Grading	10/18/2022	10/19/2022	5	2	
4	Trenching	Trenching	10/18/2022	10/19/2022	5	2	
5	Building Construction	Building Construction	10/20/2022	3/8/2023	5	100	
6	Paving	Paving	3/9/2023	3/15/2023	5	5	
7	Architectural Coating	Architectural Coating	3/16/2023	3/22/2023	5	5	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 46,960; Residential Outdoor: 15,653; Non-Residential Indoor: 6,975; Non-Residential Outdoor: 2,325; Striped Parking Area: 571

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	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	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	4	6.00	78	0.48

Trips and VMT

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	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
Paving	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.3200e-003	0.0000	3.3200e-003	5.0000e-004	0.0000	5.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5500e-003	0.0321	0.0374	6.0000e-005		1.6900e-003	1.6900e-003		1.6100e-003	1.6100e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	**3.5500e-003**	**0.0321**	**0.0374**	**6.0000e-005**	**3.3200e-003**	**1.6900e-003**	**5.0100e-003**	**5.0000e-004**	**1.6100e-003**	**2.1100e-003**	**0.0000**	**5.2068**	**5.2068**	**9.6000e-004**	**0.0000**	**5.2308**

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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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					1.5000e-003	0.0000	1.5000e-003	2.3000e-004	0.0000	2.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1800e-003	0.0227	0.0397	6.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	**1.1800e-003**	**0.0227**	**0.0397**	**6.0000e-005**	**1.5000e-003**	**9.0000e-005**	**1.5900e-003**	**2.3000e-004**	**9.0000e-005**	**3.2000e-004**	**0.0000**	**5.2068**	**5.2068**	**9.6000e-004**	**0.0000**	**5.2308**

Mitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-004	3.4700e-003	1.9800e-003	0.0000		1.3000e-004	1.3000e-004		1.2000e-004	1.2000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4310
Total	**2.9000e-004**	**3.4700e-003**	**1.9800e-003**	**0.0000**	**2.7000e-004**	**1.3000e-004**	**4.0000e-004**	**3.0000e-005**	**1.2000e-004**	**1.5000e-004**	**0.0000**	**0.4275**	**0.4275**	**1.4000e-004**	**0.0000**	**0.4310**

Unmitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-005	1.5500e-003	2.9300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4310
Total	**9.0000e-005**	**1.5500e-003**	**2.9300e-003**	**0.0000**	**1.2000e-004**	**1.0000e-005**	**1.3000e-004**	**1.0000e-005**	**1.0000e-005**	**2.0000e-005**	**0.0000**	**0.4275**	**0.4275**	**1.4000e-004**	**0.0000**	**0.4310**

Mitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.3700e-003	0.0000	5.3700e-003	2.5800e-003	0.0000	2.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0800e-003	0.0120	5.9400e-003	1.0000e-005		5.2000e-004	5.2000e-004		4.8000e-004	4.8000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2482
Total	**1.0800e-003**	**0.0120**	**5.9400e-003**	**1.0000e-005**	**5.3700e-003**	**5.2000e-004**	**5.8900e-003**	**2.5800e-003**	**4.8000e-004**	**3.0600e-003**	**0.0000**	**1.2381**	**1.2381**	**4.0000e-004**	**0.0000**	**1.2482**

Unmitigated Construction Off-Site

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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					2.4200e-003	0.0000	2.4200e-003	1.1600e-003	0.0000	1.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5000e-004	4.1800e-003	8.0800e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2482
Total	**2.5000e-004**	**4.1800e-003**	**8.0800e-003**	**1.0000e-005**	**2.4200e-003**	**2.0000e-005**	**2.4400e-003**	**1.1600e-003**	**2.0000e-005**	**1.1800e-003**	**0.0000**	**1.2381**	**1.2381**	**4.0000e-004**	**0.0000**	**1.2482**

Mitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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 - 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	3.7000e-004	3.4500e-003	5.4900e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.6000e-004	1.6000e-004	0.0000	0.7269	0.7269	2.4000e-004	0.0000	0.7328
Total	**3.7000e-004**	**3.4500e-003**	**5.4900e-003**	**1.0000e-005**		**1.8000e-004**	**1.8000e-004**		**1.6000e-004**	**1.6000e-004**	**0.0000**	**0.7269**	**0.7269**	**2.4000e-004**	**0.0000**	**0.7328**

Unmitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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	1.3000e-004	3.6300e-003	6.2600e-003	1.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.7269	0.7269	2.4000e-004	0.0000	0.7328
Total	**1.3000e-004**	**3.6300e-003**	**6.2600e-003**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.7269**	**0.7269**	**2.4000e-004**	**0.0000**	**0.7328**

Mitigated Construction Off-Site

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

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Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	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 - 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	0.0178	0.1827	0.1860	3.0000e-004		9.6700e-003	9.6700e-003		8.9000e-003	8.9000e-003	0.0000	26.0384	26.0384	8.4200e-003	0.0000	26.2489
Total	**0.0178**	**0.1827**	**0.1860**	**3.0000e-004**		**9.6700e-003**	**9.6700e-003**		**8.9000e-003**	**8.9000e-003**	**0.0000**	**26.0384**	**26.0384**	**8.4200e-003**	**0.0000**	**26.2489**

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					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	6.2000e-003	0.1165	0.2070	3.0000e-004		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	26.0384	26.0384	8.4200e-003	0.0000	26.2489
Total	**6.2000e-003**	**0.1165**	**0.2070**	**3.0000e-004**		**4.8000e-004**	**4.8000e-004**		**4.8000e-004**	**4.8000e-004**	**0.0000**	**26.0384**	**26.0384**	**8.4200e-003**	**0.0000**	**26.2489**

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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 - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0152	0.1541	0.1703	2.7000e-004		7.6900e-003	7.6900e-003		7.0700e-003	7.0700e-003	0.0000	24.0500	24.0500	7.7800e-003	0.0000	24.2445
Total	**0.0152**	**0.1541**	**0.1703**	**2.7000e-004**		**7.6900e-003**	**7.6900e-003**		**7.0700e-003**	**7.0700e-003**	**0.0000**	**24.0500**	**24.0500**	**7.7800e-003**	**0.0000**	**24.2445**

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

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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	5.7200e-003	0.1075	0.1911	2.7000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.0500	24.0500	7.7800e-003	0.0000	24.2445
Total	**5.7200e-003**	**0.1075**	**0.1911**	**2.7000e-004**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**24.0500**	**24.0500**	**7.7800e-003**	**0.0000**	**24.2445**

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5300e-003	0.0138	0.0176	3.0000e-005		6.6000e-004	6.6000e-004		6.2000e-004	6.2000e-004	0.0000	2.3498	2.3498	6.8000e-004	0.0000	2.3669
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.5300e-003**	**0.0138**	**0.0176**	**3.0000e-005**		**6.6000e-004**	**6.6000e-004**		**6.2000e-004**	**6.2000e-004**	**0.0000**	**2.3498**	**2.3498**	**6.8000e-004**	**0.0000**	**2.3669**

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	4.1000e-004	0.0100	0.0173	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.3498	2.3498	6.8000e-004	0.0000	2.3669
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.1000e-004**	**0.0100**	**0.0173**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.3498**	**2.3498**	**6.8000e-004**	**0.0000**	**2.3669**

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1895					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.1914**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

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

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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	0.1895					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4000e-004	0.0106	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.1900**	**0.0106**	**0.0183**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

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

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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	0.0785	0.0524	0.5283	1.2900e-003	0.1167	8.1000e-004	0.1175	0.0291	7.5000e-004	0.0298	0.0000	118.7132	118.7132	6.1100e-003	4.9100e-003	120.3292
Unmitigated	0.0785	0.0524	0.5283	1.2900e-003	0.1167	8.1000e-004	0.1175	0.0291	7.5000e-004	0.0298	0.0000	118.7132	118.7132	6.1100e-003	4.9100e-003	120.3292

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	97.92	88.38	73.62	214,991	214,991
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	75.28	10.28	3.26	133,126	133,126
Total	173.20	98.66	76.88	348,117	348,117

4.3 Trip Type Information

	Miles	Trip %	Trip Purpose %

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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
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.462730	0.043835	0.266533	0.152565	0.028158	0.006058	0.008871	0.002599	0.002335	0.000769	0.023106	0.000423	0.002018
Enclosed Parking with Elevator	0.462730	0.043835	0.266533	0.152565	0.028158	0.006058	0.008871	0.002599	0.002335	0.000769	0.023106	0.000423	0.002018
General Office Building	0.462730	0.043835	0.266533	0.152565	0.028158	0.006058	0.008871	0.002599	0.002335	0.000769	0.023106	0.000423	0.002018

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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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	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
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
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**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

	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	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
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
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	70056.5	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	51734.4	0.0000	0.0000	0.0000	0.0000
General Office Building	56032.5	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	70056.5	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	51734.4	0.0000	0.0000	0.0000	0.0000
General Office Building	56032.5	0.0000	0.0000	0.0000	0.0000

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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	0.1323	1.5400e-003	0.1338	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2188	0.2188	2.1000e-004	0.0000	0.2241
Unmitigated	0.1323	1.5400e-003	0.1338	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2188	0.2188	2.1000e-004	0.0000	0.2241

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	0.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1093					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0400e-003	1.5400e-003	0.1338	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2188	0.2188	2.1000e-004	0.0000	0.2241
Total	**0.1323**	**1.5400e-003**	**0.1338**	**1.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**0.2188**	**0.2188**	**2.1000e-004**	**0.0000**	**0.2241**

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	0.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1093					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0400e-003	1.5400e-003	0.1338	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2188	0.2188	2.1000e-004	0.0000	0.2241
Total	**0.1323**	**1.5400e-003**	**0.1338**	**1.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**0.2188**	**0.2188**	**2.1000e-004**	**0.0000**	**0.2241**

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.7073	2.4300e-003	1.5400e-003	1.2266
Unmitigated	0.7073	2.4300e-003	1.5400e-003	1.2266

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.17277 / 0.739357	0.4149	1.4300e-003	9.0000e-004	0.7195
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.826462 / 0.506541	0.2924	1.0100e-003	6.4000e-004	0.5071
Total		**0.7073**	**2.4400e-003**	**1.5400e-003**	**1.2266**

Mitigated

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	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.17277 / 0.739357	0.4149	1.4300e-003	9.0000e-004	0.7195
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.826462 / 0.506541	0.2924	1.0100e-003	6.4000e-004	0.5071
Total		**0.7073**	**2.4400e-003**	**1.5400e-003**	**1.2266**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.5577	0.1512	0.0000	6.3366
Unmitigated	2.5577	0.1512	0.0000	6.3366

8.2 Waste by Land Use

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Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	8.28	1.6808	0.0993	0.0000	4.1640
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	4.32	0.8769	0.0518	0.0000	2.1725
Total		**2.5577**	**0.1512**	**0.0000**	**6.3366**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	8.28	1.6808	0.0993	0.0000	4.1640
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	4.32	0.8769	0.0518	0.0000	2.1725
Total		**2.5577**	**0.1512**	**0.0000**	**6.3366**

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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

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	4.65	1000sqft	0.00	4,650.00	0
Enclosed Parking with Elevator	22.00	Space	0.00	9,510.00	0
Apartments Mid Rise	18.00	Dwelling Unit	0.29	23,190.00	51

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2030
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Applicant provided unit amounts, acreage, and square footage

Construction Phase - CalEEMod defaults used.

Off-road Equipment - Applicant provided equipment info

Off-road Equipment - Default equipment information assumed

Off-road Equipment - Default equipment information assumed

Off-road Equipment - Default equipment information assumed

Off-road Equipment - Default equipment information assumed

Off-road Equipment - Default equipment information assumed

Off-road Equipment - Default equipment information assumed

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Trips and VMT - All trips entered into EMFAC2021

Demolition -

Grading -

Vehicle Trips - Weekday general office building trip rate provided by AECOM traffic study

Vehicle Emission Factors - Emission factors from EMFAC2021

Woodstoves - No hearths

Water And Wastewater - 100% aerobic

Construction Off-road Equipment Mitigation - All equipment t4i, BMP

Fleet Mix - Fleet mix from EMFAC2021

Energy Use - San mateo nat gas reach code.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	NT24NG	1.01	0.00
tblEnergyUse	T24E	90.83	96.49
tblEnergyUse	T24NG	5,828.01	0.00
tblEnergyUse	T24NG	18.14	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	2.70	0.00
tblFireplaces	NumberNoFireplace	0.72	0.00
tblFireplaces	NumberWood	3.06	0.00
tblFleetMix	HHD	1.7910e-003	2.3620e-003
tblFleetMix	HHD	1.7910e-003	2.3620e-003
tblFleetMix	HHD	1.7910e-003	2.3620e-003
tblFleetMix	LDA	0.43	0.39
tblFleetMix	LDA	0.43	0.39
tblFleetMix	LDA	0.43	0.39
tblFleetMix	LDT1	0.08	0.04
tblFleetMix	LDT1	0.08	0.04
tblFleetMix	LDT1	0.08	0.04
tblFleetMix	LDT2	0.25	0.31
tblFleetMix	LDT2	0.25	0.31
tblFleetMix	LDT2	0.25	0.31

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tblFleetMix	LHD1	0.03	0.03
tblFleetMix	LHD1	0.03	0.03
tblFleetMix	LHD1	0.03	0.03
tblFleetMix	LHD2	7.1360e-003	7.4140e-003
tblFleetMix	LHD2	7.1360e-003	7.4140e-003
tblFleetMix	LHD2	7.1360e-003	7.4140e-003
tblFleetMix	MCY	0.03	0.02
tblFleetMix	MCY	0.03	0.02
tblFleetMix	MCY	0.03	0.02
tblFleetMix	MDV	0.16	0.18
tblFleetMix	MDV	0.16	0.18
tblFleetMix	MDV	0.16	0.18
tblFleetMix	MH	2.9170e-003	2.1460e-003
tblFleetMix	MH	2.9170e-003	2.1460e-003
tblFleetMix	MH	2.9170e-003	2.1460e-003
tblFleetMix	MHD	0.01	8.2620e-003
tblFleetMix	MHD	0.01	8.2620e-003
tblFleetMix	MHD	0.01	8.2620e-003
tblFleetMix	OBUS	1.3500e-003	2.2040e-003
tblFleetMix	OBUS	1.3500e-003	2.2040e-003
tblFleetMix	OBUS	1.3500e-003	2.2040e-003
tblFleetMix	SBUS	4.2100e-004	3.9400e-004
tblFleetMix	SBUS	4.2100e-004	3.9400e-004
tblFleetMix	SBUS	4.2100e-004	3.9400e-004
tblFleetMix	UBUS	4.9600e-004	6.4500e-004
tblFleetMix	UBUS	4.9600e-004	6.4500e-004
tblFleetMix	UBUS	4.9600e-004	6.4500e-004
tblGrading	MaterialExported	0.00	1,000.00
tblLandUse	LandUseSquareFeet	8,800.00	9,510.00

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tblLandUse	LandUseSquareFeet	18,000.00	23,190.00
tblLandUse	LotAcreage	0.11	0.00
tblLandUse	LotAcreage	0.20	0.00
tblLandUse	LotAcreage	0.47	0.29
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblTripsAndVMT	HaulingTripNumber	31.00	0.00
tblTripsAndVMT	HaulingTripNumber	125.00	0.00
tblTripsAndVMT	VendorTripNumber	4.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	4.00	0.00
tblVehicleEF	HHD	0.04	0.23
tblVehicleEF	HHD	0.19	0.18
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	HHD	5.46	4.57
tblVehicleEF	HHD	1.06	1.44
tblVehicleEF	HHD	0.04	0.02
tblVehicleEF	HHD	860.08	692.39
tblVehicleEF	HHD	1,405.74	1,514.61
tblVehicleEF	HHD	0.35	0.20
tblVehicleEF	HHD	0.14	0.11
tblVehicleEF	HHD	0.23	0.24
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	HHD	5.01	3.57
tblVehicleEF	HHD	2.73	1.87

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tblVehicleEF	HHD	2.40	2.65
tblVehicleEF	HHD	2.7380e-003	2.0820e-003
tblVehicleEF	HHD	0.06	0.09
tblVehicleEF	HHD	0.04	0.03
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	3.0000e-006	2.0000e-006
tblVehicleEF	HHD	2.6200e-003	1.9850e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.7570e-003	8.6350e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	3.0000e-006	2.0000e-006
tblVehicleEF	HHD	6.0000e-006	2.3600e-004
tblVehicleEF	HHD	3.2200e-004	6.5000e-005
tblVehicleEF	HHD	0.36	0.27
tblVehicleEF	HHD	5.0000e-006	0.00
tblVehicleEF	HHD	0.03	0.02
tblVehicleEF	HHD	1.5200e-004	3.9100e-004
tblVehicleEF	HHD	1.4000e-005	2.0000e-006
tblVehicleEF	HHD	7.5950e-003	5.6170e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	3.0000e-006	2.0000e-006
tblVehicleEF	HHD	6.0000e-006	2.3600e-004
tblVehicleEF	HHD	3.2200e-004	6.5000e-005
tblVehicleEF	HHD	0.43	0.53
tblVehicleEF	HHD	5.0000e-006	0.00
tblVehicleEF	HHD	0.23	0.21
tblVehicleEF	HHD	1.5200e-004	3.9100e-004
tblVehicleEF	HHD	1.6000e-005	2.0000e-006
tblVehicleEF	LDA	8.5200e-004	1.0910e-003

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tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.38	0.43
tblVehicleEF	LDA	1.70	2.12
tblVehicleEF	LDA	197.85	218.14
tblVehicleEF	LDA	41.93	56.38
tblVehicleEF	LDA	2.9620e-003	2.8890e-003
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.12	0.18
tblVehicleEF	LDA	0.04	6.3460e-003
tblVehicleEF	LDA	8.6000e-004	8.0000e-004
tblVehicleEF	LDA	1.2290e-003	1.4710e-003
tblVehicleEF	LDA	0.02	2.2210e-003
tblVehicleEF	LDA	7.9200e-004	7.3600e-004
tblVehicleEF	LDA	1.1300e-003	1.3530e-003
tblVehicleEF	LDA	0.02	0.21
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.02	0.00
tblVehicleEF	LDA	2.9250e-003	3.8520e-003
tblVehicleEF	LDA	0.03	0.16
tblVehicleEF	LDA	0.12	0.20
tblVehicleEF	LDA	1.9570e-003	2.1560e-003
tblVehicleEF	LDA	4.1500e-004	5.5700e-004
tblVehicleEF	LDA	0.02	0.21
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.02	0.00
tblVehicleEF	LDA	4.2480e-003	5.6170e-003
tblVehicleEF	LDA	0.03	0.16
tblVehicleEF	LDA	0.13	0.22

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tblVehicleEF	LDT1	1.1990e-003	2.2150e-003
tblVehicleEF	LDT1	0.03	0.06
tblVehicleEF	LDT1	0.44	0.66
tblVehicleEF	LDT1	1.81	2.84
tblVehicleEF	LDT1	236.05	285.53
tblVehicleEF	LDT1	50.08	72.58
tblVehicleEF	LDT1	3.1790e-003	4.5000e-003
tblVehicleEF	LDT1	0.02	0.03
tblVehicleEF	LDT1	0.03	0.05
tblVehicleEF	LDT1	0.14	0.23
tblVehicleEF	LDT1	0.04	7.9630e-003
tblVehicleEF	LDT1	9.9000e-004	1.0380e-003
tblVehicleEF	LDT1	1.3910e-003	1.7650e-003
tblVehicleEF	LDT1	0.02	2.7870e-003
tblVehicleEF	LDT1	9.1100e-004	9.5500e-004
tblVehicleEF	LDT1	1.2790e-003	1.6230e-003
tblVehicleEF	LDT1	0.03	0.31
tblVehicleEF	LDT1	0.07	0.08
tblVehicleEF	LDT1	0.03	0.00
tblVehicleEF	LDT1	4.4220e-003	9.0470e-003
tblVehicleEF	LDT1	0.05	0.24
tblVehicleEF	LDT1	0.13	0.27
tblVehicleEF	LDT1	2.3360e-003	2.8230e-003
tblVehicleEF	LDT1	4.9600e-004	7.1700e-004
tblVehicleEF	LDT1	0.03	0.31
tblVehicleEF	LDT1	0.07	0.08
tblVehicleEF	LDT1	0.03	0.00
tblVehicleEF	LDT1	6.4520e-003	0.01
tblVehicleEF	LDT1	0.05	0.24

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tblVehicleEF	LDT1	0.14	0.29
tblVehicleEF	LDT2	1.3110e-003	1.4510e-003
tblVehicleEF	LDT2	0.04	0.05
tblVehicleEF	LDT2	0.47	0.52
tblVehicleEF	LDT2	2.22	2.46
tblVehicleEF	LDT2	241.10	296.13
tblVehicleEF	LDT2	51.42	74.14
tblVehicleEF	LDT2	3.4280e-003	3.6740e-003
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.15	0.21
tblVehicleEF	LDT2	0.04	7.7670e-003
tblVehicleEF	LDT2	9.8200e-004	8.8300e-004
tblVehicleEF	LDT2	1.3140e-003	1.4990e-003
tblVehicleEF	LDT2	0.02	2.7180e-003
tblVehicleEF	LDT2	9.0400e-004	8.1200e-004
tblVehicleEF	LDT2	1.2080e-003	1.3780e-003
tblVehicleEF	LDT2	0.03	0.16
tblVehicleEF	LDT2	0.06	0.04
tblVehicleEF	LDT2	0.03	0.00
tblVehicleEF	LDT2	4.7820e-003	5.1450e-003
tblVehicleEF	LDT2	0.05	0.12
tblVehicleEF	LDT2	0.16	0.22
tblVehicleEF	LDT2	2.3850e-003	2.9270e-003
tblVehicleEF	LDT2	5.0900e-004	7.3300e-004
tblVehicleEF	LDT2	0.03	0.16
tblVehicleEF	LDT2	0.06	0.04
tblVehicleEF	LDT2	0.03	0.00
tblVehicleEF	LDT2	6.9400e-003	7.4940e-003

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tblVehicleEF	LDT2	0.05	0.12
tblVehicleEF	LDT2	0.17	0.24
tblVehicleEF	LHD1	3.9860e-003	4.1000e-003
tblVehicleEF	LHD1	4.4850e-003	2.8900e-003
tblVehicleEF	LHD1	7.3910e-003	0.01
tblVehicleEF	LHD1	0.18	0.18
tblVehicleEF	LHD1	0.40	0.47
tblVehicleEF	LHD1	0.86	2.16
tblVehicleEF	LHD1	8.08	7.48
tblVehicleEF	LHD1	689.79	647.78
tblVehicleEF	LHD1	9.94	16.36
tblVehicleEF	LHD1	7.0800e-004	5.3200e-004
tblVehicleEF	LHD1	0.04	0.03
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.04	0.03
tblVehicleEF	LHD1	0.18	0.18
tblVehicleEF	LHD1	0.20	0.30
tblVehicleEF	LHD1	9.1600e-004	6.1700e-004
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	9.8940e-003	9.2640e-003
tblVehicleEF	LHD1	5.8960e-003	6.6480e-003
tblVehicleEF	LHD1	2.0100e-004	1.0400e-004
tblVehicleEF	LHD1	8.7600e-004	5.9000e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.4740e-003	2.3160e-003
tblVehicleEF	LHD1	5.5970e-003	6.3310e-003
tblVehicleEF	LHD1	1.8500e-004	9.6000e-005
tblVehicleEF	LHD1	8.5500e-004	0.06
tblVehicleEF	LHD1	0.04	0.01

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tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	5.9000e-004	0.00
tblVehicleEF	LHD1	0.07	0.04
tblVehicleEF	LHD1	0.14	0.08
tblVehicleEF	LHD1	0.03	0.07
tblVehicleEF	LHD1	7.8000e-005	7.3000e-005
tblVehicleEF	LHD1	6.7280e-003	6.3250e-003
tblVehicleEF	LHD1	9.8000e-005	1.6200e-004
tblVehicleEF	LHD1	8.5500e-004	0.06
tblVehicleEF	LHD1	0.04	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	5.9000e-004	0.00
tblVehicleEF	LHD1	0.08	0.04
tblVehicleEF	LHD1	0.14	0.08
tblVehicleEF	LHD1	0.04	0.07
tblVehicleEF	LHD2	2.4420e-003	2.3110e-003
tblVehicleEF	LHD2	4.9160e-003	3.5820e-003
tblVehicleEF	LHD2	4.1310e-003	7.5520e-003
tblVehicleEF	LHD2	0.13	0.14
tblVehicleEF	LHD2	0.44	0.32
tblVehicleEF	LHD2	0.49	1.19
tblVehicleEF	LHD2	12.62	12.88
tblVehicleEF	LHD2	670.16	684.09
tblVehicleEF	LHD2	6.49	8.64
tblVehicleEF	LHD2	1.6020e-003	1.5980e-003
tblVehicleEF	LHD2	0.06	0.07
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	0.21	0.28

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tblVehicleEF	LHD2	0.12	0.16
tblVehicleEF	LHD2	1.4740e-003	1.4290e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	1.0700e-004	5.0000e-005
tblVehicleEF	LHD2	1.4100e-003	1.3670e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.7060e-003	2.6170e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	9.9000e-005	4.6000e-005
tblVehicleEF	LHD2	4.2300e-004	0.03
tblVehicleEF	LHD2	0.02	8.3390e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.0400e-004	0.00
tblVehicleEF	LHD2	0.09	0.07
tblVehicleEF	LHD2	0.05	0.05
tblVehicleEF	LHD2	0.02	0.04
tblVehicleEF	LHD2	1.2100e-004	1.2300e-004
tblVehicleEF	LHD2	6.4670e-003	6.5820e-003
tblVehicleEF	LHD2	6.4000e-005	8.5000e-005
tblVehicleEF	LHD2	4.2300e-004	0.03
tblVehicleEF	LHD2	0.02	8.3390e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.0400e-004	0.00
tblVehicleEF	LHD2	0.11	0.08
tblVehicleEF	LHD2	0.05	0.05
tblVehicleEF	LHD2	0.02	0.04
tblVehicleEF	MCY	0.32	0.13

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tblVehicleEF	MCY	0.25	0.14
tblVehicleEF	MCY	17.76	9.71
tblVehicleEF	MCY	9.39	7.58
tblVehicleEF	MCY	212.58	185.26
tblVehicleEF	MCY	58.78	39.68
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	5.5840e-003
tblVehicleEF	MCY	1.14	0.47
tblVehicleEF	MCY	0.27	0.09
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	2.2180e-003	2.0690e-003
tblVehicleEF	MCY	3.0130e-003	3.6390e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	2.0680e-003	1.9300e-003
tblVehicleEF	MCY	2.8140e-003	3.4020e-003
tblVehicleEF	MCY	0.61	2.69
tblVehicleEF	MCY	0.49	3.54
tblVehicleEF	MCY	0.36	0.00
tblVehicleEF	MCY	2.13	0.79
tblVehicleEF	MCY	0.39	3.67
tblVehicleEF	MCY	1.89	1.03
tblVehicleEF	MCY	2.1040e-003	1.8310e-003
tblVehicleEF	MCY	5.8200e-004	3.9200e-004
tblVehicleEF	MCY	0.61	0.07
tblVehicleEF	MCY	0.49	3.54
tblVehicleEF	MCY	0.36	0.00
tblVehicleEF	MCY	2.68	0.98
tblVehicleEF	MCY	0.39	3.67
tblVehicleEF	MCY	2.06	1.12

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tblVehicleEF	MDV	1.2400e-003	1.4660e-003
tblVehicleEF	MDV	0.04	0.05
tblVehicleEF	MDV	0.45	0.52
tblVehicleEF	MDV	2.21	2.46
tblVehicleEF	MDV	289.25	352.66
tblVehicleEF	MDV	60.44	87.77
tblVehicleEF	MDV	4.5060e-003	4.1700e-003
tblVehicleEF	MDV	0.02	0.03
tblVehicleEF	MDV	0.02	0.03
tblVehicleEF	MDV	0.15	0.22
tblVehicleEF	MDV	0.04	7.7870e-003
tblVehicleEF	MDV	9.5700e-004	8.5800e-004
tblVehicleEF	MDV	1.2840e-003	1.4690e-003
tblVehicleEF	MDV	0.02	2.7250e-003
tblVehicleEF	MDV	8.8200e-004	7.9000e-004
tblVehicleEF	MDV	1.1810e-003	1.3510e-003
tblVehicleEF	MDV	0.03	0.17
tblVehicleEF	MDV	0.07	0.05
tblVehicleEF	MDV	0.04	0.00
tblVehicleEF	MDV	4.5430e-003	5.3030e-003
tblVehicleEF	MDV	0.05	0.13
tblVehicleEF	MDV	0.16	0.24
tblVehicleEF	MDV	2.8580e-003	3.4850e-003
tblVehicleEF	MDV	5.9800e-004	8.6800e-004
tblVehicleEF	MDV	0.03	0.17
tblVehicleEF	MDV	0.07	0.05
tblVehicleEF	MDV	0.04	0.00
tblVehicleEF	MDV	6.5690e-003	7.7170e-003
tblVehicleEF	MDV	0.05	0.13

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tblVehicleEF	MDV	0.18	0.26
tblVehicleEF	MH	4.0670e-003	4.8170e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.22	0.26
tblVehicleEF	MH	1.59	1.85
tblVehicleEF	MH	1,315.39	1,657.15
tblVehicleEF	MH	15.06	19.91
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	0.84	1.00
tblVehicleEF	MH	0.22	0.25
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	9.1290e-003	0.01
tblVehicleEF	MH	2.2300e-004	2.4800e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.2890e-003	3.3360e-003
tblVehicleEF	MH	8.6970e-003	0.01
tblVehicleEF	MH	2.0500e-004	2.2800e-004
tblVehicleEF	MH	0.16	10.82
tblVehicleEF	MH	0.01	2.82
tblVehicleEF	MH	0.08	0.00
tblVehicleEF	MH	0.03	0.04
tblVehicleEF	MH	2.9870e-003	0.07
tblVehicleEF	MH	0.07	0.08
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.4900e-004	1.9700e-004
tblVehicleEF	MH	0.16	10.82
tblVehicleEF	MH	0.01	2.82

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tblVehicleEF	MH	0.08	0.00
tblVehicleEF	MH	0.04	0.05
tblVehicleEF	MH	2.9870e-003	0.07
tblVehicleEF	MH	0.08	0.09
tblVehicleEF	MHD	3.9010e-003	0.02
tblVehicleEF	MHD	9.3700e-004	9.6240e-003
tblVehicleEF	MHD	8.5280e-003	9.1350e-003
tblVehicleEF	MHD	0.38	0.63
tblVehicleEF	MHD	0.14	0.16
tblVehicleEF	MHD	0.87	0.98
tblVehicleEF	MHD	55.53	130.08
tblVehicleEF	MHD	958.82	1,103.52
tblVehicleEF	MHD	8.66	9.48
tblVehicleEF	MHD	7.8550e-003	0.02
tblVehicleEF	MHD	0.12	0.13
tblVehicleEF	MHD	8.0480e-003	6.8930e-003
tblVehicleEF	MHD	0.29	0.66
tblVehicleEF	MHD	1.31	0.56
tblVehicleEF	MHD	1.67	1.12
tblVehicleEF	MHD	1.1600e-004	6.3600e-004
tblVehicleEF	MHD	0.13	0.04
tblVehicleEF	MHD	6.3200e-003	5.3910e-003
tblVehicleEF	MHD	1.1300e-004	1.1800e-004
tblVehicleEF	MHD	1.1100e-004	6.0800e-004
tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	6.0400e-003	5.1470e-003
tblVehicleEF	MHD	1.0400e-004	1.0900e-004
tblVehicleEF	MHD	2.1500e-004	0.02
tblVehicleEF	MHD	0.01	3.9100e-003

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tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	1.5500e-004	0.00
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	5.2700e-004	1.1950e-003
tblVehicleEF	MHD	9.1510e-003	0.01
tblVehicleEF	MHD	8.6000e-005	9.4000e-005
tblVehicleEF	MHD	2.1500e-004	0.02
tblVehicleEF	MHD	0.01	3.9100e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.5500e-004	0.00
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	OBUS	6.7860e-003	6.9140e-003
tblVehicleEF	OBUS	1.7360e-003	0.01
tblVehicleEF	OBUS	0.01	8.2390e-003
tblVehicleEF	OBUS	0.67	0.50
tblVehicleEF	OBUS	0.22	0.16
tblVehicleEF	OBUS	1.34	0.83
tblVehicleEF	OBUS	104.99	88.87
tblVehicleEF	OBUS	1,195.47	1,192.98
tblVehicleEF	OBUS	11.93	7.62
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.12	0.16
tblVehicleEF	OBUS	0.01	7.5270e-003
tblVehicleEF	OBUS	0.47	0.34
tblVehicleEF	OBUS	1.49	0.65

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tblVehicleEF	OBUS	1.22	1.02
tblVehicleEF	OBUS	1.5600e-004	2.0700e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	8.0770e-003	7.6200e-003
tblVehicleEF	OBUS	1.4600e-004	8.4000e-005
tblVehicleEF	OBUS	1.4900e-004	1.9800e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	7.7140e-003	7.2850e-003
tblVehicleEF	OBUS	1.3400e-004	7.7000e-005
tblVehicleEF	OBUS	6.9700e-004	0.03
tblVehicleEF	OBUS	0.01	6.5600e-003
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	3.8500e-004	0.00
tblVehicleEF	OBUS	0.01	0.02
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.07	0.04
tblVehicleEF	OBUS	9.9600e-004	8.3400e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.1800e-004	7.5000e-005
tblVehicleEF	OBUS	6.9700e-004	0.03
tblVehicleEF	OBUS	0.01	6.5600e-003
tblVehicleEF	OBUS	0.06	0.04
tblVehicleEF	OBUS	3.8500e-004	0.00
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.07	0.05
tblVehicleEF	SBUS	0.16	0.11
tblVehicleEF	SBUS	5.7190e-003	0.07
tblVehicleEF	SBUS	0.01	8.9860e-003

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tblVehicleEF	SBUS	5.81	2.80
tblVehicleEF	SBUS	0.52	0.91
tblVehicleEF	SBUS	2.02	1.22
tblVehicleEF	SBUS	372.76	200.53
tblVehicleEF	SBUS	883.04	857.53
tblVehicleEF	SBUS	11.09	6.59
tblVehicleEF	SBUS	0.04	0.02
tblVehicleEF	SBUS	0.08	0.09
tblVehicleEF	SBUS	0.01	6.2860e-003
tblVehicleEF	SBUS	2.28	1.04
tblVehicleEF	SBUS	2.37	1.45
tblVehicleEF	SBUS	0.99	0.50
tblVehicleEF	SBUS	1.7990e-003	7.5800e-004
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	9.6950e-003	9.8790e-003
tblVehicleEF	SBUS	0.01	7.0920e-003
tblVehicleEF	SBUS	1.8900e-004	9.4000e-005
tblVehicleEF	SBUS	1.7210e-003	7.2300e-004
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.4240e-003	2.4700e-003
tblVehicleEF	SBUS	0.01	6.7620e-003
tblVehicleEF	SBUS	1.7400e-004	8.6000e-005
tblVehicleEF	SBUS	1.0240e-003	0.05
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.71	0.33
tblVehicleEF	SBUS	5.6900e-004	0.00
tblVehicleEF	SBUS	0.06	0.05
tblVehicleEF	SBUS	0.02	0.04
tblVehicleEF	SBUS	0.08	0.05

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tblVehicleEF	SBUS	3.5870e-003	1.8280e-003
tblVehicleEF	SBUS	8.5360e-003	8.0270e-003
tblVehicleEF	SBUS	1.1000e-004	6.5000e-005
tblVehicleEF	SBUS	1.0240e-003	0.05
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	1.03	0.51
tblVehicleEF	SBUS	5.6900e-004	0.00
tblVehicleEF	SBUS	0.07	0.13
tblVehicleEF	SBUS	0.02	0.04
tblVehicleEF	SBUS	0.09	0.06
tblVehicleEF	UBUS	1.75	0.64
tblVehicleEF	UBUS	8.0630e-003	4.5120e-003
tblVehicleEF	UBUS	13.25	7.38
tblVehicleEF	UBUS	0.82	0.83
tblVehicleEF	UBUS	1,616.16	954.90
tblVehicleEF	UBUS	7.49	5.22
tblVehicleEF	UBUS	0.27	0.14
tblVehicleEF	UBUS	5.7250e-003	6.8380e-003
tblVehicleEF	UBUS	0.67	0.21
tblVehicleEF	UBUS	0.07	0.04
tblVehicleEF	UBUS	0.08	0.16
tblVehicleEF	UBUS	0.03	0.06
tblVehicleEF	UBUS	4.9300e-003	3.9500e-003
tblVehicleEF	UBUS	9.1000e-005	2.5000e-005
tblVehicleEF	UBUS	0.03	0.05
tblVehicleEF	UBUS	7.8010e-003	0.02
tblVehicleEF	UBUS	4.7140e-003	3.7730e-003
tblVehicleEF	UBUS	8.3000e-005	2.3000e-005
tblVehicleEF	UBUS	1.3500e-004	0.01

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleEF	UBUS	1.6730e-003	3.4250e-003
tblVehicleEF	UBUS	8.4000e-005	0.00
tblVehicleEF	UBUS	0.03	0.05
tblVehicleEF	UBUS	5.1800e-004	0.01
tblVehicleEF	UBUS	0.04	0.02
tblVehicleEF	UBUS	0.01	7.2300e-003
tblVehicleEF	UBUS	7.4000e-005	5.2000e-005
tblVehicleEF	UBUS	1.3500e-004	0.01
tblVehicleEF	UBUS	1.6730e-003	3.4250e-003
tblVehicleEF	UBUS	8.4000e-005	0.00
tblVehicleEF	UBUS	1.79	0.69
tblVehicleEF	UBUS	5.1800e-004	0.01
tblVehicleEF	UBUS	0.04	0.02
tblVehicleTrips	WD_TR	9.74	16.19
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	NumberCatalytic	0.36	0.00
tblWoodstoves	NumberNoncatalytic	0.36	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.1323	1.5400e-003	0.1335	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2188	0.2188	2.1000e-004	0.0000	0.2240
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0615	0.0360	0.4213	1.1800e-003	0.1168	5.8000e-004	0.1174	0.0291	5.4000e-004	0.0297	0.0000	108.5381	108.5381	4.6200e-003	4.1400e-003	109.8864
Waste						0.0000	0.0000		0.0000	0.0000	2.5577	0.0000	2.5577	0.1512	0.0000	6.3366
Water						0.0000	0.0000		0.0000	0.0000	0.7073	0.0000	0.7073	2.4300e-003	1.5400e-003	1.2266
Total	**0.1938**	**0.0376**	**0.5549**	**1.1900e-003**	**0.1168**	**1.3200e-003**	**0.1181**	**0.0291**	**1.2800e-003**	**0.0304**	**3.2650**	**108.7569**	**112.0219**	**0.1584**	**5.6800e-003**	**117.6736**

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	0.1323	1.5400e-003	0.1335	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2188	0.2188	2.1000e-004	0.0000	0.2240
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mobile	0.0615	0.0360	0.4213	1.1800e-003	0.1168	5.8000e-004	0.1174	0.0291	5.4000e-004	0.0297	0.0000	108.5381	108.5381	4.6200e-003	4.1400e-003	109.8864
Waste						0.0000	0.0000		0.0000	0.0000	2.5577	0.0000	2.5577	0.1512	0.0000	6.3366
Water						0.0000	0.0000		0.0000	0.0000	0.7073	0.0000	0.7073	2.4300e-003	1.5400e-003	1.2266
Total	**0.1938**	**0.0376**	**0.5549**	**1.1900e-003**	**0.1168**	**1.3200e-003**	**0.1181**	**0.0291**	**1.2800e-003**	**0.0304**	**3.2650**	**108.7569**	**112.0219**	**0.1584**	**5.6800e-003**	**117.6736**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0615	0.0360	0.4213	1.1800e-003	0.1168	5.8000e-004	0.1174	0.0291	5.4000e-004	0.0297	0.0000	108.5381	108.5381	4.6200e-003	4.1400e-003	109.8864
Unmitigated	0.0615	0.0360	0.4213	1.1800e-003	0.1168	5.8000e-004	0.1174	0.0291	5.4000e-004	0.0297	0.0000	108.5381	108.5381	4.6200e-003	4.1400e-003	109.8864

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	97.92	88.38	73.62	214,991	214,991
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	75.28	10.28	3.26	133,126	133,126
Total	173.20	98.66	76.88	348,117	348,117

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.392609	0.040642	0.308969	0.177896	0.031644	0.007414	0.008262	0.002362	0.002204	0.000645	0.024811	0.000394	0.002146
Enclosed Parking with Elevator	0.392609	0.040642	0.308969	0.177896	0.031644	0.007414	0.008262	0.002362	0.002204	0.000645	0.024811	0.000394	0.002146
General Office Building	0.392609	0.040642	0.308969	0.177896	0.031644	0.007414	0.008262	0.002362	0.002204	0.000645	0.024811	0.000394	0.002146

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	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
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
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**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

	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	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
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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	70056.5	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	51734.4	0.0000	0.0000	0.0000	0.0000
General Office Building	55986	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	70056.5	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Enclosed Parking with Elevator	51734.4	0.0000	0.0000	0.0000	0.0000
General Office Building	55986	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	0.1323	1.5400e-003	0.1335	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2188	0.2188	2.1000e-004	0.0000	0.2240
Unmitigated	0.1323	1.5400e-003	0.1335	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2188	0.2188	2.1000e-004	0.0000	0.2240

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					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Architectural Coating	0.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1093					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0100e-003	1.5400e-003	0.1335	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2188	0.2188	2.1000e-004	0.0000	0.2240
Total	**0.1323**	**1.5400e-003**	**0.1335**	**1.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**0.2188**	**0.2188**	**2.1000e-004**	**0.0000**	**0.2240**

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	0.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1093					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0100e-003	1.5400e-003	0.1335	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2188	0.2188	2.1000e-004	0.0000	0.2240
Total	**0.1323**	**1.5400e-003**	**0.1335**	**1.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**0.2188**	**0.2188**	**2.1000e-004**	**0.0000**	**0.2240**

7.0 Water Detail

7.1 Mitigation Measures Water

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.7073	2.4300e-003	1.5400e-003	1.2266
Unmitigated	0.7073	2.4300e-003	1.5400e-003	1.2266

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.17277 / 0.739357	0.4149	1.4300e-003	9.0000e-004	0.7195
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.826462 / 0.506541	0.2924	1.0100e-003	6.4000e-004	0.5071
Total		**0.7073**	**2.4400e-003**	**1.5400e-003**	**1.2266**

Mitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.17277 / 0.739357	0.4149	1.4300e-003	9.0000e-004	0.7195
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.826462 / 0.506541	0.2924	1.0100e-003	6.4000e-004	0.5071
Total		**0.7073**	**2.4400e-003**	**1.5400e-003**	**1.2266**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.5577	0.1512	0.0000	6.3366
Unmitigated	2.5577	0.1512	0.0000	6.3366

8.2 Waste by Land Use

Date: 11/4/2021 3:44 PM

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	8.28	1.6808	0.0993	0.0000	4.1640
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	4.32	0.8769	0.0518	0.0000	2.1725
Total		**2.5577**	**0.1512**	**0.0000**	**6.3366**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	8.28	1.6808	0.0993	0.0000	4.1640
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	4.32	0.8769	0.0518	0.0000	2.1725
Total		**2.5577**	**0.1512**	**0.0000**	**6.3366**

Date: 11/4/2021 3:44 PM

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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: EMFAC2021 Calculations

Summary of Construction Traffic Emissions (EMFAC2021)

Pollutants YEAR	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2	CH4	N2O	CO2e
					Tons							*Metric Tons*		
Criteria Pollutants														
2022 & 2023	0.0030	0.0300	0.0404	0.0002	0.0099	0.0016	0.0115	0.0015	0.0007	0.0022	20.4805	0.0020	0.0023	21.2113
Toxic Air Contaminants (1.0 Mile Trip Length)														
2022 & 2023	0.0023	0.0059	0.0130	0.0000	0.0009	0.0001	0.0010	0.0001	0.0001	0.0002	2.1201	0.0004	0.0003	2.2136

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	10	0	100	0	31	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1080	0	620
Site Preparation	5	0	5	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	54	0	0
Grading	8	0	16	0	125	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	172.8	0	2500
Trenching/Foundation	5	0	10	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	108	0	0
Paving	18	0	90	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	972	0	0
Building Construction	18	4	1800	400	100	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	19440	2920	2000
Architectural Coating	4	0	20	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	216	0	0

Number of Days Per Year					
2022 & 2023	10/3/22	3/22/23	171	123	
			171	**123**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	10/3/2022	10/14/2022	5	10
Site Preparation	10/15/2022	10/17/2022	5	1
Grading	10/18/2022	10/19/2022	5	2
Trenching/Foundation	10/18/2022	10/19/2022	5	2
Paving	3/16/2023	3/22/2023	5	5
Building Construction	10/20/2022	3/8/2023	5	100
Architectural Coating	3/9/2023	3/15/2023	5	5

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Con	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PM	PM2.5_RUN	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PM	PM10_PMI	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTSO	ROG_RUNL	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTSO	TOG_RUNL	TOG_DIUR	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
San Mateo	2022	HHDT	Aggregate	Aggregate	Gasoline	4.26179	607.5295	607.5295	0	85.26989	0	4.217209	0	0.00281	0.00146	0	0.000935	0.005	0.031258	0.001588	0	0.001017	0.02	0.089308	2276.876	0	54.98009	0.116906	0	0.000119	0.151563	0	0.000135	0.60109	0	0.000644	0.048478	0.400153	3.469663	0.877108	0	0.000705	0.048478	0.400153	3.469663	0.045	33.53367	0	6.080621	0.022509	0	0.000544
San Mateo	2022	HHDT	Aggregate	Aggregate	Diesel	1289.917	118758.5	118758.5	0	13886.59	0	3.367467	50.13908	2.567805	0.026697	0.041054	0	0.00861	0.031515	0.027904	0.04291	0	0.03444	0.090042	1868.7	8522.619	0	0.001942	0.155104	0	0.294414	1.342742	0	0.041821	1.339355	0	0	0	0	0.04761	3.801601	0	0	0	0	0.186789	0.159005	43.82276	0	0.017695	0.080704	0
San Mateo	2022	HHDT	Aggregate	Aggregate	Natural Ga	144.1612	9768.638	9768.638	0	950.7524	0	1.845139	10.30429	0	0.002051	0.011217	0	0.009	0.058943	0.00223	0.012199	0	0.036	0.168408	1557.751	8370.006	0	3.666383	25.60841	0	0.317558	1.706281	0	0.087249	0.429393	0	0	0	0	3.781534	26.2076	0	0	0	0	0.734123	18.35301	67.58246	0	0	0	0
San Mateo	2022	LDA	Aggregate	Aggregate	Gasoline	240666.4	7995565	7995565	0	1130997	0	0.047702	0	0.275282	0.001241	0	0.002105	0.002	0.002347	0.00135	0	0.002289	0.008	0.006707	282.9533	0	72.26541	0.002546	0	0.077367	0.004869	0	0.033486	0.010142	0	0.368004	0.090257	0.23026	1.365279	0.014797	0	0.402916	0.090257	0.23026	1.365279	0.034582	0.726065	0	3.617602	0.002797	0	0.000714
San Mateo	2022	LDA	Aggregate	Aggregate	Diesel	888.5395	22501.88	22501.88	0	3790.786	0	0.240012	0	0	0.015881	0	0	0.002	0.002391	0.016599	0	0	0.008	0.006831	236.6875	0	0	0.001267	0	0	0.03729	0	0	0.02727	0	0	0	0	0	0.031045	0	0	0	0	0	0.0031	0.330004	0	0	0.002243	0	0
San Mateo	2022	LDA	Aggregate	Aggregate	Electricity	14591.4	568258.7	0	568258.7	72996.66	219394.7	0	0	0	0	0	0	0.002	0.001529	0	0	0	0.008	0.004368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	LDA	Aggregate	Aggregate	Plug-in Hyb	6271.758	249381.9	127562.4	121819.5	25933.72	36793.12	0.003286	0	0.117199	0.000663	0	0.002168	0.002	0.001311	0.000722	0	0.002358	0.008	0.003747	137.9916	0	66.6249	0.00043	0	0.042806	0.00058	0	0.020671	0.001381	0	0.176635	0.036142	0.032302	0.39726	0.002015	0	0.193393	0.036142	0.032302	0.39726	0.020013	0.205923	0	1.37819	0.001364	0	0.000659
San Mateo	2022	LDT1	Aggregate	Aggregate	Gasoline	24136.47	736196.1	736196.1	0	109571	0	0.134919	0	0.395074	0.001791	0	0.002798	0.002	0.002838	0.001948	0	0.003043	0.008	0.008107	332.0233	0	88.05436	0.00631	0	0.109218	0.009543	0	0.038745	0.028415	0	0.569782	0.157522	0.456069	2.467901	0.036499	1.368916	0	5.624448	0.003282	0	0.000871
San Mateo	2022	LDT1	Aggregate	Aggregate	Diesel	8.510916	119.4982	119.4982	0	25.11455	0	1.690269	0	0	0.241464	0	0	0.002	0.00334	0.252382	0	0	0.008	0.009543	418.5155	0	0	0.014886	0	0	0.065937	0	0	0.320488	0	0	0	0	0	0.364855	0	0	0	0	0	0.0031	1.709562	0	0	0.003966	0	0
San Mateo	2022	LDT1	Aggregate	Aggregate	Electricity	61.93893	2054.9	0	2054.9	294.187	793.3611	0	0	0	0	0	0	0.002	0.001538	0	0	0	0.008	0.004394	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	LDT1	Aggregate	Aggregate	Plug-in Hyb	19.40692	849.1339	406.2744	442.8594	80.24761	133.7567	0.003074	0	0.117199	0.000413	0	0.001456	0.002	0.001322	0.000449	0	0.001583	0.008	0.003777	129.0739	0	73.49717	0.000404	0	0.042967	0.000546	0	0.02082	0.001292	0	0.176635	0.024905	0.022892	0.287748	0.001885	0	0.193393	0.024905	0.022892	0.287748	0.020095	0.192615	0	1.37819	0.001276	0	0.000727
San Mateo	2022	LDT2	Aggregate	Aggregate	Gasoline	128775.8	4489208	4489208	0	617258.5	0	0.062575	0	0.324659	0.001272	0	0.002033	0.002	0.002716	0.001384	0	0.002212	0.008	0.007761	346.2249	0	88.33688	0.002639	0	0.081429	0.005428	0	0.036476	0.010335	0	0.378106	0.068121	0.172205	1.07279	0.015078	0	0.413978	0.068121	0.172205	1.07279	0.03686	0.748119	0	3.725451	0.003423	0	0.000873
San Mateo	2022	LDT2	Aggregate	Aggregate	Diesel	498.9179	17455.1	17455.1	0	2406.111	0	0.047726	0	0	0.005147	0	0	0.002	0.002738	0.00538	0	0	0.008	0.007822	319.776	0	0	0.000624	0	0	0.050381	0	0	0.013436	0	0	0	0	0	0.015295	0	0	0	0	0	0.0031	0.124515	0	0	0.00303	0	0
San Mateo	2022	LDT2	Aggregate	Aggregate	Electricity	502.691	16536.35	0	16536.35	2591.33	6384.394	0	0	0	0	0	0	0.002	0.001523	0	0	0	0.008	0.004353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	LDT2	Aggregate	Aggregate	Plug-in Hyb	938.5352	39780.13	19647.25	20132.88	3880.843	6080.728	0.003173	0	0.117199	0.000533	0	0.001824	0.002	0.001316	0.00058	0	0.001984	0.008	0.003761	133.2387	0	79.72461	0.000417	0	0.042967	0.000564	0	0.02082	0.001334	0	0.176635	0.026237	0.024762	0.312901	0.001946	0	0.193393	0.026237	0.024762	0.312901	0.020712	0.18883	0	1.37819	0.001317	0	0.000788
San Mateo	2022	LHDT1	Aggregate	Aggregate	Gasoline	10003.64	379521.5	379521.5	0	149039.3	0	0.147855	0.036625	0.627998	0.001475	0	0.00028	0.002	0.0273	0.001604	0	0.000304	0.008	0.078	873.9961	119.3318	27.2104	0.00734	0.115266	0.0324	0.008388	0.003078	0.051835	0.036131	0.419759	0.159081	0.039876	0.21247	2.143205	0.052722	0.612512	0.174174	0.039876	0.21247	2.143205	0.044922	1.060707	3.758503	3.2802	0.00864	0.00118	0.000269
San Mateo	2022	LHDT1	Aggregate	Aggregate	Diesel	4125.911	163656.9	163656.9	0	51898.77	0	1.504213	1.931831	0	0.031512	0.027157	0	0.003	0.0273	0.032937	0.028385	0	0.012	0.078	637.8215	131.7515	0	0.007485	0.005098	0	0.100489	0.020757	0	0.161141	0.10976	0	0	0	0	0.183448	0.124954	0	0	0	0	0.175401	0.431298	0.909745	0	0.006044	0.001248	0
San Mateo	2022	LHDT2	Aggregate	Aggregate	Gasoline	1166.848	41928.69	41928.69	0	17384.3	0	0.172444	0.036335	0.63879	0.001438	0	0.000256	0.002	0.03185	0.001563	0	0.000279	0.008	0.091	987.4952	138.4793	25.88997	0.006917	0.113246	0.032524	0.010039	0.002938	0.050567	0.032554	0.416435	0.161154	0.042451	0.223651	2.256912	0.047503	0.60766	0.176444	0.042451	0.223651	2.256912	0.044984	0.96909	3.758162	3.27211	0.009762	0.001369	0.000256
San Mateo	2022	LHDT2	Aggregate	Aggregate	Diesel	1718.365	70077.77	70077.77	0	21614.87	0	1.063364	1.845339	0	0.026451	0.026962	0	0.003	0.03185	0.027647	0.028181	0	0.012	0.091	760.4369	209.0317	0	0.0066	0.005098	0	0.119807	0.032933	0	0.142091	0.10976	0	0	0	0	0.161761	0.124954	0	0	0	0	0.190222	0.33883	0.909745	0	0.007206	0.001981	0
San Mateo	2022	MCY	Aggregate	Aggregate	Gasoline	11775.11	70029.62	70029.62	0	23550.22	0	0.563376	0	0.148145	0.00188	0	0.003836	0.001	0.0042	0.002007	0	0.00407	0.004	0.012	188.692	0	50.07102	0.159449	0	0.191389	0.038859	0	0.008671	1.054922	0	1.43267	3.559039	3.722371	3.591267	1.259821	0	1.557156	3.559039	3.722371	3.591267	0.008767	12.33015	0	7.963377	0.001865	0	0.000495
San Mateo	2022	MDV	Aggregate	Aggregate	Gasoline	72399.54	2561532	2561532	0	344969.9	0	0.082284	0	0.405736	0.001302	0	0.002201	0.002	0.002736	0.001416	0	0.002394	0.008	0.007817	417.1287	0	107.0056	0.003285	0	0.097944	0.006421	0	0.03969	0.013708	0	0.489899	0.078175	0.208676	1.264413	0.019977	0	0.536373	0.078175	0.208676	1.264413	0.037279	0.822259	0	4.057961	0.004124	0	0.001058
San Mateo	2022	MDV	Aggregate	Aggregate	Diesel	1048.144	37479.46	37479.46	0	5036.896	0	0.047538	0	0	0.004777	0	0	0.002	0.002777	0.004993	0	0	0.008	0.007934	415.9683	0	0	0.000486	0	0	0.065536	0	0	0.010456	0	0	0	0	0	0.011904	0	0	0	0	0	0.0031	0.180998	0	0	0.003942	0	0
San Mateo	2022	MDV	Aggregate	Aggregate	Electricity	497.8274	16375.41	0	16375.41	2565.598	6322.26	0	0	0	0	0	0	0.002	0.001523	0	0	0	0.008	0.004351	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	MDV	Aggregate	Aggregate	Plug-in Hyb	517.8537	21966.08	11106.12	10859.96	2141.325	3280.032	0.003248	0	0.117199	0.000662	0	0.002216	0.002	0.001313	0.00072	0	0.00241	0.008	0.003752	136.3969	0	99.02064	0.000428	0	0.043094	0.000581	0	0.020938	0.001365	0	0.176635	0.028658	0.027868	0.344841	0.001992	0	0.193393	0.028658	0.027868	0.344841	0.021235	0.203543	0	1.37819	0.001348	0	0.000979
San Mateo	2022	MH	Aggregate	Aggregate	Gasoline	751.6488	7043.926	7043.926	0	75.19494	0	0.465552	0	0.403779	0.001863	0	0.00047	0.003	0.015756	0.002026	0	0.000512	0.012	0.045017	1948.174	0	32.24518	0.017921	0	0.039048	0.027477	0	0.041219	0.080748	0	0.17064	12.70927	0.296989	4.339134	0.117828	0	0.186829	12.70927	0.296989	4.339134	0.044744	2.072946	0	3.847624	0.01926	0	0.000319
San Mateo	2022	MH	Aggregate	Aggregate	Diesel	300.3894	3250.689	3250.689	0	30.03894	0	3.401996	0	0	0.063019	0	0	0.004	0.015675	0.065868	0	0	0.016	0.044785	1084.767	0	0	0.00458	0	0	0.170906	0	0	0.09861	0	0	0	0	0	0.112261	0	0	0	0	0	0.179676	0.315592	0	0	0.010279	0	0
San Mateo	2022	MHDT	Aggregate	Aggregate	Gasoline	756.5401	44483.7	44483.7	0	15136.85	0	0.604094	0.088245	0.46581	0.00141	0	0.000575	0.003	0.015756	0.001534	0	0.000625	0.012	0.045017	1795.462	537.4412	47.64422	0.019663	0.256996	0.051354	0.028235	0.007106	0.034029	0.098372	1.009116	0.288081	0.038151	0.314095	2.937981	0.143545	1.4725	0.315413	0.038151	0.314095	2.937981	0.044954	2.080066	15.07471	6.396341	0.01775	0.005313	0.000471
San Mateo	2022	MHDT	Aggregate	Aggregate	Diesel	4156.051	174304	174304	0	49995.69	0	1.853334	15.89701	1.436117	0.023182	0.047988	0	0.003	0.015983	0.02423	0.050158	0	0.012	0.045666	1163.775	2327.752	0	0.002813	0.013999	0	0.183353	0.366738	0	0.060556	0.301404	0	0	0	0	0.068939	0.343126	0	0	0	0	0.193605	0.190383	7.265304	0	0.01102	0.022042	0
San Mateo	2022	MHDT	Aggregate	Aggregate	Natural Ga	40.6324	1873.257	1873.257	0	381.7521	0	0.153851	6.514328	0	0.001104	0.016957	0	0.003	0.016076	0.001201	0.018442	0	0.012	0.045932	1016.708	5323.016	0	0.747144	17.79445	0	0.207263	1.085132	0	0.010675	0.254248	0	0	0	0	0.762515	18.16055	0	0	0	0	1.06	3.046292	32.12184	0	0	0	0
San Mateo	2022	OBUS	Aggregate	Aggregate	Gasoline	256.1924	15869.04	15869.04	0	5125.898	0	0.334451	0.065049	0.372974	0.000967	0	0.000281	0.003	0.01568	0.001052	0	0.000306	0.012	0.044799	1762.688	376.5742	30.5752	0.010394	0.20597	0.033776	0.01844	0.005899	0.032179	0.049248	0.746076	0.166832	0.02655	0.111811	1.875172	0.071862	1.088672	0.18266	0.02655	0.111811	1.875172	0.044917	1.077968	5.773479	3.517583	0.017426	0.003723	0.000302
San Mateo	2022	OBUS	Aggregate	Aggregate	Diesel	1024.18	74221.67	74221.67	0	10035.19	0	1.072703	6.342591	1.429669	0.010592	0.00365	0	0.003	0.01742	0.011071	0.003815	0	0.012	0.04977	1257.365	1266.668	0	0.001405	0.014292	0	0.198098	0.199564	0	0.030244	0.307698	0	0	0	0	0.03443	0.350291	0	0	0	0	0.210134	0.116655	5.413261	0	0.011906	0.011995	0
San Mateo	2022	OBUS	Aggregate	Aggregate	Natural Ga	11.96887	654.3713	654.3713	0	106.5229	0	0.293719	1.58105	0	0.000566	0.002858	0	0.003	0.016148	0.000615	0.003109	0	0.012	0.046137	1069.812	1202.184	0	0.733013	4.775652	0	0.218088	0.245073	0	0.010473	0.068235	0	0	0	0	0.748094	4.873903	0	0	0	0	1.06	3.101343	5.006328	0	0	0	0
San Mateo	2022	SBUS	Aggregate	Aggregate	Gasoline	57.57285	3267.931	3267.931	0	230.2914	0	0.981493	0.921357	0.655387	0.001299	0	0.000777	0.002	0.015721	0.001412	0	0.000845	0.008	0.044917	807.8108	2570.697	63.52492	0.024786	2.43655	0.092559	0.045477	0.081943	0.056213	0.121107	10.56494	0.538292	0.15493	0.449507	2.231691	0.17672	15.41634	0.589362	0.15493	0.449507	2.231691	0.045	3.134679	81.77802	13.70908	0.007986	0.025414	0.000628
San Mateo	2022	SBUS	Aggregate	Aggregate	Diesel	168.1521	3799.171	3799.171	0	2434.843	0	5.308039	24.50088	0.415745	0.025509	0.027927	0	0.003	0.015721	0.026662	0.02919	0	0.012	0.044917	1155.182	2256.975	0	0.003351	0.008427	0	0.181999	0.355587	0	0.072141	0.18143	0	0	0	0	0.082127	0.206545	0	0	0	0	0.128799	0.214547	4.164591	0	0.010939	0.021372	0
San Mateo	2022	SBUS	Aggregate	Aggregate	Natural Ga	5.747464	147.755	147.755	0	83.22328	0	0.580038	5.278861	0	0.003378	0.011167	0	0.003	0.015721	0.003674	0.012145	0	0.012	0.044917	1270.028	4071.06	0	3.473989	15.35501	0	0.258904	0.829912	0	0.049636	0.219393	0	0	0	0	3.545461	15.67091	0	0	0	0	1.06	11.82462	20.31851	0	0	0	0
San Mateo	2022	UBUS	Aggregate	Aggregate	Gasoline	61.08139	4153.342	4153.342	0	244.3256	0	0.052732	0	0.593554	0.000924	0	0.000101	0.002	0.002073	0.032333	0.001005	0	0.00011	0.00829	0.092379	1026.004	0	41.36564	0.002283	0	0.05585	0.006009	0	0.07764	0.006738	0	0.216361	0.059157	0.09606	0.592841	0.009832	0	0.236888	0.059157	0.09606	0.592841	0.045	0.562776	0	5.939286	0.010143	0	0.000409
San Mateo	2022	UBUS	Aggregate	Aggregate	Diesel	341.0475	28477.87	28477.87	0	1364.19	0	2.903167	0	0	0.007622	0	0	0.007913	0.0385	0.007966	0	0	0.031652	0.11	1452.079	0	0	0.00732	0	0	0.228776	0	0	0.157595	0	0	0	0	0	0.179409	0	0	0	0	0	0.12243	0.193248	0	0	0.013759	0	0
San Mateo	2022	UBUS	Aggregate	Aggregate	Electricity	2.018703	15.3193	0	15.3193	8.074811	26.70528	0	0	0	0	0	0	0.009	0.01925	0	0	0	0.036	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	UBUS	Aggregate	Aggregate	Natural Ga	34.62042	1174.257	1174.257	0	138.4817	0	0.063543	0	0	0.000296	0	0	0.008807	0.0385	0.000331	0	0	0.035229	0.11	1350.881	0	0	4.451808	0	0	0.275386	0	0	0.063608	0	0	0	0	0	4.543397	0	0	0	0	0	0.97	52.64109	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEx and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Con	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PM	PM10_PMI	CO2_RUNE	CO2_IDLEX	CO2_STREX	CH4_RUNE	CH4_IDLEX	CH4_STREX	N2O_RUNE	N2O_IDLEX	N2O_STRE	ROG_RUNI	ROG_IDLEX	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_DIUR	NH3_RUNE	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
San Mateo	2024	HHDT	Aggregate	Aggregate	Gasoline	4.38411	570.1519	570.1519	0	87.71727	0	4.048188	0	0.002195	0.001412	0	0.000781	0.005	0.031087	0.001536	0	0.000849	0.02	0.08882	2242.616	0	52.51813	0.114927	0	9.83E-05	0.151409	0	0.000106	0.580011	0	0.000534	0.038164	0.298441	2.621146	0.84635	0	0.000584	0.038164	0.298441	2.621146	0.045	33.76595	0	5.064106	0.022171	0	0.000519
San Mateo	2024	HHDT	Aggregate	Aggregate	Diesel	1314.625	119489.1	119489.1	0	14359.46	0	2.758523	46.67792	2.948259	0.025016	0.035273	0	0.008607	0.030666	0.026147	0.036868	0	0.034429	0.087616	1815.874	8218.84	0	0.001264	0.157243	0	0.286092	1.294882	0	0.027205	3.385404	0	0	0	0	0.030971	3.854024	0	0	0	0	0	0.19939	0.118425	47.19978	0	0.017195	0.077828	0
San Mateo	2024	HHDT	Aggregate	Aggregate	Electricity	4.22305	364.2879	0	364.2879	41.8342	680.3172	0	0	0	0	0	0	0.008582	0.016829	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	HHDT	Aggregate	Aggregate	Natural Ga	168.5495	11187.83	11187.83	0	1132.175	0	1.492552	9.520927	0	0.001788	0.012243	0	0.009	0.059336	0.001944	0.013315	0	0.036	0.169533	1498.953	8407.645	0	3.081874	24.13874	0	0.305571	1.713953	0	0.069062	0.389544	0	0	0	0	3.173794	24.68622	0	0	0	0	0	0.729125	16.65962	64.84398	0	0	0	0
San Mateo	2024	LDA	Aggregate	Aggregate	Gasoline	239419.7	7454000	7454000	0	1124271	0	0.038087	0	0.247841	0.001162	0	0.001964	0.002	0.002348	0.001263	0	0.002136	0.008	0.006709	273.8201	0	69.41898	0.002038	0	0.068169	0.004236	0	0.031309	0.007847	0	0.318313	0.083377	0.213338	1.277502	0.01145	0	0.348512	0.083377	0.213338	1.277502	0.036176	0.637775	0	0.199778	0.002707	0	0.000686
San Mateo	2024	LDA	Aggregate	Aggregate	Diesel	770.443	17557.03	17557.03	0	3247.138	0	0.188593	0	0	0.01271	0	0	0.002	0.002404	0.013285	0	0	0.008	0.006869	232.7779	0	0	0.001054	0	0	0.036674	0	0	0.022696	0	0	0	0	0	0.025838	0	0	0	0	0	0.0031	0.304144	0	0	0.002206	0	0
San Mateo	2024	LDA	Aggregate	Aggregate	Electricity	17934.86	689392.1	0	689392.1	89072.05	2661662.3	0	0	0	0	0	0	0.002	0.00153	0	0	0	0.008	0.004371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	LDA	Aggregate	Aggregate	Plug-in Hyb	7500.936	275231.1	133857.4	141373.7	31016.37	42699.07	0.003125	0	0.117199	0.000577	0	0.001988	0.002	0.001324	0.000628	0	0.002162	0.008	0.003783	131.2036	0	65.11921	0.000402	0	0.042117	0.000534	0	0.020029	0.001313	0	0.176635	0.037635	0.03379	0.393665	0.01916	0	0.193393	0.037635	0.03379	0.393665	0.0194	0.1958	0	1.37819	0.001297	0	0.000644
San Mateo	2024	LDT1	Aggregate	Aggregate	Gasoline	25010.05	728708.6	728708.6	0	114230.1	0	0.101175	0	0.337766	0.001531	0	0.002433	0.002	0.002823	0.001665	0	0.002647	0.008	0.008066	320.3175	0	83.57506	0.004741	0	0.091509	0.007635	0	0.035447	0.020943	0	0.464929	0.13393	0.378571	2.119435	0.03751	0	0.509038	0.13393	0.378571	2.119435	0.03751	1.098083	0	4.642443	0.003167	0	0.000826
San Mateo	2024	LDT1	Aggregate	Aggregate	Diesel	6.907674	87.50597	87.50597	0	19.69868	0	1.656035	0	0	0.236493	0	0	0.002	0.003323	0.247186	0	0	0.008	0.009495	417.763	0	0	0.014564	0	0	0.065819	0	0	0.313559	0	0	0	0	0	0.356966	0	0	0	0	0	0.0031	1.668132	0	0	0.003959	0	0
San Mateo	2024	LDT1	Aggregate	Aggregate	Electricity	91.59654	3278.131	0	3278.131	443.5442	1265.629	0	0	0	0	0	0	0.002	0.001533	0	0	0	0.008	0.004381	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	LDT1	Aggregate	Aggregate	Plug-in Hyb	54.25069	2174.893	971.2907	1203.602	224.3266	363.5237	0.002869	0	0.117199	0.000364	0	0.001376	0.002	0.001338	0.000396	0	0.001496	0.008	0.003823	120.4792	0	71.41059	0.00037	0	0.042142	0.000491	0	0.020052	0.001206	0	0.176635	0.024003	0.020809	0.269408	0.00176	0	0.193393	0.024003	0.020809	0.269408	0.018757	0.179795	0	1.37819	0.001191	0	0.000706
San Mateo	2024	LDT2	Aggregate	Aggregate	Gasoline	149536	4914901	4914901	0	718035.6	0	0.047837	0	0.275637	0.001155	0	0.001881	0.002	0.002719	0.001256	0	0.002046	0.008	0.007768	332.6183	0	84.15109	0.002154	0	0.070859	0.004613	0	0.03323	0.008159	0	0.321903	0.059457	0.151098	0.950815	0.011906	0	0.352443	0.059457	0.151098	0.950815	0.038479	0.65082	0	3.265171	0.003288	0	0.000832
San Mateo	2024	LDT2	Aggregate	Aggregate	Diesel	582.1748	18954.02	18954.02	0	2798.233	0	0.039602	0	0	0.004525	0	0	0.002	0.002742	0.00473	0	0	0.008	0.007835	308.9591	0	0	0.000583	0	0	0.048677	0	0	0.012549	0	0	0	0	0	0.014287	0	0	0	0	0	0.0031	0.119356	0	0	0.002928	0	0
San Mateo	2024	LDT2	Aggregate	Aggregate	Electricity	1250.957	37598.89	0	37598.89	6394.245	14516.27	0	0	0	0	0	0	0.002	0.001525	0	0	0	0.008	0.004358	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	LDT2	Aggregate	Aggregate	Plug-in Hyb	1631.391	62724.85	29203.5	33521.35	6745.803	10124.45	0.002991	0	0.117199	0.000445	0	0.001613	0.002	0.001331	0.000484	0	0.001754	0.008	0.003803	125.6019	0	77.89253	0.000385	0	0.042141	0.000512	0	0.020051	0.001257	0	0.176635	0.025289	0.023061	0.293714	0.001834	0	0.193393	0.025289	0.023061	0.293714	0.019538	0.18744	0	1.37819	0.001242	0	0.00077
San Mateo	2024	LHDT1	Aggregate	Aggregate	Gasoline	11110.29	401258.4	401258.4	0	165526.8	0	0.108054	0.033789	0.571117	0.001381	0	0.000231	0.002	0.0273	0.001502	0	0.000252	0.008	0.078	836.8766	116.5649	26.73629	0.005557	0.107506	0.028745	0.006197	0.00292	0.048292	0.02703	0.387394	0.139437	0.033968	0.18488	1.873078	0.039443	0.565284	0.152666	0.033968	0.18488	1.873078	0.044949	0.932434	3.763967	3.345475	0.008273	0.001152	0.000264
San Mateo	2024	LHDT1	Aggregate	Aggregate	Diesel	4996.692	191551.4	191551.4	0	62852.09	0	1.027551	1.628055	0	0.024469	0.026784	0	0.003	0.0273	0.025575	0.027995	0	0.012	0.078	625.1858	126.8159	0	0.006142	0.005098	0	0.098498	0.01998	0	0.132227	0.10976	0	0	0	0	0.150532	0.124954	0	0	0	0	0	0.191039	0.331515	0.909745	0	0.005924	0.001202	0
San Mateo	2024	LHDT1	Aggregate	Aggregate	Electricity	56.88552	3530.642	0	3530.642	794.6546	2311.167	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	LHDT2	Aggregate	Aggregate	Gasoline	1289.385	44551.76	44551.76	0	19209.92	0	0.122228	0.032802	0.574333	0.001317	0	0.000203	0.002	0.03185	0.001432	0	0.00022	0.008	0.091	944.5417	135.0667	25.31696	0.004775	0.10351	0.028373	0.007371	0.002735	0.046606	0.02185	0.376166	0.138457	0.035403	0.189345	1.948594	0.04499	0.81417	3.766002	3.313222	0.009338	0.001335	0.00025
San Mateo	2024	LHDT2	Aggregate	Aggregate	Diesel	2173.662	83732.44	83732.44	0	27341.93	0	0.758817	1.552593	0	0.021905	0.026813	0	0.003	0.03185	0.022896	0.028026	0	0.012	0.091	738.893	201.7788	0	0.00575	0.005098	0	0.116413	0.03179	0	0.123794	0.10976	0	0	0	0	0.140931	0.124954	0	0	0	0	0	0.200587	0.280863	0.909745	0	0.007001	0.001912	0
San Mateo	2024	LHDT2	Aggregate	Aggregate	Electricity	14.72375	865.8383	0	865.8383	194.8979	558.2118	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	MCY	Aggregate	Aggregate	Gasoline	13263.89	76675.37	76675.37	0	26527.78	0	0.518793	0	0.126152	0.001881	0	0.003482	0.001	0.0042	0.002012	0	0.003708	0.004	0.012	186.9256	0	46.09461	0.145168	0	0.173078	0.036969	0	0.007549	0.930365	0	1.275208	3.551353	3.70872	3.28364	1.125127	0	1.386524	3.551353	3.70872	3.28364	0.008901	11.0461	0	7.750076	0.001848	0	0.000456
San Mateo	2024	MDV	Aggregate	Aggregate	Gasoline	84173.19	2823183	2823183	0	402441.6	0	0.058434	0	0.328591	0.001156	0	0.001958	0.002	0.002737	0.001258	0	0.002129	0.008	0.007819	401.2877	0	101.9843	0.002492	0	0.08141	0.005161	0	0.035386	0.009941	0	0.393656	0.066904	0.180975	1.115277	0.014501	0	0.431003	0.066904	0.180975	1.115277	0.038746	0.686178	0	3.45873	0.003967	0	0.001008
San Mateo	2024	MDV	Aggregate	Aggregate	Diesel	1163.667	38157.5	38157.5	0	5552.1	0	0.037261	0	0	0.004001	0	0	0.002	0.002798	0.004182	0	0	0.008	0.007995	404.1827	0	0	0.000421	0	0	0.063679	0	0	0.009074	0	0	0	0	0	0.01033	0	0	0	0	0	0.0031	0.171126	0	0	0.00383	0	0
San Mateo	2024	MDV	Aggregate	Aggregate	Electricity	1347.217	40547.66	0	40547.66	6889.415	15654.74	0	0	0	0	0	0	0.002	0.001525	0	0	0	0.008	0.004357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	MDV	Aggregate	Aggregate	Plug-in Hyb	894.3672	35015.17	16467.11	18548.06	3698.208	5602.067	0.003021	0	0.117199	0.000509	0	0.001829	0.002	0.00133	0.000553	0	0.001989	0.008	0.0038	126.8709	0	95.82464	0.000391	0	0.042289	0.000521	0	0.020188	0.00127	0	0.176635	0.028115	0.024943	0.310017	0.001853	0	0.193393	0.028115	0.024943	0.310017	0.019752	0.189334	0	1.37819	0.001254	0	0.000947
San Mateo	2024	MH	Aggregate	Aggregate	Gasoline	801.8479	7786.339	7786.339	0	80.21686	0	0.31412	0	0.403344	0.001626	0	0.000414	0.003	0.015756	0.001768	0	0.00045	0.012	0.045017	1946.554	0	31.59379	0.011734	0	0.037106	0.021154	0	0.043344	0.049091	0	0.154768	9.691274	0.229932	3.473479	0.071633	0	0.169451	9.691274	0.229932	3.473479	0.044918	1.137792	0	3.470688	0.019244	0	0.000312
San Mateo	2024	MH	Aggregate	Aggregate	Diesel	356.6509	3693.518	3693.518	0	35.66509	0	3.096233	0	0	0.049578	0	0	0.004	0.015675	0.05182	0	0	0.016	0.044785	1085.795	0	0	0.004225	0	0	0.171067	0	0	0.090961	0	0	0	0	0	0.103553	0	0	0	0	0	0.190835	0.284597	0	0	0.010288	0	0
San Mateo	2024	MHDT	Aggregate	Aggregate	Gasoline	803.5707	46997.14	46997.14	0	1607.84	0	0.392706	0.088662	0.440106	0.001362	0	0.000524	0.003	0.015756	0.001481	0	0.00057	0.012	0.045017	1738.217	524.0271	45.30167	0.012668	0.264735	0.046933	0.020191	0.007577	0.034475	0.061766	1.015329	0.254725	0.030087	0.246862	2.353612	0.090129	1.481566	0.278892	0.030087	0.246862	2.353612	0.044986	1.274083	15.14683	5.603458	0.017184	0.005181	0.000448
San Mateo	2024	MHDT	Aggregate	Aggregate	Diesel	4233.233	177028	177028	0	51051.04	0	1.307284	13.59602	1.607655	0.016259	0.033511	0	0.003	0.015983	0.016994	0.035026	0	0.012	0.045664	1151.344	2248.491	0	0.001748	0.011985	0	0.181395	0.354251	0	0.037635	0.258043	0	0	0	0	0.042845	0.293763	0	0	0	0	0	0.208724	0.13444	7.547588	0	0.010903	0.021292	0
San Mateo	2024	MHDT	Aggregate	Aggregate	Electricity	14.28233	871.0875	0	871.0875	206.3119	980.3084	0	0	0	0	0	0	0.003	0.007951	0	0	0	0.012	0.022718	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	MHDT	Aggregate	Aggregate	Natural Ga	40.94682	1935.863	1935.863	0	369.2827	0	0.126627	6.578363	0	0.00126	0.019031	0	0.003	0.016095	0.001371	0.020698	0	0.012	0.045986	1003.333	5452.112	0	0.773152	17.27614	0	0.204536	1.111449	0	0.011047	0.246842	0	0	0	0	0.789058	17.63157	0	0	0	0	0	1.06	3.066853	36.67055	0	0	0	0
San Mateo	2024	OBUS	Aggregate	Aggregate	Gasoline	254.1967	14438.68	14438.68	0	5085.967	0	0.276687	0.065109	0.370674	0.00102	0	0.000283	0.003	0.01568	0.00111	0	0.000308	0.012	0.044799	1723.101	370.7574	29.97676	0.008478	0.205512	0.032818	0.016007	0.005919	0.031879	0.039535	0.746984	0.162428	0.025788	0.11331	1.92621	0.05769	1.089998	0.177838	0.025788	0.11331	1.92621	0.044947	0.847792	5.778931	3.396221	0.017035	0.003665	0.000296
San Mateo	2024	OBUS	Aggregate	Aggregate	Diesel	1077.493	75002.36	75002.36	0	10539.7	0	0.835238	5.759378	1.510482	0.009497	0.003284	0	0.003	0.017376	0.009927	0.003433	0	0.012	0.049647	1241.911	1216.11	0	0.000936	0.013985	0	0.195664	0.191599	0	0.020157	0.301093	0	0	0	0	0.022947	0.342772	0	0	0	0	0	0.217754	0.093918	5.631167	0	0.01176	0.011516	0
San Mateo	2024	OBUS	Aggregate	Aggregate	Electricity	0.873406	79.58076	0	79.58076	17.47512	88.16331	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.022399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	OBUS	Aggregate	Aggregate	Natural Ga	7.797528	492.5585	492.5585	0	69.398	0	0.196374	1.542446	0	0.001031	0.003779	0	0.003	0.016148	0.001121	0.00411	0	0.012	0.046137	1012.331	1198.177	0	0.786409	4.299019	0	0.20637	0.244256	0	0.011236	0.061424	0	0	0	0	0.802588	4.387464	0	0	0	0	0	1.06	3.2452	7.082462	0	0	0	0
San Mateo	2024	SBUS	Aggregate	Aggregate	Gasoline	66.88141	3561.549	3561.549	0	267.5256	0	0.835223	0.92382	0.639831	0.001152	0	0.000724	0.002	0.015721	0.001252	0	0.000787	0.008	0.044917	789.442	2519.886	61.00487	0.01963	2.446302	0.087874	0.039135	0.085207	0.056875	0.09611	10.60191	0.509805	0.133122	0.399591	2.076885	0.140243	15.47029	0.558173	0.133122	0.399591	2.076885	0.045	2.460202	82.00038	12.72081	0.007804	0.024912	0.000603
San Mateo	2024	SBUS	Aggregate	Aggregate	Diesel	168.96	3777.202	3777.202	0	2446.541	0	4.696712	23.22062	0.459253	0.022409	0.023726	0	0.003	0.015721	0.023422	0.024798	0	0.012	0.044917	1144.311	2236.593	0	0.003112	0.008208	0	0.180287	0.352376	0	0.067	0.176716	0	0	0	0	0.076275	0.201177	0	0	0	0	0	0.139187	0.202372	4.417573	0	0.010836	0.021179	0
San Mateo	2024	SBUS	Aggregate	Aggregate	Electricity	0.90883	36.62057	0	36.62057	8.140217	38.57814	0	0	0	0	0	0	0.002304	0.00786	0	0	0	0.009214	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	SBUS	Aggregate	Aggregate	Natural Ga	6.288614	158.6097	158.6097	0	91.05913	0	0.535215	5.251389	0	0.003378	0.011823	0	0.003	0.015721	0.003674	0.012858	0	0.012	0.044917	1247.354	4088.672	0	3.35032	15.01581	0	0.254281	0.833502	0	0.047869	0.214546	0	0	0	0	3.419247	15.32474	0	0	0	0	0	1.06	11.24264	21.79598	0	0	0	0
San Mateo	2024	UBUS	Aggregate	Aggregate	Gasoline	61.44418	4178.01	4178.01	0	245.7767	0	0.036235	0	0.500251	0.001083	0	0.000148	0.002	0.002073	0.032333	0.001178	0	0.000161	0.00829	0.092379	1002.317	0	40.2745	0.00211	0	0.046538	0.004853	0	0.069658	0.006117	0	0.175043	0.050072	0.096281	0.505947	0.008925	0	0.19165	0.050072	0.096281	0.505947	0.045	0.556675	0	6.169996	0.009909	0	0.000398
San Mateo	2024	UBUS	Aggregate	Aggregate	Diesel	277.5893	21477.78	21477.78	0	1110.357	0	0.375565	0	0	0.006827	0	0	0.002	0.008097	0.0385	0.007136	0	0	0.032388	0.11	1223.727	0	0	0.003145	0	0	0.192799	0	0	0.067719	0	0	0	0	0	0.077093	0	0	0	0	0	0.22	0.077195	0	0	0.011595	0	0
San Mateo	2024	UBUS	Aggregate	Aggregate	Electricity	37.0794	3851.303	0	3851.303	148.3176	6713.762	0	0	0	0	0	0	0.007366	0.01925	0	0	0	0.029466	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	UBUS	Aggregate	Aggregate	Natural Ga	65.26114	4514.573	4514.573	0	261.0446	0	0.055424	0	0	0.000272	0	0	0.007741	0.0385	0.000285	0	0	0.030963	0.11	1262.656	0	0	4.100531	0	0	0.257401	0	0	0.058588	0	0	0	0	0	4.184893	0	0	0	0	0	0.97	46.50633	0	0	0	0	0

CalEEMod EMFAC2021 Emission Factors Input

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.005323	0.003105	0.01434	0.273685401	0.006417	0	0	0.092216	0
A	CH4_RUNEX	0.001816	0.004708	0.00211	0.002406	0.005712	0.005375	0.010587	0.263624567	0.006443	0.546372945	0.145168	0.081373	0.009318
A	CH4_STREX	0.062477	0.091044	0.069707	0.078645	0.020762	0.011708	0.011145	5.52E-07	0.010623	0.006478667	0.173078	0.008356	0.025686
A	CO_IDLEX	0	0	0	0	0.202312	0.146789	0.673867	4.671825494	0.483165	0	0	2.263477	0
A	CO_RUNEX	0.570543	1.090528	0.638184	0.664089	0.733892	0.462951	0.395072	1.669970888	0.232005	6.288345468	11.0461	1.501161	0.863286
A	CO_STREX	2.917718	4.617357	3.206934	3.337544	2.41636	1.367222	1.330658	0.028436361	1.099317	0.858932112	7.750076	1.209677	2.402511
A	CO2_NBIO_IDLEX	0	0	0	0	8.416025	13.16279	150.1042	782.386274	89.98783	0	0	203.3723	0
A	CO2_NBIO_RUNEX	246.7057	318.307	327.4656	392.5133	763.9244	804.8802	1267.253	1785.755969	1316.743	1063.174859	186.9256	973.1604	1669.614
A	CO2_NBIO_STREX	64.17529	83.21441	83.03964	98.89856	19.31101	10.4472	10.75783	0.294903893	9.70313	5.606659192	46.09461	5.801218	21.87014
A	NOX_IDLEX	0	0	0	0	0.037135	0.073404	0.855124	4.030982458	0.39677	0	0	1.428293	0
A	NOX_RUNEX	0.034147	0.100617	0.04689	0.056692	0.402767	0.534131	1.102697	2.648858391	0.741408	0.248897775	0.518793	2.760825	1.209234
A	NOX_STREX	0.226253	0.335974	0.270729	0.316956	0.412505	0.237002	1.316729	2.710139555	1.133188	0.069640541	0.126152	0.460231	0.279207
A	PM10_IDLEX	0	0	0	0	0.00061	0.001309	0.002203	0.003246368	0.000237	0	0	0.001518	0
A	PM10_PMBW	0.006423	0.008037	0.007693	0.007726	0.077769	0.090695	0.045445	0.094475353	0.048826	0.142303478	0.012	0.044808	0.044943
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009285	0.010593	0.012	0.034500095	0.012	0.050709946	0.004	0.010096	0.013287
A	PM10_RUNEX	0.001164	0.001683	0.00125	0.00127	0.009226	0.015338	0.013581	0.023910573	0.008455	0.00468729	0.002012	0.012412	0.017872
A	PM10_STREX	0.001979	0.002634	0.002017	0.002065	0.000182	9.09E-05	0.000135	4.76825E-06	9.96E-05	2.24745E-05	0.003708	7.49E-05	0.000311
A	PM25_IDLEX	0	0	0	0	0.000584	0.001252	0.002107	0.003100576	0.000227	0	0	0.001451	0
A	PM25_PMBW	0.002248	0.002813	0.002693	0.002704	0.027219	0.031743	0.015906	0.033066374	0.017089	0.049806217	0.0042	0.015683	0.01573
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002321	0.002648	0.003	0.008625024	0.003	0.012677486	0.001	0.002524	0.003322
A	PM25_RUNEX	0.001072	0.001548	0.00115	0.00117	0.008789	0.014656	0.012982	0.022869803	0.008083	0.004479126	0.001881	0.01185	0.017054
A	PM25_STREX	0.00182	0.002422	0.001855	0.001898	0.000167	8.36E-05	0.000124	4.38423E-06	9.15E-05	2.06645E-05	0.003482	6.88E-05	0.000286
A	ROG_DIURN	0.247523	0.461389	0.194362	0.224935	0.090806	0.053972	0.027935	0.000735629	0.031162	0.017608377	3.28364	0.049375	24.03482
A	ROG_HTSK	0.07607	0.133175	0.058398	0.064573	0.024534	0.014609	0.007145	0.0002143	0.008347	0.006970631	3.551353	0.012659	6.708582
A	ROG_IDLEX	0	0	0	0	0.021174	0.015544	0.028334	0.289107062	0.032763	0	0	0.263138	0
A	ROG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	ROG_RUNEX	0.007024	0.020826	0.008029	0.009689	0.060661	0.087797	0.042264	0.03308255	0.023199	0.0512764	0.930365	0.080033	0.062562
A	ROG_RUNLS	0.193088	0.376347	0.148029	0.174218	0.133534	0.078134	0.058623	0.001675829	0.036677	0.01340336	3.70872	0.037999	0.159166
A	ROG_STREX	0.291236	0.462492	0.316536	0.380038	0.100712	0.057135	0.06049	2.99673E-06	0.052576	0.024367925	1.275208	0.04848	0.107135
A	SO2_IDLEX	0	0	0	0	8.21E-05	0.000126	0.001393	0.006549696	0.000849	0	0	0.001864	0
A	SO2_RUNEX	0.002439	0.003147	0.003237	0.003878	0.00747	0.00776	0.012069	0.015707489	0.012531	0.008537023	0.001848	0.009122	0.016362
A	SO2_STREX	0.000634	0.000823	0.000821	0.000978	0.000191	0.000103	0.000106	2.91543E-06	9.59E-05	5.54275E-05	0.000456	5.74E-05	0.000216
A	TOG_DIURN	0.247523	0.461389	0.194362	0.224935	0.090806	0.053972	0.027935	0.000735629	0.031162	0.017608377	0.075872	0.049375	24.03482
A	TOG_HTSK	0.07607	0.133175	0.058398	0.064573	0.024534	0.014609	0.007145	0.0002143	0.008347	0.006970631	3.551353	0.012659	6.708582
A	TOG_IDLEX	0	0	0	0	0.030129	0.021038	0.046615	0.590701071	0.043317	0	0	0.414123	0
A	TOG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	TOG_RUNEX	0.010234	0.030375	0.0117	0.014096	0.074892	0.102369	0.058846	0.301577838	0.032766	0.605087271	1.125127	0.176522	0.081903
A	TOG_RUNLS	0.193088	0.376347	0.148029	0.174218	0.133534	0.078134	0.058623	0.001675829	0.036677	0.01340336	3.70872	0.037999	0.159166
A	TOG_STREX	0.318867	0.50637	0.346567	0.416093	0.110267	0.062556	0.066229	3.28104E-06	0.057564	0.026679811	1.386524	0.053079	0.117299
A	N2O_IDLEX	0	0	0	0	0.000577	0.00156	0.022912	0.127466024	0.013356	0	0	0.025052	0
A	N2O_RUNEX	0.003836	0.007587	0.004693	0.005794	0.035809	0.078017	0.147496	0.28637223	0.166731	0.156465471	0.036969	0.114242	0.069387
A	N2O_STREX	0.028712	0.035275	0.032693	0.0342	0.03488	0.019232	0.008187	5.9511E-07	0.010319	0.009697145	0.007549	0.005409	0.030004

CalEEMod EMFAC2021 Fleet Mix Input

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.46273	0.043835	0.266533	0.152565	0.028158	0.006058	0.008871	0.002599	0.002335	0.000769	0.023106	0.000423	0.002018

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2030
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Con	NOx_RUNEX	NOx_IDLEX	NOx_STREX	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_STREX	CH4_RUNE	CH4_IDLEX	CH4_STREX	N2O_RUNE	N2O_IDLEX	N2O_STREX	ROG_RUNI	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNI	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNI	TOG_DIUR	NH3_RUNE	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
San Mateo	2030	HHDT	Aggregate	Aggregate	Gasoline	3.582613	348.8502	348.8502	0	71.68092	0	3.309536	0	0.000636	0.001281	0	0.000408	0.005	0.031258	0.001393	0	0.000444	0.02	0.08931	2124.112	0	48.3003	0.102341	0	7.44E-05	0.139473	0	4.21E-05	0.479172	0	0.000403	0.0158	0.095238	1.146877	0.699207	0	0.000441	0.0158	0.095238	1.146877	0.045	32.18037	0	4.037713	0.020999	0	0.000477
San Mateo	2030	HHDT	Aggregate	Aggregate	Diesel	1338.439	117080	117080	0	15181.71	0	2.116368	45.39119	3.044846	0.023283	0.023862	0	0.008615	0.030087	0.024335	0.024941	0	0.03446	0.085963	1627.718	7731.446	0	0.000972	0.162527	0	0.256448	1.218092	0	0.020928	3.499162	0	0	0	0	0.023825	3.98353	0	0	0	0	0	0	0.207747	0.090912	50.23689	0	0.015414	0.073212	0
San Mateo	2030	HHDT	Aggregate	Aggregate	Electricity	84.88807	7748.726	0	7748.726	800.5398	14460.23	0	0	0	0	0	0	0	0.00845	0.017769	0	0	0	0.033801	0.050769	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	HHDT	Aggregate	Aggregate	Natural Ga	216.9868	13750.35	13750.35	0	1391.47	0	0.831786	6.734329	0	0.001446	0.012428	0	0.009	0.062879	0.001573	0.013516	0	0.036	0.179654	1389.59	7977.287	0	1.838591	17.41083	0	0.283277	1.626222	0	0.037223	0.267421	0	0	0	0	1.888896	17.79029	0	0	0	0	0	0	0.693529	12.98287	57.90215	0	0	0	0
San Mateo	2030	LDA	Aggregate	Aggregate	Gasoline	237797.8	6358120	6358120	0	1114767	0	0.025015	0	0.198441	0.00084	0	0.0015	0.002	0.002348	0.000914	0	0.001631	0.008	0.006709	250.3795	0	62.47074	0.001264	0	0.048749	0.003327	0	0.026593	0.004452	0	0.219797	0.064961	0.182842	1.100035	0.006497	0	0.240455	0.064961	0.182842	1.100035	0.039859	0.49519	0	2.387223	0.002475	0	0.000618
San Mateo	2030	LDA	Aggregate	Aggregate	Diesel	401.2092	8094.892	8094.892	0	1723.63	0	0.081629	0	0	0.005614	0	0	0.002	0.002417	0.005867	0	0	0.008	0.006907	217.7249	0	0	0.000572	0	0	0.034303	0	0	0.012309	0	0	0	0	0	0.014013	0	0	0	0	0	0	0.00231	0.228322	0	0	0.000263	0	0
San Mateo	2030	LDA	Aggregate	Aggregate	Electricity	25244.08	809588.1	0	809588.1	122638.4	312567.8	0	0	0	0	0	0	0.002	0.001533	0	0	0	0.008	0.004381	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	LDA	Aggregate	Aggregate	Plug-in Hyb	9770.495	287561.1	127243.4	160317.7	40401	48420.73	0.002843	0	0.117199	0.000375	0	0.001465	0.002	0.001348	0.000407	0	0.001593	0.008	0.00385	119.3761	0	61.72963	0.000352	0	0.040464	0.000449	0	0.018494	0.001195	0	0.176635	0.03873	0.045962	0.467089	0.001743	0	0.193393	0.03873	0.045962	0.467089	0.018225	0.17816	0	1.37819	0.00118	0	0.00061
San Mateo	2030	LDT1	Aggregate	Aggregate	Gasoline	27717.91	705667.7	705667.7	0	127669.4	0	0.047693	0	0.23518	0.000977	0	0.001648	0.002	0.002822	0.001063	0	0.001793	0.008	0.008064	291.8441	0	73.503	0.00227	0	0.057547	0.004614	0	0.028888	0.009274	0	0.271146	0.085215	0.246386	1.458315	0.013533	0	0.29687	0.085215	0.246386	1.458315	0.039865	0.675828	0	2.884818	0.002885	0	0.000727
San Mateo	2030	LDT1	Aggregate	Aggregate	Diesel	0.204115	6.131891	6.131891	0	1.004394	0	0.025448	0	0	0.003365	0	0	0.002	0.002682	0.003517	0	0	0.008	0.007662	360.704	0	0	0.000511	0	0	0.056829	0	0	0.011001	0	0	0	0	0	0.012524	0	0	0	0	0	0	0.0031	0.101404	0	0	0.003418	0	0
San Mateo	2030	LDT1	Aggregate	Aggregate	Electricity	315.4332	10759.94	0	10759.94	1561.79	4154.226	0	0	0	0	0	0	0.002	0.00153	0	0	0	0.008	0.004372	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	LDT1	Aggregate	Aggregate	Plug-in Hyb	248.8694	7950.15	3286.476	4663.674	1029.075	1408.569	0.002656	0	0.117199	0.000235	0	0.000982	0.002	0.001357	0.000256	0	0.001068	0.008	0.003878	111.5238	0	67.77418	0.000329	0	0.040538	0.000421	0	0.018562	0.001116	0	0.176635	0.022993	0.019942	0.267154	0.001629	0	0.193393	0.022993	0.019942	0.267154	0.017362	0.166441	0	1.37819	0.001103	0	0.00067
San Mateo	2030	LDT2	Aggregate	Aggregate	Gasoline	206077.5	5643289	5643289	0	980667.9	0	0.031039	0	0.220236	0.000827	0	0.001417	0.002	0.002768	0.000899	0	0.001541	0.008	0.007907	305.2696	0	76.05021	0.001503	0	0.052526	0.003653	0	0.029181	0.005296	0	0.229711	0.045237	0.123667	0.765395	0.007728	0	0.251505	0.045237	0.123667	0.765395	0.040897	0.539909	0	2.545867	0.003018	0	0.000752
San Mateo	2030	LDT2	Aggregate	Aggregate	Diesel	779.569	21227.36	21227.36	0	3709.708	0	0.028723	0	0	0.003778	0	0	0.002	0.002772	0.003949	0	0	0.008	0.00792	283.3526	0	0	0.000535	0	0	0.044642	0	0	0.011525	0	0	0	0	0	0.013121	0	0	0	0	0	0	0.0031	0.115181	0	0	0.002685	0	0
San Mateo	2030	LDT2	Aggregate	Aggregate	Electricity	4330.718	103349.1	0	103349.1	21553.59	39901.28	0	0	0	0	0	0	0.002	0.001531	0	0	0	0.008	0.004374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	LDT2	Aggregate	Aggregate	Plug-in Hyb	3821.263	114216.7	48686.66	65530.03	15800.92	19792.02	0.002739	0	0.117199	0.000291	0	0.001179	0.002	0.001354	0.000317	0	0.001283	0.008	0.003869	114.9886	0	74.21213	0.000338	0	0.040354	0.00043	0	0.018393	0.001151	0	0.176635	0.026073	0.02498	0.30357	0.00168	0	0.193393	0.026073	0.02498	0.30357	0.017899	0.171627	0	1.37819	0.001137	0	0.000734
San Mateo	2030	LHDT1	Aggregate	Aggregate	Gasoline	13418.94	401266.7	401266.7	0	199922.2	0	0.04859	0.028514	0.462341	0.001251	0	0.000149	0.002	0.0273	0.001361	0	0.000162	0.008	0.078	782.2571	111.312	25.41512	0.002474	0.092233	0.022399	0.003012	0.002564	0.040565	0.010703	0.327199	0.105404	0.022577	0.12944	1.313798	0.015618	0.477448	0.115404	0.022577	0.12944	1.313798	0.045	0.67997	3.773798	3.355298	0.007733	0.00111	0.000251
San Mateo	2030	LHDT1	Aggregate	Aggregate	Diesel	6950.283	217964.5	217964.5	0	87425.82	0	0.484943	1.179571	0	0.017739	0.02636	0	0.003	0.0273	0.018541	0.027552	0	0.012	0.078	610.5039	119.3947	0	0.004593	0.005098	0	0.096185	0.018811	0	0.098884	0.10976	0	0	0	0	0.112573	0.124954	0	0	0	0	0.209503	0.232836	0.909745	0	0.005785	0.001131	0
San Mateo	2030	LHDT1	Aggregate	Aggregate	Electricity	1651.837	70758.49	0	70758.49	23140.54	46352.96	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	LHDT2	Aggregate	Aggregate	Gasoline	1516.427	44034.41	44034.41	0	22592.5	0	0.0535	0.026469	0.446387	0.001188	0	0.000128	0.002	0.03185	0.001292	0	0.000139	0.008	0.091	883.1295	128.7905	24.14624	0.002097	0.08544	0.021117	0.003676	0.002338	0.038045	0.00861	0.303836	0.099505	0.023317	0.135292	1.428649	0.012564	0.443356	0.108945	0.023317	0.135292	1.428649	0.045	0.63201	3.776933	3.316614	0.008731	0.001273	0.000239
San Mateo	2030	LHDT2	Aggregate	Aggregate	Diesel	3226.044	98642.37	98642.37	0	40579.57	0	0.436422	1.156649	0	0.01874	0.026765	0	0.003	0.03185	0.019587	0.027975	0	0.012	0.091	713.7283	191.5832	0	0.004866	0.005098	0	0.112448	0.030184	0	0.104751	0.10976	0	0	0	0	0.119253	0.124954	0	0	0	0	0.212304	0.238694	0.909745	0	0.006763	0.001815	0
San Mateo	2030	LHDT2	Aggregate	Aggregate	Electricity	416.7471	17085.75	0	17085.75	5526.66	11020.92	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	MCY	Aggregate	Aggregate	Gasoline	17265.42	85331.57	85331.57	0	34530.84	0	0.471636	0	0.087961	0.00193	0	0.003402	0.001	0.0042	0.002069	0	0.003639	0.004	0.012	185.2558	0	39.68002	0.129549	0	0.143907	0.035104	0	0.005584	0.790266	0	1.025021	3.535952	3.670486	2.694632	0.977152	0	1.115488	3.535952	3.670486	2.694632	0.00908	9.714966	0	7.581403	0.001831	0	0.000392
San Mateo	2030	MDV	Aggregate	Aggregate	Gasoline	115764.2	3248131	3248131	0	549832.1	0	0.032414	0	0.238074	0.000811	0	0.001423	0.002	0.002792	0.000882	0	0.001547	0.008	0.007976	368.7759	0	92.22249	0.00155	0	0.05581	0.003744	0	0.030164	0.005553	0	0.251972	0.048156	0.134906	0.832269	0.008103	0	0.275878	0.048156	0.134906	0.832269	0.040906	0.545181	0	2.607134	0.003646	0	0.000912
San Mateo	2030	MDV	Aggregate	Aggregate	Diesel	1415.877	38111.74	38111.74	0	6658.508	0	0.017624	0	0	0.002054	0	0	0.002	0.002838	0.002147	0	0	0.008	0.008109	372.2787	0	0	0.000277	0	0	0.058653	0	0	0.005968	0	0	0	0	0	0.006794	0	0	0	0	0	0	0.0031	0.147116	0	0	0.003528	0	0
San Mateo	2030	MDV	Aggregate	Aggregate	Electricity	4329.635	102706.8	0	102706.8	21508.26	39653.32	0	0	0	0	0	0	0.002	0.001532	0	0	0	0.008	0.004377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	MDV	Aggregate	Aggregate	Plug-in Hyb	2286.849	70894.89	30074.66	40820.23	9456.121	12328.93	0.002725	0	0.117199	0.000297	0	0.001215	0.002	0.001355	0.000323	0	0.001322	0.008	0.003872	114.4453	0	90.22943	0.000338	0	0.040515	0.000432	0	0.018541	0.001145	0	0.176635	0.026805	0.026275	0.314563	0.001671	0	0.193393	0.026805	0.026275	0.314563	0.017817	0.170801	0	1.37819	0.001131	0	0.000892
San Mateo	2030	MH	Aggregate	Aggregate	Gasoline	975.2695	8905.399	8905.399	0	97.56596	0	0.146497	0	0.389106	0.001397	0	0.00035	0.003	0.015756	0.001519	0	0.00038	0.012	0.045017	1945.035	0	30.49184	0.005338	0	0.03291	0.013993	0	0.045078	0.017368	0	0.125455	4.324204	0.104731	1.656784	0.025343	0	0.137357	4.324204	0.104731	1.656784	0.045	0.266588	0	2.838247	0.019229	0	0.000301
San Mateo	2030	MH	Aggregate	Aggregate	Diesel	518.1906	4498.521	4498.521	0	53.81906	0	2.677361	0	0	0.030184	0	0	0.004	0.015675	0.031549	0	0	0.016	0.044785	1087.256	0	0	0.003786	0	0	0.171298	0	0	0.081505	0	0	0	0	0	0.092788	0	0	0	0	0	0	0.206555	0.243761	0	0	0.010302	0	0
San Mateo	2030	MHDT	Aggregate	Aggregate	Gasoline	896.2067	46600.57	46600.57	0	17931.3	0	0.14535	0.071332	0.336727	0.001349	0	0.000468	0.003	0.015756	0.001468	0	0.000509	0.012	0.045017	1641.475	495.3697	40.83701	0.005139	0.272865	0.039358	0.010032	0.006541	0.029695	0.022413	1.024632	0.19997	0.016844	0.142325	1.402001	0.032705	1.49514	0.218942	0.016844	0.142325	1.402001	0.045	0.405969	15.25491	4.210824	0.016228	0.004897	0.000404
San Mateo	2030	MHDT	Aggregate	Aggregate	Diesel	4347.362	170380.4	170380.4	0	52605.86	0	0.755775	11.60663	1.523653	0.006958	0.010527	0	0.003	0.015983	0.007273	0.011003	0	0.012	0.045667	1112.069	2136.504	0	0.000749	0.00921	0	0.175207	0.336607	0	0.016126	0.198289	0	0	0	0	0.018358	0.225736	0	0	0	0	0	0	0.215702	0.077124	7.484208	0	0.010531	0.020231	0
San Mateo	2030	MHDT	Aggregate	Aggregate	Electricity	446.3324	23740.44	0	23740.44	6143.241	26136.71	0	0	0	0	0	0	0.003	0.007953	0	0	0	0.012	0.022724	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	MHDT	Aggregate	Aggregate	Natural Ga	59.81429	2526.343	2526.343	0	572.8236	0	0.0963	6.310343	0	0.001402	0.020216	0	0.003	0.016078	0.001525	0.021987	0	0.012	0.045938	974.2403	5301.669	0	0.781312	15.85967	0	0.198605	1.08078	0	0.011163	0.226603	0	0	0	0	0.797386	16.18596	0	0	0	0	0	0	1.06	3.053339	39.52768	0	0	0	0
San Mateo	2030	OBUS	Aggregate	Aggregate	Gasoline	235.2431	10564.99	10564.99	0	4706.745	0	0.160976	0.055683	0.334188	0.001132	0	0.000289	0.003	0.01568	0.001231	0	0.000315	0.012	0.044799	1631.402	356.5246	28.55452	0.004957	0.201951	0.030859	0.010543	0.00494	0.028192	0.021402	0.748646	0.154359	0.024573	0.126962	2.196095	0.03123	1.092423	0.169003	0.024573	0.126962	2.196095	0.045	0.436972	5.788883	3.119712	0.016128	0.003525	0.000282
San Mateo	2030	OBUS	Aggregate	Aggregate	Diesel	1265.064	76747.17	76747.17	0	12416.27	0	0.731147	4.662626	1.324481	0.008334	0.002706	0	0.003	0.017521	0.008711	0.002828	0	0.012	0.050059	1157.144	1158.301	0	0.000821	0.014331	0	0.182309	0.182491	0	0.017683	0.308549	0	0	0	0	0.020131	0.351259	0	0	0	0	0.218276	0.087625	5.772448	0	0.010957	0.010968	0
San Mateo	2030	OBUS	Aggregate	Aggregate	Electricity	18.67716	1366.971	0	1366.971	373.6926	1514.395	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.022399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	OBUS	Aggregate	Aggregate	Natural Ga	14.94448	957.8955	957.8955	0	133.0059	0	0.101418	1.499098	0	0.001484	0.004813	0	0.003	0.016148	0.001614	0.005235	0	0.012	0.046137	931.1349	1169.497	0	0.838494	3.763815	0	0.189818	0.23841	0	0.01198	0.053777	0	0	0	0	0.855745	3.84125	0	0	0	0	1.06	3.385525	9.413723	0	0	0	0
San Mateo	2030	SBUS	Aggregate	Aggregate	Gasoline	87.98822	4038.39	4038.39	0	351.9529	0	0.489617	0.750616	0.559502	0.001063	0	0.000722	0.002	0.015721	0.001156	0	0.000786	0.008	0.044917	757.0149	2429.667	55.27111	0.010391	2.44431	0.075405	0.024791	0.073975	0.052746	0.050694	10.64152	0.434086	0.098112	0.31801	1.752705	0.073972	15.52808	0.47527	0.098112	0.31801	1.752705	0.045	1.308566	82.24088	10.22191	0.007484	0.02402	0.000546
San Mateo	2030	SBUS	Aggregate	Aggregate	Diesel	160.7253	3531.519	3531.519	0	2327.302	0	2.868955	18.37325	0.553036	0.014701	0.012669	0	0.003	0.015721	0.015365	0.013242	0	0.012	0.044917	1113.173	2158.09	0	0.002281	0.007956	0	0.175381	0.340008	0	0.049109	0.1713	0	0	0	0	0.055907	0.195012	0	0	0	0	0.169646	0.15856	5.305748	0	0.010541	0.020436	0
San Mateo	2030	SBUS	Aggregate	Aggregate	Electricity	17.84997	651.998	0	651.998	163.1263	686.851	0	0	0	0	0	0	0.003	0.00786	0	0	0	0.009438	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	SBUS	Aggregate	Aggregate	Natural Ga	7.671522	180.9535	180.9535	0	111.0836	0	0.443878	5.198476	0	0.003378	0.013085	0	0.003	0.015721	0.003674	0.014231	0	0.012	0.044917	1201.138	4122.528	0	3.098317	14.36251	0	0.24486	0.840404	0	0.044269	0.205212	0	0	0	0	3.16206	14.658	0	0	0	0	1.06	10.05674	24.64166	0	0	0	0
San Mateo	2030	UBUS	Aggregate	Aggregate	Gasoline	62.5174	4249.774	4249.774	0	250.0696	0	0.035638	0	0.310547	0.001201	0	0.000164	0.002	0.002072	0.032329	0.001307	0	0.000179	0.008288	0.09237	932.2834	0	37.52663	0.001497	0	0.032416	0.004454	0	0.04913	0.004138	0	0.115554	0.024606	0.097267	0.356985	0.006038	0	0.126517	0.024606	0.097267	0.356985	0.045	0.559001	0	5.953718	0.009217	0	0.000371
San Mateo	2030	UBUS	Aggregate	Aggregate	Diesel	238.4518	18140.33	18140.33	0	953.8071	0	0.376197	0	0	0.006839	0	0	0.008	0.008109	0.0385	0.007148	0	0	0.032436	0.11	1228.547	0	0	0.003149	0	0	0.193558	0	0	0.067807	0	0	0	0	0	0.077193	0	0	0	0	0	0.22	0.077324	0	0	0.011641	0	0
San Mateo	2030	UBUS	Aggregate	Aggregate	Electricity	72.67394	6853.165	0	6853.165	290.6957	11946.74	0	0	0	0	0	0	0.007651	0.01925	0	0	0	0.030604	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	UBUS	Aggregate	Aggregate	Natural Ga	75.54888	5381.015	5381.015	0	302.1955	0	0.055771	0	0	0.000273	0	0	0.007786	0.0385	0.000286	0	0	0.031145	0.11	1266.418	0	0	4.115508	0	0	0.258168	0	0	0.058802	0	0	0	0	0	4.200177	0	0	0	0	0	0.97	46.76788	0	0	0	0	0

CalEEMod EMFAC2021 Emission Factors Input

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.0041	0.002311	0.015963	0.229026242	0.006914	0	0	0.110559	0
A	CH4_RUNEX	0.001091	0.002215	0.001451	0.001466	0.00289	0.003582	0.009624	0.18305022	0.010248	0.641431362	0.129549	0.072674	0.004817
A	CH4_STREX	0.043749	0.056722	0.051039	0.052888	0.014423	0.007552	0.009135	3.05733E-07	0.008239	0.004511552	0.143907	0.008986	0.021494
A	CO_IDLEX	0	0	0	0	0.183464	0.137123	0.628743	4.574443284	0.49944	0	0	2.802822	0
A	CO_RUNEX	0.428969	0.660194	0.521738	0.516941	0.468992	0.321574	0.163527	1.442396346	0.162707	7.377393404	9.714966	0.912101	0.258927
A	CO_STREX	2.12334	2.838305	2.46486	2.462348	2.160461	1.186135	0.977377	0.016590448	0.832894	0.828623357	7.581403	1.218105	1.853708
A	CO2_NBIO_IDLEX	0	0	0	0	7.483418	12.87527	130.0816	692.3906648	88.86546	0	0	200.5332	0
A	CO2_NBIO_RUNEX	218.1367	285.5306	296.1322	352.6558	647.7805	684.09	1103.524	1514.609777	1192.98	954.9035774	185.2558	857.525	1657.153
A	CO2_NBIO_STREX	56.37559	72.5759	74.14137	87.76861	16.36469	8.635527	9.478708	0.198459779	7.623425	5.222861474	39.68002	6.586443	19.91475
A	NOX_IDLEX	0	0	0	0	0.027637	0.059703	0.658867	3.566245811	0.336592	0	0	1.035723	0
A	NOX_RUNEX	0.021508	0.04649	0.029936	0.03068	0.181449	0.284207	0.558221	1.874181967	0.646065	0.210138516	0.471636	1.45062	0.995886
A	NOX_STREX	0.176589	0.231426	0.213197	0.224713	0.2977	0.159643	1.115695	2.649753409	1.022028	0.043221096	0.087961	0.50246	0.254132
A	PM10_IDLEX	0	0	0	0	0.000617	0.001429	0.000636	0.00208163	0.000207	0	0	0.000758	0
A	PM10_PMBW	0.006346	0.007963	0.007767	0.007787	0.074001	0.086134	0.043306	0.093281284	0.048975	0.156110891	0.012	0.043175	0.04494
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009264	0.01047	0.012	0.034539384	0.012	0.061827696	0.004	0.009879	0.013342
A	PM10_RUNEX	0.0008	0.001038	0.000883	0.000858	0.006648	0.01245	0.005391	0.020667549	0.00762	0.003949707	0.002069	0.007092	0.011597
A	PM10_STREX	0.001471	0.001765	0.001499	0.001469	0.000104	4.97E-05	0.000118	1.82388E-06	8.4E-05	2.48573E-05	0.003639	9.36E-05	0.000248
A	PM25_IDLEX	0	0	0	0	0.00059	0.001367	0.000608	0.001985313	0.000198	0	0	0.000723	0
A	PM25_PMBW	0.002221	0.002787	0.002718	0.002725	0.0259	0.030147	0.015157	0.032648449	0.017141	0.054638812	0.0042	0.015111	0.015729
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002316	0.002617	0.003	0.008634846	0.003	0.015456924	0.001	0.00247	0.003336
A	PM25_RUNEX	0.000736	0.000955	0.000812	0.00079	0.006331	0.011898	0.005147	0.019767546	0.007285	0.003772866	0.00193	0.006762	0.011058
A	PM25_STREX	0.001353	0.001623	0.001378	0.001351	9.57E-05	4.57E-05	0.000109	1.67699E-06	7.72E-05	2.28554E-05	0.003402	8.61E-05	0.000228
A	ROG_DIURN	0.208006	0.310821	0.155511	0.165232	0.056781	0.034294	0.016264	0.000235524	0.029304	0.012421079	2.694632	0.052216	10.81642
A	ROG_HTSK	0.057819	0.083701	0.043823	0.045503	0.014537	0.008339	0.00391	6.49199E-05	0.00656	0.003424597	3.535952	0.011692	2.824213
A	ROG_IDLEX	0	0	0	0	0.016598	0.012899	0.023221	0.271787437	0.032176	0	0	0.326882	0
A	ROG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	ROG_RUNEX	0.003852	0.009047	0.005145	0.005303	0.037462	0.06705	0.015705	0.022524009	0.017791	0.045171786	0.790266	0.045956	0.038893
A	ROG_RUNLS	0.160749	0.241641	0.119083	0.126689	0.083346	0.048385	0.033035	0.000391321	0.033896	0.013537374	3.670486	0.037896	0.068402
A	ROG_STREX	0.197071	0.267146	0.223211	0.238678	0.067869	0.035586	0.046415	1.65627E-06	0.04121	0.01608249	1.025021	0.051728	0.081937
A	SO2_IDLEX	0	0	0	0	7.29E-05	0.000123	0.001195	0.005616953	0.000834	0	0	0.001828	0
A	SO2_RUNEX	0.002156	0.002823	0.002927	0.003485	0.006325	0.006582	0.010485	0.013042303	0.011283	0.007230239	0.001831	0.008027	0.016233
A	SO2_STREX	0.000557	0.000717	0.000733	0.000868	0.000162	8.54E-05	9.37E-05	1.96198E-06	7.54E-05	5.16333E-05	0.000392	6.51E-05	0.000197
A	TOG_DIURN	0.208006	0.310821	0.155511	0.165232	0.056781	0.034294	0.016264	0.000235524	0.029304	0.012421079	0.066855	0.052216	10.81642
A	TOG_HTSK	0.057819	0.083701	0.043823	0.045503	0.014537	0.008339	0.00391	6.49199E-05	0.00656	0.003424597	3.535952	0.011692	2.824213
A	TOG_IDLEX	0	0	0	0	0.023432	0.017024	0.04258	0.526899253	0.043038	0	0	0.511291	0
A	TOG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	TOG_RUNEX	0.005617	0.013201	0.007494	0.007717	0.044644	0.077093	0.027406	0.208786723	0.030062	0.693940204	0.977152	0.127141	0.047979
A	TOG_RUNLS	0.160749	0.241641	0.119083	0.126689	0.083346	0.048385	0.033035	0.000391321	0.033896	0.013537374	3.670486	0.037896	0.068402
A	TOG_STREX	0.215768	0.292491	0.244388	0.261323	0.074308	0.038963	0.050819	1.8134E-06	0.04512	0.017608302	1.115488	0.056636	0.08971
A	N2O_IDLEX	0	0	0	0	0.000532	0.001598	0.019855	0.113681015	0.013363	0	0	0.02289	0
A	N2O_RUNEX	0.002889	0.0045	0.003674	0.00417	0.032136	0.070442	0.126706	0.244505965	0.159364	0.142077729	0.035104	0.090896	0.066786
A	N2O_STREX	0.023753	0.02846	0.028293	0.028531	0.02612	0.013606	0.006893	1.7284E-07	0.007527	0.006837798	0.005584	0.006286	0.029442

CalEEMod EMFAC2021 Fleet Mix Input

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.392609	0.040642	0.308969	0.177896	0.031644	0.007414	0.008262	0.002362	0.002204	0.000645	0.024811	0.000394	0.002146

Attachment 4: Project Construction Emissions and Health Risk Calculations

1 Hayward Ave, San Mateo, 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)
2022 & 2023	Construction	0.0214	Point	24	42.8	0.01302	1.64E-03	6.83E-05
Total		***0.0214***			***42.8***	***0.0130***	***0.0016***	

Emissions assumed to be evenly distributed over each construction areas

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

1 Hayward Ave, San Mateo, 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 $g/s/m^2$
2022 & 2023	Construction	CON_FUG	0.0032	6.5	0.00197	2.49E-04	1241.4	2.00E-07
Total			***0.0032***	***6.5***	***0.0020***	***0.0002***		

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 Conditions of Approval

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Emissions per Point Source (g/s)
2022 & 2023	Construction	0.0013	Point	24	2.5	0.00077	9.74E-05	4.06E-06
Total		***0.0013***			***2.5***	***0.0008***	***0.0001***	

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 Conditions of Approval

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2022 & 2023	Construction	CON_FUG	0.0015	3.1	0.00093	1.18E-04	1241.4	9.48E-08
Total			***0.0015***	***3.1***	***0.0009***	***0.0001***		

Emissions assumed to be evenly distributed over each construction areas

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

1 Hayward Ave, San Mateo, CA
Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Conditions of Approval

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Infant/Child	Adult	(-)	($\mu g/m^3$)
2022 & 2023	0.0934	0.0158	16.61	0.27	0.02	0.11
Total	-	-	**16.61**	**0.27**		-
Maximum	0.0934	0.0158	**-**	**-**	**0.02**	**0.11**

Maximum Impacts at MEI Location - With Conditions of Approval

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Infant/Child	Adult	(-)	($\mu g/m^3$)
2022 & 2023	0.0056	0.0075	0.99	0.02	0.00	0.01
Total	-	-	**0.99**	**0.02**	-	-
Maximum	0.0056	0.0075	**-**	**-**	**0.00**	**0.01**

- Tier 4 Interim Engine and BMP Conditions of Approval

Maximum Impacts at Centennial Montessori Preschool

Construction Year	Without COA Emissions				
	Maximum Concentrations		Child Cancer Risk	Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	(per million)	(-)	($\mu g/m^3$)
2022 & 2023	0.0075	0.0015	3.59	0.0015	0.009
Total	-	-	**3.59**	-	-
Maximum	0.0075	0.0015	**-**	**0.0015**	**0.009**

1 Hayward Ave, San Mateo, CA - Construction Impacts - Without Conditions of Approval
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 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

			Infant/Child - Exposure Information				Adult - Exposure Information						
							Modeled				Maximum		
Exposure Year	Exposure Duration (years)	Age	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2022 & 2023	0.0929	10	1.26	2022 & 2023	0.0929	-	-			
1	1	0 - 1	2022 & 2023	0.0929	10	15.26	2022 & 2023	0.0929	1	0.27	0.019	0.005	0.10
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
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						**16.53**				**0.27**			

* Third trimester of pregnancy

1 Hayward Ave, San Mateo, CA - Construction Impacts - Without Conditions of Approval
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				Adult - Exposure Information				
				DPM Conc (ug/m3)	Age	Infant/Child		Modeled DPM Conc (ug/m3)	Age	Adult
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**
0	0.25	-0.25 - 0*	2022 & 2023	0.0934	10	1.27	2022 & 2023	0.0934	-	-
1	1	0 - 1	2022 & 2023	0.0934	10	15.34	2022 & 2023	0.0934	1	0.27
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00
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						**16.61**				**0.27**

Maximum		
Hazard Index	**Fugitive PM2.5**	**Total PM2.5**
0.019	0.016	0.11

* Third trimester of pregnancy

1 Hayward Ave, San Mateo, CA - Construction Impacts - Without Conditions of Approval
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				Adult - Exposure Information				
				DPM Conc (ug/m3)	Age	Infant/Child		Modeled DPM Conc (ug/m3)	Age	Adult
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**
0	0.25	-0.25 - 0*	2022 & 2023	0.0298	10	0.41	2022 & 2023	0.0298	-	-
1	1	0 - 1	2022 & 2023	0.0298	10	4.90	2022 & 2023	0.0298	1	0.09
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00
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						**5.31**				**0.09**

Maximum		
Hazard Index	**Fugitive PM2.5**	**Total PM2.5**
0.01	0.033	0.06

* Third trimester of pregnancy

1 Hayward Ave, San Mateo, CA - Construction Impacts - With Conditions of Approval
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 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

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2022 & 2023	0.0055	10	0.08	2022 & 2023	0.0055	-	-			
1	1	0 - 1	2022 & 2023	0.0055	10	0.91	2022 & 2023	0.0055	1	0.02	0.001	0.00	0.01
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
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						**0.98**				**0.02**			

* Third trimester of pregnancy

1 Hayward Ave, San Mateo, CA - Construction Impacts - With Conditions of Approval
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				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled		Age	Adult			
Exposure	Exposure				Sensitivity	Cancer	DPM Conc (ug/m3)		Sensitivity	Cancer	Hazard	Fugitive	Total
Year	Duration (years)	Age	Year	Annual	Factor	Risk (per million)	Year	Annual	Factor	Risk (per million)	Index	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2022 & 2023	0.0056	10	0.08	2022 & 2023	0.0056	-	-			
1	1	0 - 1	2022 & 2023	0.0056	10	0.91	2022 & 2023	0.0056	1	0.02	0.001	0.01	0.01
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
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						**0.99**				**0.02**			

* Third trimester of pregnancy

1 Hayward Ave, San Mateo, CA - Construction Impacts - With Conditions of Approval
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				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled		Age	Adult			
Exposure	Exposure				Sensitivity	Cancer	DPM Conc (ug/m3)		Sensitivity	Cancer	Hazard	Fugitive	Total
Year	Duration (years)	Age	Year	Annual	Factor	Risk (per million)	Year	Annual	Factor	Risk (per million)	Index	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2022 & 2023	0.0018	10	0.02	2022 & 2023	0.0018	-	-			
1	1	0 - 1	2022 & 2023	0.0018	10	0.29	2022 & 2023	0.0018	1	0.01	0.000	0.02	0.02
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
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						**0.31**				**0.01**			

* Third trimester of pregnancy

1 Hayward Ave, San Mateo, CA - Construction Impacts - Without Conditions of Approval
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Centennial Montessori Preschool - 1 meter - 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/9 hrs) x (7 days/5 days) = 3.73
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

	School 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 =	250	250	250
AT =	70	70	70
SAF =	3.73	3.73	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	DPM Conc (ug/m3) Annual	Age* Sensitivity Factor	Child Cancer Risk (per million)
1	1	1 - 2	2022 & 2023	0.0075	10	3.6
2	1			0.0000	3	0.0
3	1			0.0000	3	0.0
4	1			0.0000	3	0.0
5	1			0.0000	3	0.0
6	1			0.0000	3	0.0
7	1			0.0000	3	0.0
8	1			0.0000	3	0.0
9	1			0.0000	3	0.0
Total Increased Cancer Risk						**3.59**

* Children assumed to be 1 years of age or older with 1 year of Construction Exposure

Maximum		
Hazard Index	**Fugitive PM2.5**	**Total PM2.5**
0.0015	0.0015	0.009

Attachment 5: Community Risk Modeling Information and Calculations

CT-EMFAC2017 Emissions Factors for El Camino Real 2022, 2024

```
          File Name:   El Camino Real 2022.EF
CT-EMFAC2017 Version:   1.0.2.27401
           Run Date:   10/29/2021 12:18:59 PM
               Area:   San Mateo (SF)
      Analysis Year:   2022
             Season:   Annual

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

Vehicle Category        VMT Fraction            Diesel VMT Fraction     Gas VMT Fraction
                        Across Category         Within Category         Within Category
         Truck 1             0.017                   0.472                   0.528
         Truck 2             0.014                   0.870                   0.114
       Non-Truck             0.969                   0.017                   0.964

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

              Road Type:       Major/Collector
     Silt Loading Factor:                  CARB        0.032 g/m2
Precipitation Correction:                  CARB        P = 60 days     N = 365 days

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

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

       Pollutant Name        35 mph
                PM2.5      0.001702
                  TOG      0.038307
           Diesel PM       0.000503

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

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

       Pollutant Name   Emission Factor
                  TOG          1.245454

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.002046

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.016802

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.014819

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

```
          File Name:   El Camino Real 2024.EF
CT-EMFAC2017 Version:   1.0.2.27401
            Run Date:   10/29/2021 12:21:12 PM
                Area:   San Mateo (SF)
       Analysis Year:   2024
              Season:   Annual
```

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.017	0.491	0.509
Truck 2	0.014	0.870	0.113
Non-Truck	0.969	0.017	0.957

```
              Road Type:       Major/Collector
     Silt Loading Factor:                 CARB        0.032 g/m2
Precipitation Correction:                 CARB        P = 60 days     N = 365 days
```

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

Pollutant Name	35 mph
PM2.5	0.001347
TOG	0.035830
Diesel PM	0.000240

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

Pollutant Name	Emission Factor
TOG	1.148758

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

Pollutant Name	Emission Factor
PM2.5	0.002045

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

Pollutant Name	Emission Factor
PM2.5	0.016809

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

Pollutant Name	Emission Factor
PM2.5	0.014921

END

El Camino Real Traffic Emissions and Health Risk Calculations 2022, 2024

1 Hayward Ave, San Mateo, CA - Off-Site Residential
Cumulative Operation - El Camino Real
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_ECR	El Camino Real Northbound	NB	3	665.9	0.41	17.0	55.7	3.4	35	19,364
DPM_SB_ECR	El Camino Real Southbound	SB	3	665.3	0.41	17.0	55.7	3.4	35	19,364
									Total	38,729

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00050			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and DPM Emissions - DPM_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.85%	746	4.31E-05	9	6.74%	1305	7.55E-05	17	6.40%	1240	7.17E-05
2	3.18%	616	3.56E-05	10	8.25%	1597	9.23E-05	18	4.10%	794	4.59E-05
3	2.35%	454	2.63E-05	11	6.24%	1208	6.98E-05	19	2.38%	462	2.67E-05
4	1.01%	195	1.13E-05	12	7.41%	1435	8.30E-05	20	1.21%	235	1.36E-05
5	1.01%	195	1.13E-05	13	6.74%	1305	7.55E-05	21	3.05%	591	3.42E-05
6	2.18%	422	2.44E-05	14	6.57%	1273	7.36E-05	22	5.06%	981	5.67E-05
7	4.73%	916	5.29E-05	15	5.90%	1143	6.61E-05	23	3.35%	649	3.75E-05
8	3.39%	656	3.79E-05	16	4.23%	819	4.73E-05	24	0.67%	130	7.50E-06
								Total		19,364	

2022 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.85%	746	4.31E-05	9	6.74%	1305	7.54E-05	17	6.40%	1240	7.16E-05
2	3.18%	616	3.56E-05	10	8.25%	1597	9.22E-05	18	4.10%	794	4.58E-05
3	2.35%	454	2.62E-05	11	6.24%	1208	6.98E-05	19	2.38%	462	2.67E-05
4	1.01%	195	1.12E-05	12	7.41%	1435	8.29E-05	20	1.21%	235	1.36E-05
5	1.01%	195	1.12E-05	13	6.74%	1305	7.54E-05	21	3.05%	591	3.42E-05
6	2.18%	422	2.44E-05	14	6.57%	1273	7.35E-05	22	5.06%	981	5.66E-05
7	4.73%	916	5.29E-05	15	5.90%	1143	6.60E-05	23	3.35%	649	3.75E-05
8	3.39%	656	3.79E-05	16	4.23%	819	4.73E-05	24	0.67%	130	7.49E-06
								Total		19,364	

1 Hayward Ave, San Mateo, CA - Off-Site Residential
Cumulative Operation - El Camino Real
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_ECR	El Camino Real Northbound	NB	3	665.9	0.41	17.0	56	1.3	35	19,364
PM2.5_SB_ECR	El Camino Real Southbound	SB	3	665.3	0.41	17.0	56	1.3	35	19,364
									Total	38,729

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.001702			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	217	4.24E-05	9	7.12%	1379	2.70E-04	17	7.43%	1439	2.81E-04
2	0.41%	80	1.57E-05	10	4.38%	848	1.66E-04	18	8.24%	1595	3.12E-04
3	0.38%	73	1.42E-05	11	4.65%	900	1.76E-04	19	5.72%	1108	2.17E-04
4	0.17%	33	6.54E-06	12	5.89%	1140	2.23E-04	20	4.30%	833	1.63E-04
5	0.45%	88	1.72E-05	13	6.17%	1195	2.34E-04	21	3.26%	630	1.23E-04
6	0.85%	165	3.22E-05	14	6.05%	1171	2.29E-04	22	3.31%	641	1.25E-04
7	3.73%	723	1.41E-04	15	7.05%	1366	2.67E-04	23	2.49%	482	9.42E-05
8	7.77%	1504	2.94E-04	16	7.19%	1392	2.72E-04	24	1.87%	363	7.10E-05
								Total		19,364	

2022 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	217	4.23E-05	9	7.12%	1379	2.69E-04	17	7.43%	1439	2.81E-04
2	0.41%	80	1.57E-05	10	4.38%	848	1.66E-04	18	8.24%	1595	3.12E-04
3	0.38%	73	1.42E-05	11	4.65%	900	1.76E-04	19	5.72%	1108	2.17E-04
4	0.17%	33	6.54E-06	12	5.89%	1140	2.23E-04	20	4.30%	833	1.63E-04
5	0.45%	88	1.72E-05	13	6.17%	1195	2.34E-04	21	3.26%	630	1.23E-04
6	0.85%	165	3.22E-05	14	6.05%	1171	2.29E-04	22	3.31%	641	1.25E-04
7	3.73%	723	1.41E-04	15	7.05%	1366	2.67E-04	23	2.49%	482	9.41E-05
8	7.77%	1504	2.94E-04	16	7.19%	1392	2.72E-04	24	1.87%	363	7.09E-05
								Total		19,364	

1 Hayward Ave, San Mateo, CA - Off-Site Residential
Cumulative Operation - El Camino Real
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_ECR	El Camino Real Northbound	NB	3	665.9	0.41	17.0	56	1.3	35	19,364
TEXH_SB_ECR	El Camino Real Southbound	SB	3	665.3	0.41	17.0	56	1.3	35	19,364
									Total	38,729

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.03831			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	217	9.53E-04	9	7.12%	1379	6.07E-03	17	7.43%	1439	6.33E-03
2	0.41%	80	3.53E-04	10	4.38%	848	3.73E-03	18	8.24%	1595	7.02E-03
3	0.38%	73	3.20E-04	11	4.65%	900	3.96E-03	19	5.72%	1108	4.88E-03
4	0.17%	33	1.47E-04	12	5.89%	1140	5.02E-03	20	4.30%	833	3.67E-03
5	0.45%	88	3.86E-04	13	6.17%	1195	5.26E-03	21	3.26%	630	2.78E-03
6	0.85%	165	7.25E-04	14	6.05%	1171	5.16E-03	22	3.31%	641	2.82E-03
7	3.73%	723	3.18E-03	15	7.05%	1366	6.01E-03	23	2.49%	482	2.12E-03
8	7.77%	1504	6.62E-03	16	7.19%	1392	6.13E-03	24	1.87%	363	1.60E-03
								Total		19,364	

2022 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	217	9.52E-04	9	7.12%	1379	6.06E-03	17	7.43%	1439	6.33E-03
2	0.41%	80	3.53E-04	10	4.38%	848	3.73E-03	18	8.24%	1595	7.02E-03
3	0.38%	73	3.20E-04	11	4.65%	900	3.96E-03	19	5.72%	1108	4.88E-03
4	0.17%	33	1.47E-04	12	5.89%	1140	5.02E-03	20	4.30%	833	3.67E-03
5	0.45%	88	3.86E-04	13	6.17%	1195	5.26E-03	21	3.26%	630	2.77E-03
6	0.85%	165	7.24E-04	14	6.05%	1171	5.15E-03	22	3.31%	641	2.82E-03
7	3.73%	723	3.18E-03	15	7.05%	1366	6.01E-03	23	2.49%	482	2.12E-03
8	7.77%	1504	6.62E-03	16	7.19%	1392	6.12E-03	24	1.87%	363	1.60E-03
								Total		19,364	

1 Hayward Ave, San Mateo, CA - Off-Site Residential
Cumulative Operation - El Camino Real
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_ECR	El Camino Real Northbound	NB	3	665.9	0.41	17.0	56	1.3	35	19,364
TEVAP_SB_ECR	El Camino Real Southbound	SB	3	665.3	0.41	17.0	56	1.3	35	19,364
									Total	38,729

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	1.24545			
Emissions per Vehicle per Mile (g/VMT)	0.03558			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	217	8.86E-04	9	7.12%	1379	5.64E-03	17	7.43%	1439	5.88E-03
2	0.41%	80	3.28E-04	10	4.38%	848	3.47E-03	18	8.24%	1595	6.52E-03
3	0.38%	73	2.97E-04	11	4.65%	900	3.68E-03	19	5.72%	1108	4.53E-03
4	0.17%	33	1.37E-04	12	5.89%	1140	4.66E-03	20	4.30%	833	3.41E-03
5	0.45%	88	3.59E-04	13	6.17%	1195	4.89E-03	21	3.26%	630	2.58E-03
6	0.85%	165	6.74E-04	14	6.05%	1171	4.79E-03	22	3.31%	641	2.62E-03
7	3.73%	723	2.96E-03	15	7.05%	1366	5.59E-03	23	2.49%	482	1.97E-03
8	7.77%	1504	6.15E-03	16	7.19%	1392	5.69E-03	24	1.87%	363	1.48E-03
								Total		19,364	

2022 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	217	8.85E-04	9	7.12%	1379	5.63E-03	17	7.43%	1439	5.88E-03
2	0.41%	80	3.28E-04	10	4.38%	848	3.46E-03	18	8.24%	1595	6.52E-03
3	0.38%	73	2.97E-04	11	4.65%	900	3.68E-03	19	5.72%	1108	4.53E-03
4	0.17%	33	1.37E-04	12	5.89%	1140	4.66E-03	20	4.30%	833	3.41E-03
5	0.45%	88	3.59E-04	13	6.17%	1195	4.88E-03	21	3.26%	630	2.58E-03
6	0.85%	165	6.73E-04	14	6.05%	1171	4.79E-03	22	3.31%	641	2.62E-03
7	3.73%	723	2.95E-03	15	7.05%	1366	5.58E-03	23	2.49%	482	1.97E-03
8	7.77%	1504	6.15E-03	16	7.19%	1392	5.69E-03	24	1.87%	363	1.48E-03
								Total		19,364	

1 Hayward Ave, San Mateo, CA - Off-Site Residential
Cumulative Operation - El Camino Real
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = **2022**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_ECR	El Camino Real Northbound	NB	3	665.9	0.41	17.0	56	1.3	35	19,364
FUG_SB_ECR	El Camino Real Southbound	SB	3	665.3	0.41	17.0	56	1.3	35	19,364
									Total	38,729

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00205			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680			
Road Dust - Emissions per Vehicle (g/VMT)	0.01482			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03367			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	217	8.38E-04	9	7.12%	1379	5.33E-03	17	7.43%	1439	5.57E-03
2	0.41%	80	3.11E-04	10	4.38%	848	3.28E-03	18	8.24%	1595	6.17E-03
3	0.38%	73	2.81E-04	11	4.65%	900	3.48E-03	19	5.72%	1108	4.29E-03
4	0.17%	33	1.29E-04	12	5.89%	1140	4.41E-03	20	4.30%	833	3.23E-03
5	0.45%	88	3.40E-04	13	6.17%	1195	4.63E-03	21	3.26%	630	2.44E-03
6	0.85%	165	6.37E-04	14	6.05%	1171	4.53E-03	22	3.31%	641	2.48E-03
7	3.73%	723	2.80E-03	15	7.05%	1366	5.29E-03	23	2.49%	482	1.86E-03
8	7.77%	1504	5.82E-03	16	7.19%	1392	5.39E-03	24	1.87%	363	1.40E-03
								Total		19,364	

2022 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	217	8.37E-04	9	7.12%	1379	5.33E-03	17	7.43%	1439	5.56E-03
2	0.41%	80	3.10E-04	10	4.38%	848	3.28E-03	18	8.24%	1595	6.17E-03
3	0.38%	73	2.81E-04	11	4.65%	900	3.48E-03	19	5.72%	1108	4.29E-03
4	0.17%	33	1.29E-04	12	5.89%	1140	4.41E-03	20	4.30%	833	3.22E-03
5	0.45%	88	3.39E-04	13	6.17%	1195	4.62E-03	21	3.26%	630	2.44E-03
6	0.85%	165	6.37E-04	14	6.05%	1171	4.53E-03	22	3.31%	641	2.48E-03
7	3.73%	723	2.80E-03	15	7.05%	1366	5.28E-03	23	2.49%	482	1.86E-03
8	7.77%	1504	5.81E-03	16	7.19%	1392	5.38E-03	24	1.87%	363	1.40E-03
								Total		19,364	

1 Hayward Ave, San Mateo, CA - On-Site Residential
Cumulative Operation - El Camino Real
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = **2024**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_ECR	El Camino Real Northbound	NB	3	665.9	0.41	17.0	55.7	3.4	35	19,748
DPM_SB_ECR	El Camino Real Southbound	SB	3	665.3	0.41	17.0	55.7	3.4	35	19,748
									Total	39,496

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00024			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.80%	751	2.07E-05	9	6.65%	1313	3.62E-05	17	6.48%	1280	3.53E-05
2	3.14%	620	1.71E-05	10	8.30%	1639	4.52E-05	18	3.84%	758	2.09E-05
3	2.48%	490	1.35E-05	11	6.32%	1247	3.44E-05	19	2.35%	464	1.28E-05
4	0.99%	196	5.40E-06	12	7.64%	1508	4.16E-05	20	1.19%	235	6.50E-06
5	0.99%	196	5.40E-06	13	6.81%	1345	3.71E-05	21	2.81%	555	1.53E-05
6	2.15%	424	1.17E-05	14	6.65%	1313	3.62E-05	22	4.79%	947	2.61E-05
7	4.83%	954	2.63E-05	15	5.99%	1182	3.26E-05	23	3.47%	685	1.89E-05
8	3.34%	660	1.82E-05	16	4.33%	856	2.36E-05	24	0.66%	131	3.60E-06
								Total		19,748	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.80%	751	2.07E-05	9	6.65%	1313	3.62E-05	17	6.48%	1280	3.53E-05
2	3.14%	620	1.71E-05	10	8.30%	1639	4.52E-05	18	3.84%	758	2.09E-05
3	2.48%	490	1.35E-05	11	6.32%	1247	3.44E-05	19	2.35%	464	1.28E-05
4	0.99%	196	5.40E-06	12	7.64%	1508	4.16E-05	20	1.19%	235	6.49E-06
5	0.99%	196	5.40E-06	13	6.81%	1345	3.71E-05	21	2.81%	555	1.53E-05
6	2.15%	424	1.17E-05	14	6.65%	1313	3.62E-05	22	4.79%	947	2.61E-05
7	4.83%	954	2.63E-05	15	5.99%	1182	3.26E-05	23	3.47%	685	1.89E-05
8	3.34%	660	1.82E-05	16	4.33%	856	2.36E-05	24	0.66%	131	3.60E-06
								Total		19,748	

1 Hayward Ave, San Mateo, CA - On-Site Residential
Cumulative Operation - El Camino Real
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_ECR	El Camino Real Northbound	NB	3	665.9	0.41	17.0	56	1.3	35	19,748
PM2.5_SB_ECR	El Camino Real Southbound	SB	3	665.3	0.41	17.0	56	1.3	35	19,748
									Total	39,496

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.001347			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	221	3.41E-05	9	7.12%	1406	2.18E-04	17	7.43%	1467	2.27E-04
2	0.42%	82	1.27E-05	10	4.38%	864	1.34E-04	18	8.23%	1625	2.52E-04
3	0.38%	75	1.16E-05	11	4.65%	919	1.42E-04	19	5.73%	1132	1.75E-04
4	0.18%	35	5.39E-06	12	5.90%	1164	1.80E-04	20	4.30%	849	1.31E-04
5	0.46%	91	1.41E-05	13	6.17%	1219	1.89E-04	21	3.25%	643	9.95E-05
6	0.85%	168	2.59E-05	14	6.05%	1194	1.85E-04	22	3.31%	654	1.01E-04
7	3.73%	737	1.14E-04	15	7.05%	1392	2.16E-04	23	2.48%	490	7.59E-05
8	7.76%	1533	2.37E-04	16	7.18%	1418	2.20E-04	24	1.88%	371	5.74E-05
								Total		19,748	

2024 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	221	3.41E-05	9	7.12%	1406	2.17E-04	17	7.43%	1467	2.27E-04
2	0.42%	82	1.27E-05	10	4.38%	864	1.34E-04	18	8.23%	1625	2.51E-04
3	0.38%	75	1.15E-05	11	4.65%	919	1.42E-04	19	5.73%	1132	1.75E-04
4	0.18%	35	5.39E-06	12	5.90%	1164	1.80E-04	20	4.30%	849	1.31E-04
5	0.46%	91	1.41E-05	13	6.17%	1219	1.89E-04	21	3.25%	643	9.94E-05
6	0.85%	168	2.59E-05	14	6.05%	1194	1.85E-04	22	3.31%	654	1.01E-04
7	3.73%	737	1.14E-04	15	7.05%	1392	2.15E-04	23	2.48%	490	7.58E-05
8	7.76%	1533	2.37E-04	16	7.18%	1418	2.19E-04	24	1.88%	371	5.73E-05
								Total		19,748	

1 Hayward Ave, San Mateo, CA - On-Site Residential
Cumulative Operation - El Camino Real
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_ECR	El Camino Real Northbound	NB	3	665.9	0.41	17.0	56	1.3	35	19,748
TEXH_SB_ECR	El Camino Real Southbound	SB	3	665.3	0.41	17.0	56	1.3	35	19,748
									Total	39,496

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.03583			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	221	9.08E-04	9	7.12%	1406	5.79E-03	17	7.43%	1467	6.04E-03
2	0.42%	82	3.38E-04	10	4.38%	864	3.56E-03	18	8.23%	1625	6.69E-03
3	0.38%	75	3.07E-04	11	4.65%	919	3.78E-03	19	5.73%	1132	4.66E-03
4	0.18%	35	1.43E-04	12	5.90%	1164	4.79E-03	20	4.30%	849	3.50E-03
5	0.46%	91	3.76E-04	13	6.17%	1219	5.02E-03	21	3.25%	643	2.65E-03
6	0.85%	168	6.90E-04	14	6.05%	1194	4.92E-03	22	3.31%	654	2.69E-03
7	3.73%	737	3.04E-03	15	7.05%	1392	5.73E-03	23	2.48%	490	2.02E-03
8	7.76%	1533	6.31E-03	16	7.18%	1418	5.84E-03	24	1.88%	371	1.53E-03
								Total		19,748	

2024 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	221	9.08E-04	9	7.12%	1406	5.78E-03	17	7.43%	1467	6.04E-03
2	0.42%	82	3.38E-04	10	4.38%	864	3.56E-03	18	8.23%	1625	6.69E-03
3	0.38%	75	3.07E-04	11	4.65%	919	3.78E-03	19	5.73%	1132	4.66E-03
4	0.18%	35	1.43E-04	12	5.90%	1164	4.79E-03	20	4.30%	849	3.49E-03
5	0.46%	91	3.75E-04	13	6.17%	1219	5.02E-03	21	3.25%	643	2.64E-03
6	0.85%	168	6.89E-04	14	6.05%	1194	4.91E-03	22	3.31%	654	2.69E-03
7	3.73%	737	3.03E-03	15	7.05%	1392	5.73E-03	23	2.48%	490	2.02E-03
8	7.76%	1533	6.31E-03	16	7.18%	1418	5.83E-03	24	1.88%	371	1.53E-03
								Total		19,748	

1 Hayward Ave, San Mateo, CA - On-Site Residential
Cumulative Operation - El Camino Real
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_ECR	El Camino Real Northbound	NB	3	665.9	0.41	17.0	56	1.3	35	19,748
TEVAP_SB_ECR	El Camino Real Southbound	SB	3	665.3	0.41	17.0	56	1.3	35	19,748
									Total	39,496

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	1.14876			
Emissions per Vehicle per Mile (g/VMT)	0.03282			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	221	8.32E-04	9	7.12%	1406	5.30E-03	17	7.43%	1467	5.53E-03
2	0.42%	82	3.10E-04	10	4.38%	864	3.26E-03	18	8.23%	1625	6.13E-03
3	0.38%	75	2.82E-04	11	4.65%	919	3.47E-03	19	5.73%	1132	4.27E-03
4	0.18%	35	1.31E-04	12	5.90%	1164	4.39E-03	20	4.30%	849	3.20E-03
5	0.46%	91	3.44E-04	13	6.17%	1219	4.60E-03	21	3.25%	643	2.42E-03
6	0.85%	168	6.32E-04	14	6.05%	1194	4.50E-03	22	3.31%	654	2.47E-03
7	3.73%	737	2.78E-03	15	7.05%	1392	5.25E-03	23	2.48%	490	1.85E-03
8	7.76%	1533	5.78E-03	16	7.18%	1418	5.35E-03	24	1.88%	371	1.40E-03
								Total		19,748	

2024 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	221	8.31E-04	9	7.12%	1406	5.30E-03	17	7.43%	1467	5.53E-03
2	0.42%	82	3.09E-04	10	4.38%	864	3.26E-03	18	8.23%	1625	6.13E-03
3	0.38%	75	2.81E-04	11	4.65%	919	3.46E-03	19	5.73%	1132	4.27E-03
4	0.18%	35	1.31E-04	12	5.90%	1164	4.39E-03	20	4.30%	849	3.20E-03
5	0.46%	91	3.44E-04	13	6.17%	1219	4.59E-03	21	3.25%	643	2.42E-03
6	0.85%	168	6.31E-04	14	6.05%	1194	4.50E-03	22	3.31%	654	2.47E-03
7	3.73%	737	2.78E-03	15	7.05%	1392	5.25E-03	23	2.48%	490	1.85E-03
8	7.76%	1533	5.78E-03	16	7.18%	1418	5.34E-03	24	1.88%	371	1.40E-03
								Total		19,748	

1 Hayward Ave, San Mateo, CA - On-Site Residential
Cumulative Operation - El Camino Real
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = **2024**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_ECR	El Camino Real Northbound	NB	3	665.9	0.41	17.0	56	1.3	35	19,748
FUG_SB_ECR	El Camino Real Southbound	SB	3	665.3	0.41	17.0	56	1.3	35	19,748
									Total	39,496

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00205			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01681			
Road Dust - Emissions per Vehicle (g/VMT)	0.01492			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03378			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	221	8.56E-04	9	7.12%	1406	5.46E-03	17	7.43%	1467	5.69E-03
2	0.42%	82	3.19E-04	10	4.38%	864	3.35E-03	18	8.23%	1625	6.31E-03
3	0.38%	75	2.90E-04	11	4.65%	919	3.57E-03	19	5.73%	1132	4.39E-03
4	0.18%	35	1.35E-04	12	5.90%	1164	4.52E-03	20	4.30%	849	3.30E-03
5	0.46%	91	3.54E-04	13	6.17%	1219	4.73E-03	21	3.25%	643	2.49E-03
6	0.85%	168	6.50E-04	14	6.05%	1194	4.64E-03	22	3.31%	654	2.54E-03
7	3.73%	737	2.86E-03	15	7.05%	1392	5.40E-03	23	2.48%	490	1.90E-03
8	7.76%	1533	5.95E-03	16	7.18%	1418	5.50E-03	24	1.88%	371	1.44E-03
								Total		19,748	

2024 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	221	8.55E-04	9	7.12%	1406	5.45E-03	17	7.43%	1467	5.69E-03
2	0.42%	82	3.18E-04	10	4.38%	864	3.35E-03	18	8.23%	1625	6.30E-03
3	0.38%	75	2.89E-04	11	4.65%	919	3.56E-03	19	5.73%	1132	4.39E-03
4	0.18%	35	1.35E-04	12	5.90%	1164	4.52E-03	20	4.30%	849	3.29E-03
5	0.46%	91	3.54E-04	13	6.17%	1219	4.73E-03	21	3.25%	643	2.49E-03
6	0.85%	168	6.50E-04	14	6.05%	1194	4.63E-03	22	3.31%	654	2.54E-03
7	3.73%	737	2.86E-03	15	7.05%	1392	5.40E-03	23	2.48%	490	1.90E-03
8	7.76%	1533	5.95E-03	16	7.18%	1418	5.50E-03	24	1.88%	371	1.44E-03
								Total		19,748	

1 Hayward Ave, San Mateo, CA - El Camino Real Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptors (1 Location - 4.5 meter receptor height)

Emission Year	2022
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	4.5 Meters
Receptor Distances	At Construction Residential MEI locations

Meteorological Conditions

BAAQMD San Francisco International Airport M	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0013	0.0471	0.0559

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0455	0.0429	0.0026

1 Hayward Ave, San Mateo, CA - El Camino Real Traffic Cancer Risk
Impacts at Construction Residential MEI - 4.5 meter receptor height
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

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

Values

	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
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

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2022	10	0.0013	0.0471	0.0559	0.018	0.004	0.0003	0.02
1	1	0 - 1	2022	10	0.0013	0.0471	0.0559	0.218	0.044	0.0031	0.27
2	1	1 - 2	2023	10	0.0013	0.0471	0.0559	0.218	0.044	0.0031	0.27
3	1	2 - 3	2024	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
4	1	3 - 4	2025	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
5	1	4 - 5	2026	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
6	1	5 - 6	2027	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
7	1	6 - 7	2028	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
8	1	7 - 8	2029	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
9	1	8 - 9	2030	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
10	1	9 - 10	2031	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
11	1	10 - 11	2032	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
12	1	11 - 12	2033	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
13	1	12 - 13	2034	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
14	1	13 - 14	2035	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
15	1	14 - 15	2036	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
16	1	15 - 16	2037	3	0.0013	0.0471	0.0559	0.034	0.007	0.0005	0.04
17	1	16-17	2038	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
18	1	17-18	2039	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
19	1	18-19	2040	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
20	1	19-20	2041	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
21	1	20-21	2042	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
22	1	21-22	2043	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
23	1	22-23	2044	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
24	1	23-24	2045	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
25	1	24-25	2046	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
26	1	25-26	2047	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
27	1	26-27	2048	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
28	1	27-28	2049	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
29	1	28-29	2050	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
30	1	29-30	2051	1	0.0013	0.0471	0.0559	0.004	0.001	0.0001	0.00
Total Increased Cancer Risk								0.99	0.200	0.014	**1.20**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0003	0.04	0.05

* Third trimester of pregnancy

1 Hayward Ave, San Mateo, CA - El Camino Real Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site Receptors (4.5 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	24
Receptor Height	4.5 meter
Receptor Distances	7 meter spacing

Meteorological Conditions

BAAQMD San Francisco International Airport M	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction On-Site MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0009	0.3859	0.3529

Construction On-Site MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.1133	0.1090	0.0043

1 Hayward Ave, San Mateo, CA - El Camino Real Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site Receptors (7.6 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	24
Receptor Height	7.6 meter
Receptor Distances	7 meter spacing

Meteorological Conditions

BAAQMD San Francisco International Airport M	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction On-Site MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0005	0.1596	0.1459

Construction On-Site MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0423	0.0407	0.0016

1 Hayward Ave, San Mateo, CA - El Camino Real Traffic Cancer Risk
Impacts at On-Site 2nd Floor Receptors - 4.5 meter receptor height
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

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

Values

	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
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

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2024	10	0.0009	0.3859	0.3529	0.012	0.030	0.0016	0.04
1	1	0 - 1	2024	10	0.0009	0.3859	0.3529	0.142	0.362	0.0195	0.52
2	1	1 - 2	2025	10	0.0009	0.3859	0.3529	0.142	0.362	0.0195	0.52
3	1	2 - 3	2026	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
4	1	3 - 4	2027	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
5	1	4 - 5	2028	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
6	1	5 - 6	2029	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
7	1	6 - 7	2030	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
8	1	7 - 8	2031	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
9	1	8 - 9	2032	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
10	1	9 - 10	2033	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
11	1	10 - 11	2034	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
12	1	11 - 12	2035	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
13	1	12 - 13	2036	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
14	1	13 - 14	2037	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
15	1	14 - 15	2038	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
16	1	15 - 16	2039	3	0.0009	0.3859	0.3529	0.022	0.057	0.0031	0.08
17	1	16-17	2040	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
18	1	17-18	2041	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
19	1	18-19	2042	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
20	1	19-20	2043	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
21	1	20-21	2044	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
22	1	21-22	2045	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
23	1	22-23	2046	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
24	1	23-24	2047	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
25	1	24-25	2048	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
26	1	25-26	2049	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
27	1	26-27	2050	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
28	1	27-28	2051	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
29	1	28-29	2052	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
30	1	29-30	2053	1	0.0009	0.3859	0.3529	0.002	0.006	0.0003	0.01
Total Increased Cancer Risk								0.65	1.640	0.088	**2.37**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0002	0.11	0.11

* Third trimester of pregnancy

1 Hayward Ave, San Mateo, CA - El Camino Real Traffic Cancer Risk
Impacts at On-Site 3rd Floor Receptors - 7.6 meter receptor height
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

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

Values

	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
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

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2024	10	0.0005	0.1596	0.1459	0.007	0.012	0.0007	0.02
1	1	0 - 1	2024	10	0.0005	0.1596	0.1459	0.079	0.150	0.0081	0.24
2	1	1 - 2	2025	10	0.0005	0.1596	0.1459	0.079	0.150	0.0081	0.24
3	1	2 - 3	2026	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
4	1	3 - 4	2027	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
5	1	4 - 5	2028	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
6	1	5 - 6	2029	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
7	1	6 - 7	2030	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
8	1	7 - 8	2031	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
9	1	8 - 9	2032	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
10	1	9 - 10	2033	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
11	1	10 - 11	2034	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
12	1	11 - 12	2035	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
13	1	12 - 13	2036	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
14	1	13 - 14	2037	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
15	1	14 - 15	2038	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
16	1	15 - 16	2039	3	0.0005	0.1596	0.1459	0.012	0.024	0.0013	0.04
17	1	16-17	2040	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
18	1	17-18	2041	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
19	1	18-19	2042	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
20	1	19-20	2043	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
21	1	20-21	2044	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
22	1	21-22	2045	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
23	1	22-23	2046	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
24	1	23-24	2047	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
25	1	24-25	2048	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
26	1	25-26	2049	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
27	1	26-27	2050	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
28	1	27-28	2051	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
29	1	28-29	2052	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
30	1	29-30	2053	1	0.0005	0.1596	0.1459	0.001	0.003	0.0001	0.00
Total Increased Cancer Risk								0.36	0.678	0.037	**1.07**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0001	0.04	0.04

* Third trimester of pregnancy

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	**10/4/2021**
Contact Name	Zachary Palm
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x117
Email	zpalm@illingworthrodkin.com
Project Name	1 Hayward Ave
Address	1 Hayward Ave
City	San Mateo
County	San Mateo
Type (residential, commercial, mixed use, industrial, etc.)	Mixed Use
Project Size (# of units or building square feet)	18 Dwelling Units, 4,650 sf office
Comments:	

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

1. Complete all the contact and project information requested in Table A. Incomplete forms will not be processed. Please include a project site map.

2. Download and install the free program Google Earth, **http://www.google.com/earth/download/ge/,** and then download the county specific Google Earth stationary source application files from the District's website, **http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.** The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.

3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.

5. List the stationary source information in Table B. Incomplete forms will not be processed. Please include a project site map.

6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.

7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

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

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

Table B: Google Earth data

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
1000+	22188	Lesley Foundation dba Lesley Senior Co	700 Laurel Avenue	2.42	0	0		Generators		2018 Dataset

Construction MEI

Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
0.04	0.10	0.00	0.00

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
900	22188	0.05	0.12	0.00	0.00

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 0.003 or less.
    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 should reflect
    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.

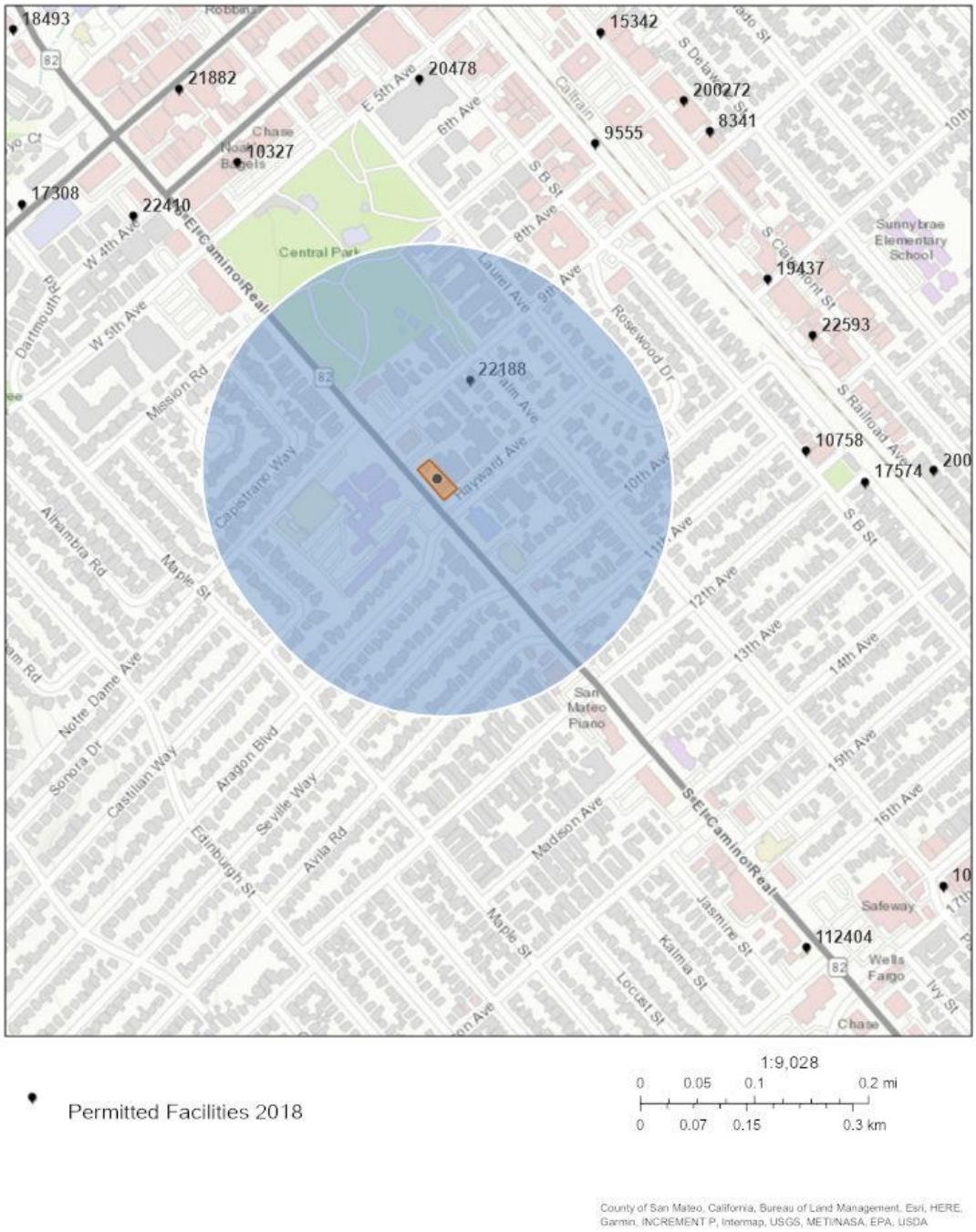
Date last updated:
03/13/2018

Stationary Source Risk & Hazards Screening Report

Area of Interest (AOI) Information

Area : 3,677,528.8 ft²

Oct 4 2021 10:55:43 Pacific Daylight Time



Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Facilities 2018	1	N/A	N/A

Permitted Facilities 2018

#	FACID	Name	Address	City	St
1	22188	Lesley Foundation dba Lesley Senior Communities	700 Laurel Avenue	San Mateo	CA

#	Zip	County	Cancer	Hazard	PM_25	Type	Count
1	94401	San Mateo	2.420	0.000	0.000	Generators	1

Note: The estimated risk and hazard impacts from these sources would be expected to be substantially lower when site specific Health Risk Screening Assessments are conducted.

The screening level map is not recommended for evaluating sensitive land uses such as schools, senior centers, day cares, and health facilities.

Attachment 6: San Mateo Climate Action Plan Compliance Checklist

Appendix 3:

CAP Consistency Checklist

The following checklist assists project applicants and City staff to determine whether a proposed project complies with the City of San Mateo CAP. The CAP is an implementation tool of the General Plan, demonstrating the City's strategy to reduce greenhouse gas (GHG) emissions consistent with Section 15183.5 of the California Environmental Quality Act (CEQA) Guidelines. New projects deemed consistent with the CAP are eligible for streamlining the analysis of GHG emissions. Projects inconsistent with the CAP may refer to this checklist for informational purposes but may have to submit a separate GHG analysis for the project. Examples of projects inconsistent with the City's forecast include:

- Stationary source emissions regulated by the Bay Area Air Quality Management District.
- General Plan amendments.
- New specific plans, amendments to specific plans, or new development agreements that would increase the population and nonresidential land use expectations beyond those anticipated in the General Plan buildout scenario.

APPENDIX 3

Development Checklist

Project Description Characteristics

Please identify the applicable land uses included in the proposed project and provide a brief description of the proposed project (or the project description to be used for the associated environmental document).

1) What is the size of the project (in acres)?

2) Identify the applicable land uses:

Residential
Commercial
Industrial
Manufacturing
Other

3) If there is a residential component to the project, how many units are being proposed?

Single-family residences:	:
Multi-family residences:	:

4) Please provide a brief project description, including the square footage of conditioned space by land use:

5) Does the project require any amendments to the General Plan or specific plans?

Yes No

If yes, please explain:

6) Is the project located in a specific plan area?

   Yes No

   If so, which one? _____

7) Please complete the following table to identify project compliance with any applicable CAP measures.

Standards for CAP Consistency – New Development

Reduction Measure and Applicable Standard	Does the Project Comply?	Notes & Comments
BE 1: All new development: The project does not have natural gas connections, and does not have any natural gas appliances or other equipment installed	Yes No N/A	Additional notes:
RE 2. All new developments with residential units: The project includes an on-site renewable energy system that meets or exceeds the minimum requirements of the California State Building Code	Yes No N/A	If yes, what is the kW potential of the renewable energy system? Additional notes:
RE 2. All new developments with residential units: The project includes an on-site energy storage system, such as a battery.	Yes No N/A	If yes, how much electricity does the system store? Additional notes:
RE 3. All new developments with nonresidential space: The project includes an on-site renewable energy system that meets or exceeds the minimum requirements of the California State Building Code	Yes No N/A	If yes, what is the kW potential of the renewable energy system? Additional notes:

APPENDIX 3

Reduction Measure and Applicable Standard	Does the Project Comply?	Notes & Comments
RE 3. All new developments with nonresidential space: The project includes an on-site energy storage system, such as a battery.	Yes No N/A	If yes, how much electricity does the system store? Additional notes:
EE 3. All new developments with residential units: The project includes trees that provide shade to residences.	Yes No N/A	If yes, how many residences are shaded by newly planted trees? Additional notes:
CF 1. All new development with dedicated off-street parking: The project includes parking spaces with installed EV chargers or are pre-wired for EV chargers, consistent with state and any local regulations.	Yes No N/A	If yes, how many spaces include installed EV chargers? If yes, how many spaces are pre-wired for EV chargers? Additional notes:
CF 1. All new development with dedicated off-street parking: The project includes parking spaces with installed EV chargers that are accessible by members of the public beyond those who live and/or work at the project.	Yes No N/A	If yes, how many spaces with installed EV chargers are accessible by members of the public? If yes, how many Level 3 chargers installed as part of this project are publicly accessible? Additional notes:

Reduction Measure and Applicable Standard	Does the Project Comply?	Notes & Comments
ST 6. New developments of at least six multi-family units and/or 10,000 square feet of nonresidential space: Implement TDM strategies to comply with the appropriate trip reduction target identified in applicable area plans and San Mateo Citywide TDM Plan.	Yes No N/A	If yes, what is the trip reduction target for the project? % short-term commute trip reduction % long-term commute trip reduction What strategies will the project use to achieve these trip reduction targets? Additional notes:
ST 6. Projects of at least 20 multi-family units and/or 50,000 square feet of nonresidential space undergoing additions or alterations (as defined in San Mateo Municipal Code Section 23.06.012): Implement TDM strategies consistent with the targets in relevant area plans and the San Mateo Citywide TDM Plan.	Yes No N/A	If yes, what is the trip reduction target for the project? % short-term commute trip reduction % long-term commute trip reduction What strategies will the project use to achieve these trip reduction targets? Additional notes:
ST 7. All new development: Be located along El Camino Real, within one-half mile of any Caltrain station, or in the Rail Corridor Transit Oriented Development or Hillsdale Station Area Plan areas.	Yes No N/A	Additional notes:

APPENDIX 3

Reduction Measure and Applicable Standard	Does the Project Comply?	Notes & Comments
SW 1. All developments with multifamily units or nonresidential space: Provide an area of sufficient space to store and allow access to a compost bin.	Yes No N/A	Does the project participate in any composting programs? Does the project compost on-site? Additional notes:
WW 3. All new development: Include a greywater system.	Yes No N/A	If yes, is the greywater system "laundry-to-landscape" or another type of system? Additional notes: