3111 SANTA ROSA AVENUE APARTMENTS AND STORAGE PROJECT AIR QUALITY & GREENHOUSE GAS ASSESSMENT

Santa Rosa, California

August 11, 2021

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Introduction

The purpose of this report is to address air quality, community health risk, and greenhouse gas (GHG) impacts associated with the proposed residential and storage project located at 3111 Santa Rosa Avenue in Santa Rosa, California. The air quality impacts and GHG emissions would be associated with construction of the new buildings and infrastructure and trips generated by the operation of the project. Air pollutant and GHG emissions associated with the construction and operation of the project were predicted using appropriate computer models. In addition, the potential 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 4.51-acre site is located between Highway 101 and Santa Rosa Avenue in Santa Rosa. The site is currently being used as a storage lot, storing various motor vehicles on a flat asphalt parking lot. The proposed project would demolish the current site to construct a three-story, approximately 33,000 square-foot (sf) building containing 48 residential apartment units, an approximately 39,000-sf of self-storage building, a 901-sf leasing office, and a 91,000-sf parking lot. The parking lot will be split into parking spaces for 92 cars around the apartment building and 44 parking spaces around the self-storage building.

Setting

The project is located in the southern portion of Sonoma 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

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

region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

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

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. The most recent Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines were published in February of 2015.[2] See *Attachment 1* for a detailed description of the community risk modeling methodology used in this assessment.

Sensitive Receptors

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

[2] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.* Office of Environmental Health Hazard Assessment. February.

Regulatory Setting

Federal Regulations

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

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of nitrogen oxides, or NO_X, and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified diesel particulate matter as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce PM and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[3]

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

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

State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles[4]. In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a

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

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

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

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

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

Bay Area Air Quality Management District (BAAQMD)

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

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

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.[5] The

[5] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program , accessed 2/18/2021.

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. 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 an at-risk community area.

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

City of Santa Rosa 2035 General Plan

The Santa Rosa 2035 General Plan includes goals, policies, and actions to reduce exposure of the City's sensitive population to exposure of air pollution, toxic air contaminants, and GHG emissions. The following goals, policies, and actions are applicable to the proposed project:

Climate Change

LUL-A: Foster a compact rather than a scattered development pattern in order to reduce travel, energy, land, and materials consumption while promoting greenhouse gas emission reductions citywide.

UD-A-12: Promote green building design and low impact development projects.

H-G-2: Require, as allowed by CALGreen Tier 1 standards, energy efficiency through site planning and building design by assisting residential developers in identifying energy conservation and efficiency measures appropriate to the Santa Rosa area.

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

H-G-5: Continue to require the use of fuel-efficient heating and cooling equipment and other appliances, in accordance with CALGreen Tier 1 standards.

NS-H-1: Participate in regional efforts to prepare for the impacts of climate change.

OSC-M-1: Meet local, regional, and state targets for reduction of greenhouse gas emissions through implementation of the Climate Action Plan.

Air Quality

OSC-J-1: Review all new construction projects and require dust abatement actions as contained in the CEQA Handbook of the Bay Area Air Quality Management District.

OSC-J-3: Reduce particulate matter emissions from wood burning appliances through implementation of the city's Wood Burning Appliance code.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 *CEQA Air Quality Guidelines*. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the *CEQA Air Quality Guidelines* in 2017 to include the latest significance thresholds that were used in this analysis are summarized in Table 1. Community risks are considered significant if they exceed these levels.

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 $\mu g/m^3$	0.8 $\mu g/m^3$	
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: Conflict with or obstruct implementation of the applicable air quality plan?

BAAQMD is the regional agency responsible for overseeing compliance with State and Federal laws, regulations, and programs within the San Francisco Bay Area Air Basin (SFBAAB). BAAQMD, with assistance from the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), prepares and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2017 Clean Air Plan*.[7] The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality and GHG impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which, in turn, affects region-wide emissions of air pollutants and GHGs.

The 2017 Clean Air Plan, adopted by BAAQMD in April 2017, includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. Plans must show consistency with the control measures listed within the Clean Air Plan. At the project-level, there are no consistency measures or thresholds. The proposed project would not conflict with the latest Clean Air planning efforts since 1) project would have construction and operational emissions below the BAAQMD thresholds (see Impact 2 below), 2) the project would be considered urban infill, 3) the project would be located near employment centers, 4) the project would be located near transit with regional connections.

Impact AIR-2: 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

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

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.[8] The CalEEMod model output along with construction inputs are included in *Attachment 2* and EMFAC2021 vehicle emissions modeling outputs are included in *Attachment 3*.

CalEEMod Inputs

Land Use Inputs

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

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Apartments Mid RIse	48	Dwelling Unit	33,000	4.51
Unrefrigerated Warehouse-No Rail	39	1,000-sf	39,000	
General Office Building	0.9	1,000-sf	901	
Parking Lot	136	Parking Spaces	91,000	

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 CalEEMod defaults. The construction acreage and land use inputs were based on information provided by the applicant.

The construction phase lengths and dates were assumed to be CalEEMod defaults. Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays was set to the default CalEEMod inputs. Since different equipment would have different estimates of the working days per phase, the hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the total number of days in that phase. The construction schedule assumed that the earliest possible start date would be January 2022, project construction would be five-days a week, and the project would be built out over a period of approximately 15 months, or 309 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

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

haul trips that were computed based on the estimate of demolition material to be exported, soil material imported and/or exported to the site, and the estimate of cement and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition 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. 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 defaults, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1 and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including cement trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for hauling (demolition material export and soil import/export). Since CalEEMod does not address cement 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 Sonoma County for the year 2022 weas 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]	50% LDA 25% LDT1 25% LDT2	50% MHDT 50% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	20.0	CalEEMod default distance with 5-min truck idle time.
Demolition	300	-	-	CalEEMod default worker trips.
Site Preparation	90	-	-	CalEEMod default worker trips.
Grading	120	-	-	CalEEMod default worker trips.
Trenching	50	-	-	CalEEMod default worker trips.
Building Construction	20,470	6,210	648	Estimated.33,000-sf cement. CalEEMod default worker and vendor trips.
Architectural Coating	324	-	-	CalEEMod default worker trips.
Paving	360	-	202	Estimated.91,000-sf asphalt CalEEMod default worker trips.

Notes: [1] Based on 2022 EMFAC2021 light-duty vehicle fleet mix for Sonoma County.
[2] Includes demolition and grading trips estimated by CalEEMod based on amount of material to be removed. Cement and asphalt trips estimated based on estimated building and pavement areas.

Summary of Computed Construction Period Emissions

Average daily emissions were computed by dividing the total construction emissions by the number of active construction workdays (309 days). Table 4 shows average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 4, predicted construction period 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)	0.73	2.13	0.11	0.10
Average daily emissions (pounds)[1]	4.74	13.78	0.74	0.65
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 309 workdays.

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

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

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

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

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

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

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Effectiveness of Mitigation Measure AQ-1

The measures above are consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

Operational Period Emissions

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

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.[9] The project would produce 321 net daily trips. The Saturday and Sunday trip rates were adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips to the default weekday rate with the project-specific daily weekday trip rate. 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. Additionally, CARB has recently released EMFAC off-model adjustment factors to account for the Safer Affordable Efficient (SAFE) Vehicle Rule Part one.[10,11] 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 2022 Sonoma 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.[12]

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. The model has a default rate of 119.98 pounds of CO_2 per megawatt of electricity produced, which is based on Sonoma Clean Power's (SCP) 2019 emissions rate. Sonoma Clean Power is the main energy provider within the Sonoma County area. Depending on the program a customer or business is enrolled in with SCP, the electricity provided by SCP can be 91 percent carbon-free (i.e. CleanStart program) or 100 percent carbon-free (i.e. EverGreen program).

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[9] W-Trans, *Focused Traffic Analysis for the 3111 Santa Rosa Avenue Project*, June 10, 2021.
[10] California Air Resource Board, 2019. *EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One*. November. Web: https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf
[11] California Air Resource Board, 2020. *EMFAC Off-Model Adjustment Factors for Carbon Dioxide (CO_20 Emissions to Accounts for the SAFE Vehicles Rule Part One and the Final SAFE Rule*. June. Web: https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf?utm_medium=email&utm_source=govdelivery
[12] See CARB 2021: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac

Other Inputs

Default model assumptions for emissions associated with solid waste generation use were applied to the project. Water/wastewater use were changed to 100% aerobic conditions to represent wastewater treatment plant conditions. All hearths were assumed to be fueled by natural gas per BAAQMD Regulation 6, Rule 3, which requires that new building construction not install a wood-burning device (effective as of November 1, 2016).[13]

Existing Uses

A CalEEMod model run was not developed to compute emissions from the existing land uses since the existing use of the site is a lot to store various motor vehicles. These uses produce low operational and traffic emissions which would not considerably offset emissions from the proposed project. In addition, traffic consultants did not provide project-specific trip generation rates for the existing land uses. 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*)	0.58 tons	0.28 tons	0.26 tons	0.07 tons
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]	3.18 lbs.	1.53 lbs.	1.42 lbs.	0.38 lbs.
BAAQMD Thresholds (lbs./day)	*54 lbs.*	*54 lbs.*	*82 lbs.*	*54 lbs.*
Exceed Threshold?	No	No	No	No

Notes: [1] Assumes 365-day operation.

Impact AIR-3: 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 and stationary sources).

[13] 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

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,[14] 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 northeast and east of the site and other existing residences to the south and west of the site, 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

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

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 $PM_{2.5}$.[15] This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Construction Emissions

The CalEEMod and EMFAC2021 models 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 0.10 tons (204 pounds). The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod and EMFAC2021 as 0.04 tons (81 pounds) for the overall construction period. The breakdown of yearly emissions is included in *Attachment 4*.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[16] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

To represent the construction equipment exhaust emissions, an area source emission release height of 20 feet (6 meters) was used for the area sources.[17] The release height incorporates both the physical release height from the construction equipment (i.e., the height of the exhaust pipe) and plume rise after it leaves the exhaust pipe. Plume rise is due to both the high temperature of the exhaust and the high velocity of the exhaust gas. It should be noted that when modeling an area source, plume rise is not calculated by the AERMOD dispersion model as it would do for a point source (exhaust stack). Therefore, the release height from an area source is used to

[15] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.
[16] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.
[17] California Air Resource Board, 2007. *Proposed Regulation for In-Use Off-Road Diesel Vehicles, Appendix D: Health Risk Methodology*. April. Web: https://ww3.arb.ca.gov/regact/2007/ordiesl07/ordiesl07.htm

represent emissions from sources with plume rise, such as construction equipment, and should be based on the height the exhaust plume is expected to achieve, not just the height of the top of the exhaust pipe.

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 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 (2 meter) 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 Sonoma County Airport prepared for use with the AERMOD model by BAAQMD. Construction emissions were modeled as occurring daily between 8:00 a.m. to 5:00 p.m., when the majority of construction activity would 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 floors of nearby single- and multi-family residences.[18]

Summary of Construction Community Risk Impacts

The increased cancer risk calculations were based on applying the BAAQMD recommended age sensitivity factors to the TAC concentrations, as described in *Attachment 1*. Age-sensitivity factors reflect the greater sensitivity of infants and 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 values was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation reference exposure level of 5 $\mu g/m^3$.

The maximum modeled annual DPM and $PM_{2.5}$ concentrations, which include both the DPM and fugitive $PM_{2.5}$ concentrations, were identified at nearby sensitive receptors to find the MEI. Results of this assessment indicated that the construction MEI was located at a residence on the

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

first floor (5 feet above ground) to the northeast of the project site. The location of the MEI and nearby sensitive receptors are shown in Figure 1. Table 6 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities. *Attachment 4* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

Community Risks from Project Operation – Generator and Traffic

Stationary equipment that could emit substantial TACs (e.g., emergency generators) are not planned. 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.[19] This project would generate 321 net daily trips[20] 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 not included within this analysis.

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

For this project, the sensitive receptor identified in Figure 1 as the construction MEI is also the project MEI. At this location, the MEI would be exposed to 1.25 years of construction cancer risks. The annual $PM_{2.5}$ concentration and HI values are based on an annual maximum risk for the entirety of the project. As shown in Table 6, the unmitigated maximum cancer risks, $PM_{2.5}$ concentration, and HI from construction activities at the MEI location would not exceed their respective BAAQMD single-source significance thresholds.

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

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Construction	Unmitigated	7.36 (infant)	0.06	0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

[19] 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

[20] W-Trans, *Focused Traffic Analysis for the 3111 Santa Rosa Avenue Project*, June 10, 2021.

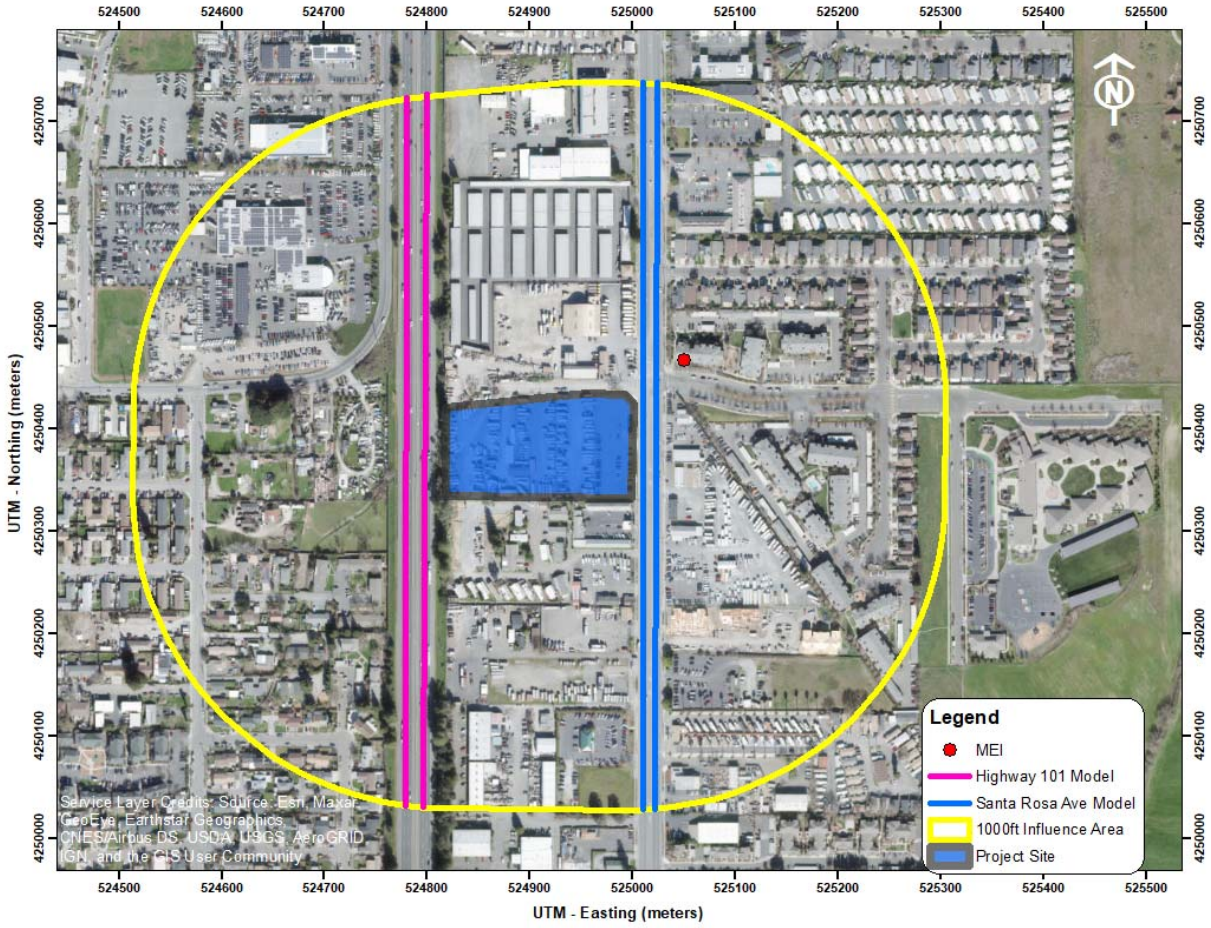
Figure 1. Locations of Project Construction Site, Off-Site Sensitive Receptors, and TAC Impacts (MEI)

Cumulative Community Risks of all TAC Sources at the Off-site 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 railroads, freeways or highways, busy surface streets, and stationary sources identified by BAAQMD.

A review of the project area indicated that traffic on U.S. Highway 101 and Santa Rosa Avenue would exceed 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 map website identified no stationary sources with the potential to affect the project MEI. Figure 2 shows the location of the sources affecting the MEI. Community risk impacts from these sources upon the MEI are reported in Tables 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



Highways – Highway 101

The project MEI is located near Highway 101. A refined analysis of the impacts of TACs and $PM_{2.5}$ to the MEI receptor is necessary to evaluate potential cancer risks and $PM_{2.5}$ concentrations from Highway 101. A review of the traffic information reported by Caltrans indicates that Highway 101 traffic includes 153,000 vehicles per day (based on an annual average)[21] that are about 5.1 percent trucks, of which 3.1 percent are considered diesel heavy duty trucks and 2.0 percent are medium duty trucks.[22]

Local Roadways – Santa Rosa Avenue

A refined analysis of potential health impacts from vehicle traffic on Santa Rosa Avenue 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

[21] Caltrans. 2021. *2019 Traffic Volumes California State Highways.*
[22] Caltrans. 2021. *2019 Annual Average Daily Truck Traffic on the California State Highway System.*

exposures. *Attachment 1* includes a description of how community risk impacts, including cancer risk are computed.

Traffic Emissions Modeling

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on Highway 101 and Santa Rosa Avenue using the Caltrans version of the CARB EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (TOG), running evaporative losses for TOG, and tire and brake wear 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 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 (Sonoma County), type of road (freeway and major/collector), traffic mix assigned by CT-EMFAC2017 for the county, adjusted for the local truck mix on Highway 101 and truck percentage for non-state highways in Santa Clara County (4.32 percent)[23] for Santa Rosa Avenue, year of analysis (2024 – operational year), and season (annual).

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 2024 (operational 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 2024 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.

Average daily traffic (ADT) volumes and truck percentages were based on Caltrans data for Highway 101. Traffic volumes were assumed to increase 1 percent per year for a total of 160,650 vehicles. Hourly traffic distributions specific to these segments of Highway 101 were obtained from Caltrans Performance Measurement System (PeMS). PeMS data is collected in real-time from nearly 40,000 individual detectors spanning the freeway system across all major metropolitan areas of California.[24] The fraction of traffic volume each hour was calculated and applied to the 2024 average daily traffic volumes estimate to estimate hourly traffic emission rates for Highway 101.

[23] 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

[24] https://dot.ca.gov/programs/traffic-operations/mpr/pems-source

Based on traffic data from the Caltrans PeMS, traffic speeds during the daytime and nighttime periods were identified. From 7:00 p.m until 6:00 a.m., an average speed of 65 miles per hour (mph) was assumed for all vehicles. From 6:00 a.m. until 7:00 p.m., an average speed of 55 mph was assumed for all vehicles.

The ADT for Santa Rosa Avenue was calculated based on traffic data provided by the City of Santa Rosa's website.[25] The estimated ADT on Santa Rosa Avenue was 23,830 vehicles. Average hourly traffic distributions for Sonoma County roadways were developed using the EMFAC model,[26] which were then applied to the ADT volumes to obtain estimated hourly traffic volumes and emissions for the roadway. An average travel speed of 40 mph on Santa Rosa Avenue was used for all hours of the day based on posted speed limit signs on the roadway.

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for future traffic on Highway 101 and Santa Rosa Avenue, and using these emissions with an air quality dispersion model to calculate TAC and $PM_{2.5}$ concentrations at the project MEI receptor locations. Maximum increased lifetime cancer risks and annual $PM_{2.5}$ concentrations for the receptors were then computed using modeled TAC and $PM_{2.5}$ concentrations and BAAQMD methods and exposure parameters described in *Attachment 1*.

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the U.S. EPA AERMOD dispersion model, which is recommended by the BAAQMD for this type of analysis.[27] TAC and $PM_{2.5}$ emissions from traffic on Highway 101 and Santa Rosa Avenue within about 1,000 feet of the project site were evaluated with the model. Emissions from vehicle traffic were modeled in AERMOD using a series of volume sources along a line (line volume sources), with line segments used to represent northbound and southbound travel lanes on Highway 101 and Santa Rosa Avenue. The same meteorological data and off-site sensitive receptors used in the previous construction dispersion modeling were used in the highway and roadway modeling. Other inputs to the model included road geometry, hourly traffic emissions, and receptor locations and heights. Annual TAC and $PM_{2.5}$ concentrations for 2024 from traffic on Highway 101 and Santa Rosa Avenue were calculated using the model. Concentrations were calculated at the project MEI with receptor heights of 5 feet (1.5 meters) to represent the breathing heights on the first floor of the nearby residence.

Computed Cancer and Non-Cancer Health Impacts

The cancer risk, $PM_{2.5}$ concentration, and HI impacts from Highway 101 and Santa Rosa Avenue on the project MEI are shown in Table 7. Figure 2 shows the roadway links used for the

[25] City of Santa Rosa, Prepared by AimTD LLC, *Santa Rosa Avenue – Southside to Yolanda 02-2019*, February 19, 2019. Web: https://www.srcity.org/DocumentCenter/Index/914

[26] The Burden output from EMFAC2007, a previous version of CARB's EMFAC model, was used for this since the current web-based version of EMFAC2021 does not include Burden type output with hour by hour traffic volume information.

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

modeling and receptor locations where concentrations were calculated. Details of the emission calculations, dispersion modeling and cancer risk calculations for the receptors with the maximum cancer risk from Highway 101 and Santa Rosa Avenue traffic are provided 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* geographic information system (GIS) map website.[28] This mapping tool identifies the location of nearby stationary sources and their estimated risk and hazard impacts. No nearby sources were identified using this tool.

Summary of Cumulative Risks at Off-Site Project MEIs

Both the project and cumulative community risk impacts at the sensitive receptors most affected by construction (i.e., the MEI) are reported in Table 7. Without mitigation, the project's community risk from project construction activities would not exceed the maximum increased cancer risk, annual $PM_{2.5}$ concentration, and hazard risk value single-source thresholds. In addition, the combined unmitigated cancer risk, $PM_{2.5}$ concentration, and HI values would not exceed their respective cumulative thresholds.

Table 7. Impacts from Combined Sources at Off-Site MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	Unmitigated	7.36 (infant)	0.06	0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
Cumulative Impacts				
Highway 101, ADT 160,650		8.72	0.21	<0.01
Santa Rosa Avenue, ADT 23,830		10.80	0.37	<0.01
Cumulative Total	Unmitigated	26.88	0.64	<0.03
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

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

Non-CEQA: On-Site Community Risk Assessment for TAC Sources - New Project Residences

In addition to evaluating health impact from project construction, a 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.[29]

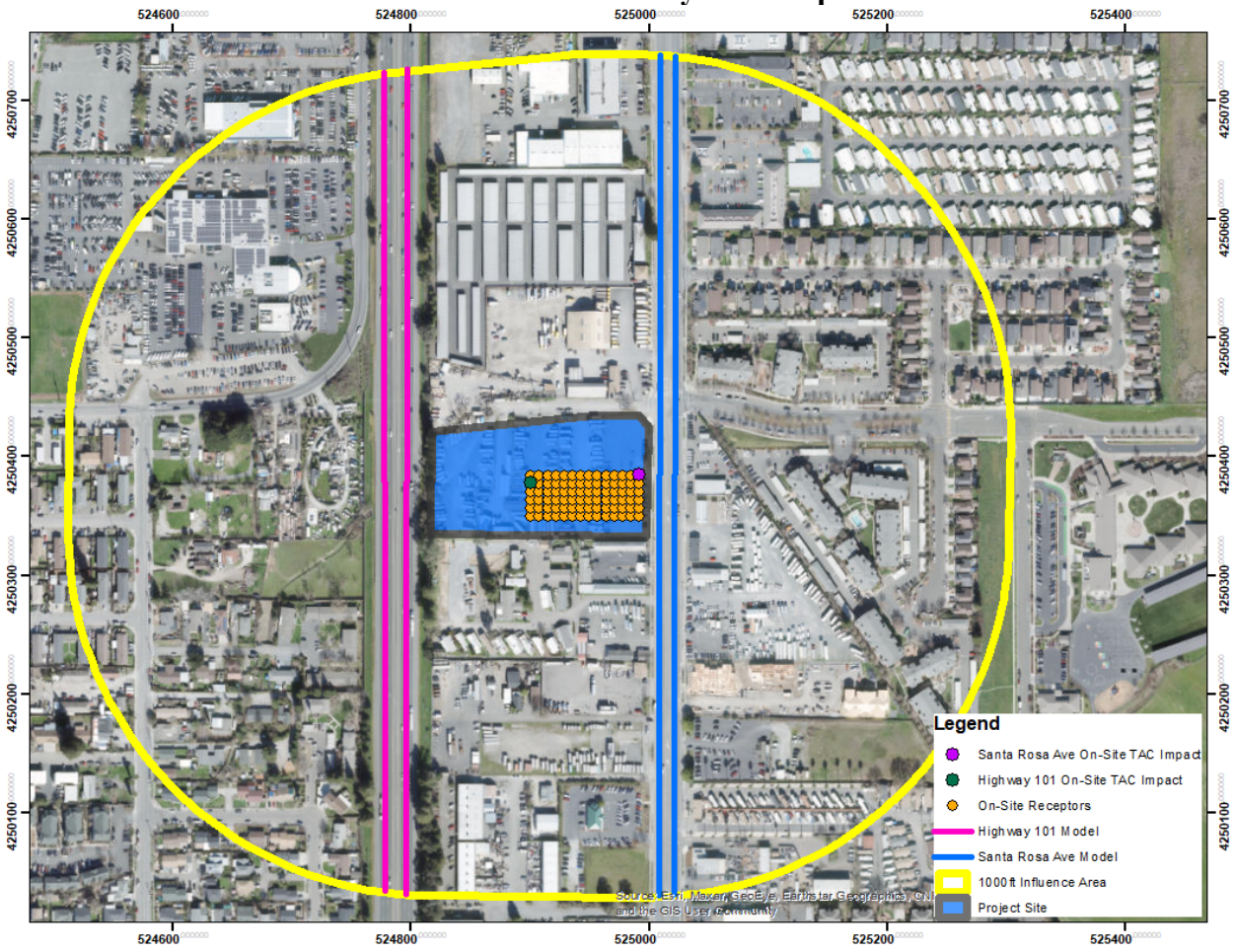
Nearby Highways and Roadways – Highway 101 and Santa Rosa Avenue

The highway and roadway analysis for the new project residents was conducted in the same manner as described above for the off-site MEI. The project set of receptors were placed throughout the project area and were spaced every 23 feet (7 meters). Highway and roadway impacts were modeled at receptor heights of 5 feet (1.5 meters), 15 feet (4.5 meters), and 25 feet (7.6 meters) representing sensitive receptors on the first, second, and third floors of the residential portion of the project site. The portions of Highway 101 and Santa Rosa Avenue 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 housing area for 24 hours per day for 350 days per year. The maximum impacts from Highway 101 occurred at a first-floor receptor along the western boundary of the proposed building closest to the highway. The maximum impacts from Santa Rosa Avenue occurred at a first-floor receptor at the northeast corner of the proposed building closest to the roadway. Cancer risks associated with Highway 101 and Santa Rosa Avenue are greatest closest to each respective roadway. The highway and roadway community risk impacts at the project site are shown in Table 8. Risk values were computed using modeled DPM and $PM_{2.5}$ concentrations and BAAQMD recommended methods and exposure parameters described in *Attachment 1*. Details of the emission calculations, dispersion modeling, and cancer risk calculations are contained in *Attachment 5.*

[29] 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



Cumulative Community Health Risk at Project Site

Community risk impacts from the combined sources upon the project site are reported in Table 8. The TAC sources are compared against the BAAQMD single-source threshold and then combined and compared against the BAAQMD cumulative-source threshold. As shown, the maximum cancer risk, and annual $PM_{2.5}$ concentrations exceed the BAAQMD single-source threshold. The annual $PM_{2.5}$ concentrations also exceed the BAAQMD cumulative-source threshold. The HI from the nearby sources do not exceed their single-source or cumulative-source thresholds.

Table 8. Impacts from Combined Sources to Project Site Receptors

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Highway 101, ADT 160,650	Unmitigated	**17.31**	**0.65**	<0.01
	Mitigated	7.40	0.19	<0.01
Santa Rosa Avenue, ADT 23,830	Unmitigated	5.82	**0.43**	<0.01
	Mitigated	2.92	0.13	<0.01
BAAQMD Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	*Unmitigated*	***Yes***	***Yes***	*No*
	Mitigated	*No*	*No*	*No*
Cumulative Total	Unmitigated	23.13	**1.08**	<0.02
	Mitigated	10.32	0.32	<0.02
BAAQMD Cumulative Source Threshold		***>100***	***>0.8***	***>10.0***
Exceed Threshold?	*Unmitigated*	*No*	***Yes***	*No*
	Mitigated	*No*	*No*	*No*

Recommended Design Features to Reduce Project Receptor Exposure

Filtration in ventilation systems at the project site would be recommended to reduce the level of harmful pollutants to below the significant thresholds. The significant exposure for new project receptors is judged by two effects: (1) increased cancer risk, and (2) annual $PM_{2.5}$ concentration. Exposure to maximum cancer risk and annual $PM_{2.5}$ concentrations from Highway 101 and Santa Rosa Avenue are above the BAAQMD single source thresholds, with annual $PM_{2.5}$ concentrations also exceeding the BAAQMD cumulative source threshold. Cancer risk is mostly the result of exposure to diesel particulate matter, although, gasoline vehicle exhaust contributes to this effect. Annual $PM_{2.5}$ concentrations are based on the exposure to $PM_{2.5}$ resulting from emissions attributable to truck and auto exhaust, the wearing of brakes and tires and re-entrainment of roadway dust from vehicles traveling over pavement. The modeled $PM_{2.5}$ exposure to future residents drives the mitigation. 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 for the entire residential building. Air filtration devices shall be rated MERV13 or higher. To ensure adequate health protection to sensitive receptors (i.e., residents), this ventilation system, whether mechanical or passive, shall filter all fresh air that would be circulated into the dwelling units.

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

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

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

Effectiveness of Recommended Design Features

A properly installed and operated ventilation system with MERV13 would achieve an 80-percent reduction for small particulates.[30] The overall effectiveness calculations take into account the amount of time spent outdoors and away from home. Assuming that the filtration system is 80-percent effective and the individual is being exposed to 21 hours of indoor filtered air and three hours of outdoor unfiltered air, then the overall effectiveness of a MERV13 filtration system would be about 70-percent for $PM_{2.5}$ exposure. For Highway 101, this would reduce the maximum annual $PM_{2.5}$ concentration to 0.19 $\mu g/m^3$ and the cancer risk to 7.4 per million. For Santa Rosa Avenue, this would reduce the maximum annual $PM_{2.5}$ concentration to 0.13 $\mu g/m^3$ and the cancer risk to 2.92 per million. The combined maximum annual $PM_{2.5}$ concentration would be reduced to 0.32 $\mu g/m^3$. With this recommended design feature, impacts from Highway 101 and Santa Rosa Avenue would be below their respective single- and cumulative-source thresholds.

Impact AIR-4: Create objectionable odors affecting a substantial number of people?

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

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

GREENHOUSE GAS EMISSIONS

Setting

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

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

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

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

Recent Regulatory Actions for 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*. [31] 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.

[31] 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

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

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

- Cap and Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings;
- Develop fuels with an 18-percent reduction in carbon intensity;
- Develop more high-density, transit-oriented housing;
- Develop walkable and bikeable communities;
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce "super pollutants" by reducing methane and hydrofluorocarbons or HFCs by 40 percent.

In the updated Scoping Plan, CARB recommends statewide targets of no more than 6 metric tons (MT) 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.[32] 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

[32] 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.

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.[33]

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).[34] 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.[35] 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.[36] The Bay Area GHG emission were 87 MMT. As a point of comparison, statewide emissions were about 444 MMT in 2011

Regulatory Agency

Santa Rosa 2035 General Plan: Greenhouse Gas Appendix

The following greenhouse gas emission reduction goals and policies from the Santa Rosa General Plan 2035 are applicable to the proposed project.

[33] See: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf
[34] 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
[35] 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
[36] 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.

Land Use and Livability

LUL-G-1 Develop the following areas as mixed-use centers (see General Plan Land Use diagram): South of Hearn Avenue, at Dutton Meadow Avenue, West of Corporate Center Parkway, at Northpoint Parkway, Piner Road at Marlow Road, and Petaluma Hill Road, at Yolanda Avenue.

Open Space and Conservation

OSC-J Take appropriate actions to help Santa Rosa and the larger Bay Area region achieve and maintain all ambient air quality standards.

OSC-J-1 Review all new construction projects and require dust abatement actions as contained in the CEQA Handbook of the Bay Area Air Quality Management District.

OSC-J-3 Reduce particulate matter emissions from wood burning appliances through implementation of the city's Wood Burning Appliance code.

OSC-M Reduce Greenhouse Gas Emissions.

OSC-M-1 Meet local, regional, and state targets for reduction of greenhouse gas emissions through implementation of the Climate Action Plan.

City of Santa Rosa Climate Action Plan

Adopted by the City of Santa Rosa on June 5, 2012, the Climate Action Plan[37] (CAP) is a document that presents measures that will reduce local GHG measures that will meet state, regional, and local reduction targets. The CAP focuses on three target years: 2015, 2020, and 2035. The 2015 year was to determine if the City could meet the reduction target of 25% below 1990 levels by 2015. The 2020 year is included for consistency with AB 32 targets, while a 2035 GHG emission forecast was developed to be consistent with the 2035 General Plan. The City includes several reduction measures that apply to a variety of sectors within the CAP to help sources of GHGs reduce their emissions in a multitude of ways.

The City's CAP follows both the State CEQA Guidelines and BAAQMD's guidelines by incorporating the standard elements of a Qualified GHG Reduction Strategy. Standard elements include measures and performance standards which demonstrates with that when implemented on a project-by-project basis, the measures would collectively achieve specified emissions levels. The GHG reduction measures included in the CAP demonstrate the City's ability to reach its GHG reduction targets.

The Santa Rosa CAP demonstrates that it would meet the anticipated State 2030 GHG emissions reductions targets. If a project can demonstrate consistency with the Santa Rosa CAP, its impacts related to GHG emission by year 2030 would be considered less than significant and fully

[37] Climate Action Plan City of Santa Rosa; June 5, 2012. https://srcity.org/DocumentCenter/View/10762/Climate-Action-Plan-PDF?bidId=

consistent with State GHG emissions reduction requirements, with no need to quantify project-specific emission. This is consistent with BAAQMD guidelines related to the analysis of projects under the 2020 GHG emissions reduction targets, as applied to the updated 2030 targets.

Additionally, the CAP includes the New Development Checklist (Appendix E in the CAP) to ensure 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.

Declaration of a Climate Emergency and Immediate Emergency Mobilization to Restore a Safe Climate

On January 14, 2020, the Santa Rosa City Council adopted a resolution endorsing the declaration of a climate emergency and immediate emergency mobilization to restore a safe climate (Resolution No. Res-2020-002). The City joins a nationwide call for a just transition away from fossil fuels and joins efforts to mobilize efforts to enact policies that reduce GHG emissions. City will contribute to the development of a countywide 2030 Climate Emergency Mobilization Strategy that focuses on identifying key local actions, including a ten-year Emergency Policy Package to prioritize a short list of the most impactful local policies that will drive changes and identify key areas for state level advocacy.

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 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 Santa Rosa 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 Emissions

The project service population efficiency rate is based on the number of future residents and full-time employees. According to the project applicant, there would be approximately 90 tenants and 5 employees. Total service population was estimated at 95 to calculate the per capita emissions.

Construction GHG Emissions

GHG emissions associated with construction were computed at 472 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, annual GHG emissions resulting from operation of the proposed project are predicted to be 398 metric tons (MT) of CO_2e in 2024, 357 MT of CO_2e in 2030, and 332 MT of CO_2e in 2035. The service population emission for the years 2024, 2030, 2035 are predicted to be 4.2, 3.8, and 3.5 MT/CO_{2e}/year/service population, respectively.

The project is subject to the City of Santa Rosa's CAP to meet AB 32 requirements. The implementation of *Mitigation Measure GHG-1*, 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	Proposed Project in 2035
Area	0.60	0.60	0.60
Energy Consumption	50.02	50.02	50.02
Mobile	306.13	265.04	239.54
Solid Waste Generation	29.96	29.96	29.96
Water Usage	11.64	11.64	11.64
Total (MT CO_{2e}/year)	398.35	357.26	331.76
Service Population Emissions (MT CO_{2e}/year/service population)	4.2	3.8	3.5

Mitigation Measure GHG-1: Santa Rosa's CAP Appendix E New Development 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 Santa Rosa's CAP Appendix E New Development Checklist, except where the item is not applicable or where a suitable substitution is provided.

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 and operational criteria air pollutant and GHG emissions. The operational outputs for 2030 and 2035 uses are also included in this attachment. 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. 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 project site and project MEI.

Attachment 6 is the New Development 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 Contaminants (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.[38] 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.[39] 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.[40] 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). However, CARB and the BAAQMD recommend the use of a residential exposure duration of 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.

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,

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[38] 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.

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

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

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 for moderate intensity.

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

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

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

Where:

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

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

Where:

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

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

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

Parameter	*Exposure Type* →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor (mg/kg-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*

* Exposure Frequency can change dependent on the type of receptors (i.e. residential, worker, school, daycare). For worker exposures (adult), the exposure duration and frequency are 25 years 250 days/year and FAH is not applicable.

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: 3111 Santa Rosa Ave

See Equipment Type TAB for type, horsepower and load factor

Complete ALL Portions in Yellow

Project Size 48 Dwelling Units | 4.51 total project acres disturbed

33,000 s.f. residential

s.f. retail

901 s.f. office/commercial

39,000 s.f. other, specify: Self-Storage

s.f. parking garage | spaces

91,000 s.f. parking lot | 92 cars + 44 storage spaces

Construction Hours 8 am to 5 pm

Pile Driving? Y/N?

Project include on-site GENERATOR OR FIRE PUMP during project OPERATION? 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:**	**1/3/2022**	**Total phase:**	**20**			**Overall Import/Export Volumes**
		End Date:	**1/28/2022**					
1	Concrete/Industrial Saws	81	0.73	8	20	8	9461	**Demolition Volume**
3	Excavators	158	0.38	8	20	8	28819	Square footage of buildings to be demolished
2	Rubber-Tired Dozers	247	0.4	8	20	8	31616	(*or* total tons to be hauled)
	Tractors/Loaders/Backhoes	97	0.37			0	0	**?** square feet *or*
	Other Equipment?							**?** Hauling volume (tons)
								Any pavement demolished and hauled? **?** **tons**
	Site Preparation	**Start Date:**	**1/29/2022**	**Total phase:**	**5**			
		End Date:	**2/4/2022**					
	Graders	187	0.41			0	0	
3	Rubber Tired Dozers	247	0.4	8	5	8	11856	
4	Tractors/Loaders/Backhoes	97	0.37	8	5	8	5742	
	Other Equipment?							
	Grading / Excavation	**Start Date:**	**2/5/2022**	**Total phase:**	**8**			
		End Date:	**2/16/2022**					**Soil Hauling Volume**
1	Excavators	158	0.38	8	8	8	3843	Export volume = **?** cubic yards?
1	Graders	187	0.41	8	8	8	4907	Import volume = **?** cubic yards?
1	Rubber Tired Dozers	247	0.4	8	8	8	6323	
	Concrete/Industrial Saws	81	0.73			0	0	
3	Tractors/Loaders/Backhoes	97	0.37	8	8	8	6891	
	Other Equipment?							
	Trenching/Foundation	**Start Date:**	**2/17/2022**	**Total phase:**	**10**			
		End Date:	**3/2/2022**					
1	Tractor/Loader/Backhoe	97	0.37	8	10	8	2871	
1	Excavators	158	0.38	8	10	8	4803	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**2/17/2022**	**Total phase:**	**230**			**Cement Trucks? _?_ Total Round-Trips**
		End Date:	**1/4/2023**					
1	Cranes	231	0.29	7	230	7	107854	Electric? (Y/N) ___ Otherwise assumed diesel
3	Forklifts	89	0.2	8	230	8	98256	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	230	8	114374	Or temporary line power? (Y/N) ___
3	Tractors/Loaders/Backhoes	97	0.37	7	230	7	173349	
1	Welders	46	0.45	8	230	8	38088	
	Other Equipment?							
	Building - Interior/Architectural Coating	**Start Date:**	**1/31/2023**	**Total phase:**	**18**			
		End Date:	**2/23/2023**					
1	Air Compressors	78	0.48	6	18	6	4044	
	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**1/5/2023**	**Total phase:**	**18**			
		Start Date:	**1/30/2023**					
2	Cement and Mortar Mixers	9	0.56	6	18	6	1089	
1	Pavers	130	0.42	8	18	8	7862	**Asphalt? ___ cubic yards or ____ round trips?**
2	Paving Equipment	132	0.36	6	18	6	10264	
2	Rollers	80	0.38	6	18	6	6566	
1	Tractors/Loaders/Backhoes	97	0.37	8	18	8	5168	
	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 & 2023	0.67	1.90	0.10	0.09	290.64	
EMFAC						
2022 & 2023	0.06	0.23	0.01	0.01	180.94	
Total Construction Emissions by Year						
2022 & 2023	0.73	2.13	0.11	0.10	471.59	
	Total Construction Emissions					
Tons	0.73	2.13	0.11	0.10	471.59	
Pounds/Workdays	*Average Daily Emissions*				Workdays	
2022 & 2023	4.74	13.78	0.74	0.65		**309**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		
	Total Construction Emissions					
Pounds	4.74	13.78	0.74	0.65	0.00	
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	0.58	0.28	0.26	0.07		
	Existing Use Emissions					
Total	0.00	0.00	0.00	0.00		
	Net Annual Operational Emissions					
Tons/year	0.58	0.28	0.26	0.07		
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**		
	Average Daily Emissions					
Pounds Per Day	3.18	1.53	1.42	0.38		
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Category	**CO2e**					
	Project	Existing	Project 2030	Existing	Project 2035	Existing
Area	0.60	0.00	0.60	0.00	0.60	0.00
Energy	50.02	0.00	50.02	0.00	50.02	0.00
Mobile	306.13	0.00	265.04	0.00	239.54	0.00
Waste	29.96	0.00	29.96	0.00	29.96	0.00
Water	11.64	0.00	11.64	0.00	11.64	0.00
TOTAL	398.35	0.00	357.26	0.00	331.76	0.00
Net GHG Emissions		398.35		357.26		331.76
Service Population	95.00					
Per Capita Emissions		4.19		3.76		3.49

Traffic Consultant Trip Gen					CalEEMod Default		
Land Use	**Size**	**Daily Trips**	**New Trips**	**Weekday Trip Gen**	**Weekday**	**Sat**	**Sun**
Apartments Mid Rise	48	261	261	***5.44***	5.44	4.91	4.09
					Rev	***4.91***	***4.09***
Unrefrigerated Warehouse	40	60	60	***1.51***	1.74	1.74	1.74
					Rev	***1.51***	***1.51***

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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	0.90	1000sqft	0.00	901.00	0
Unrefrigerated Warehouse-No Rail	39.00	1000sqft	0.00	39,000.00	0
Parking Lot	136.00	Space	0.00	91,000.00	0
Apartments Mid Rise	48.00	Dwelling Unit	4.51	33,000.00	137

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2024
Utility Company	Sonoma Clean Power				
CO2 Intensity (lb/MWhr)	119.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Self-storage = unrefrigerated warehouse-no rail. Unit amounts, acreage, and square footage provided by applicant.

Construction Phase - CalEEMod defaults assumed. No information provided by applicant.

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

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Off-road Equipment - Assumed 1 piece of equipment each for trenching.

Trips and VMT - All trips entered into EMFAC2021

Vehicle Trips - Trip rates updated from information provided by applicant.

Vehicle Emission Factors - Emission Factors updated from EMFAC2021 for Sonoma County in 2024

Woodstoves - No woodstoves or fireplaces

Water And Wastewater - 100% aerobic

Construction Off-road Equipment Mitigation - All equipment t4i

Fleet Mix - Fleet Mix updated from EMFAC2021 for Sonoma County in 2024

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

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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
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	7.20	0.00
tblFireplaces	NumberNoFireplace	1.92	0.00
tblFireplaces	NumberWood	8.16	0.00
tblFleetMix	HHD	6.5680e-003	0.02
tblFleetMix	HHD	6.5680e-003	0.02
tblFleetMix	HHD	6.5680e-003	0.02
tblFleetMix	HHD	6.5680e-003	0.02
tblFleetMix	LDA	0.54	0.49
tblFleetMix	LDA	0.54	0.49
tblFleetMix	LDA	0.54	0.49
tblFleetMix	LDA	0.54	0.49
tblFleetMix	LDT1	0.06	0.05
tblFleetMix	LDT1	0.06	0.05
tblFleetMix	LDT1	0.06	0.05
tblFleetMix	LDT1	0.06	0.05
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LDT2	0.17	0.21

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tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.04	0.05
tblFleetMix	LHD1	0.04	0.05
tblFleetMix	LHD1	0.04	0.05
tblFleetMix	LHD1	0.04	0.05
tblFleetMix	LHD2	8.8770e-003	0.01
tblFleetMix	LHD2	8.8770e-003	0.01
tblFleetMix	LHD2	8.8770e-003	0.01
tblFleetMix	LHD2	8.8770e-003	0.01
tblFleetMix	MCY	0.03	4.4150e-003
tblFleetMix	MCY	0.03	4.4150e-003
tblFleetMix	MCY	0.03	4.4150e-003
tblFleetMix	MCY	0.03	4.4150e-003
tblFleetMix	MDV	0.13	0.14
tblFleetMix	MDV	0.13	0.14
tblFleetMix	MDV	0.13	0.14
tblFleetMix	MDV	0.13	0.14
tblFleetMix	MH	4.3470e-003	1.2400e-003
tblFleetMix	MH	4.3470e-003	1.2400e-003
tblFleetMix	MH	4.3470e-003	1.2400e-003
tblFleetMix	MH	4.3470e-003	1.2400e-003
tblFleetMix	MHD	0.01	0.02
tblFleetMix	MHD	0.01	0.02
tblFleetMix	MHD	0.01	0.02
tblFleetMix	MHD	0.01	0.02
tblFleetMix	OBUS	1.0930e-003	1.6700e-003
tblFleetMix	OBUS	1.0930e-003	1.6700e-003
tblFleetMix	OBUS	1.0930e-003	1.6700e-003
tblFleetMix	OBUS	1.0930e-003	1.6700e-003

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tblFleetMix	SBUS	1.5460e-003	1.0680e-003
tblFleetMix	SBUS	1.5460e-003	1.0680e-003
tblFleetMix	SBUS	1.5460e-003	1.0680e-003
tblFleetMix	SBUS	1.5460e-003	1.0680e-003
tblFleetMix	UBUS	2.9700e-004	1.0930e-003
tblFleetMix	UBUS	2.9700e-004	1.0930e-003
tblFleetMix	UBUS	2.9700e-004	1.0930e-003
tblFleetMix	UBUS	2.9700e-004	1.0930e-003
tblLandUse	LandUseSquareFeet	900.00	901.00
tblLandUse	LandUseSquareFeet	54,400.00	91,000.00
tblLandUse	LandUseSquareFeet	48,000.00	33,000.00
tblLandUse	LotAcreage	0.02	0.00
tblLandUse	LotAcreage	0.90	0.00
tblLandUse	LotAcreage	1.22	0.00
tblLandUse	LotAcreage	1.26	4.51
tblTripsAndVMT	VendorTripNumber	27.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	89.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblVehicleEF	HHD	0.02	0.18
tblVehicleEF	HHD	0.04	0.06
tblVehicleEF	HHD	5.38	4.65
tblVehicleEF	HHD	0.44	0.59
tblVehicleEF	HHD	0.02	1.4200e-003
tblVehicleEF	HHD	907.14	764.98

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tblVehicleEF	HHD	1,446.45	1,689.08
tblVehicleEF	HHD	0.17	0.05
tblVehicleEF	HHD	0.14	0.12
tblVehicleEF	HHD	0.23	0.27
tblVehicleEF	HHD	2.4000e-005	3.4000e-005
tblVehicleEF	HHD	4.84	3.95
tblVehicleEF	HHD	2.86	2.17
tblVehicleEF	HHD	2.79	2.75
tblVehicleEF	HHD	3.0250e-003	3.0650e-003
tblVehicleEF	HHD	0.06	0.08
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	3.0000e-006	2.0000e-006
tblVehicleEF	HHD	2.8950e-003	2.9270e-003
tblVehicleEF	HHD	0.02	0.03
tblVehicleEF	HHD	8.4910e-003	8.4740e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	3.0000e-006	2.0000e-006
tblVehicleEF	HHD	1.1000e-005	5.2000e-004
tblVehicleEF	HHD	5.7100e-004	1.4800e-004
tblVehicleEF	HHD	0.37	0.30
tblVehicleEF	HHD	6.0000e-006	5.2000e-004
tblVehicleEF	HHD	0.03	0.02
tblVehicleEF	HHD	3.6900e-004	1.3560e-003
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	8.4670e-003	6.7510e-003
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	2.0000e-006	1.0000e-006
tblVehicleEF	HHD	1.1000e-005	5.2000e-004

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tblVehicleEF	HHD	5.7100e-004	1.4800e-004
tblVehicleEF	HHD	0.42	0.51
tblVehicleEF	HHD	6.0000e-006	5.2000e-004
tblVehicleEF	HHD	0.07	0.09
tblVehicleEF	HHD	3.6900e-004	1.3560e-003
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	LDA	2.2540e-003	2.5930e-003
tblVehicleEF	LDA	0.05	0.07
tblVehicleEF	LDA	0.59	0.76
tblVehicleEF	LDA	2.22	3.37
tblVehicleEF	LDA	244.65	256.66
tblVehicleEF	LDA	51.03	67.23
tblVehicleEF	LDA	4.6180e-003	5.0140e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.18	0.26
tblVehicleEF	LDA	0.04	8.4520e-003
tblVehicleEF	LDA	1.5340e-003	1.3470e-003
tblVehicleEF	LDA	1.7650e-003	2.0370e-003
tblVehicleEF	LDA	0.02	2.9580e-003
tblVehicleEF	LDA	1.4150e-003	1.2420e-003
tblVehicleEF	LDA	1.6230e-003	1.8730e-003
tblVehicleEF	LDA	0.04	0.33
tblVehicleEF	LDA	0.10	0.10
tblVehicleEF	LDA	0.03	0.33
tblVehicleEF	LDA	8.8880e-003	0.01
tblVehicleEF	LDA	0.03	0.25
tblVehicleEF	LDA	0.22	0.35
tblVehicleEF	LDA	2.4200e-003	2.5370e-003

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tblVehicleEF	LDA	5.0500e-004	6.6500e-004
tblVehicleEF	LDA	0.04	0.33
tblVehicleEF	LDA	0.10	0.10
tblVehicleEF	LDA	0.03	0.33
tblVehicleEF	LDA	0.01	0.02
tblVehicleEF	LDA	0.03	0.25
tblVehicleEF	LDA	0.24	0.38
tblVehicleEF	LDT1	6.1950e-003	9.2600e-003
tblVehicleEF	LDT1	0.08	0.14
tblVehicleEF	LDT1	1.24	1.97
tblVehicleEF	LDT1	2.56	7.47
tblVehicleEF	LDT1	300.23	335.44
tblVehicleEF	LDT1	64.23	93.02
tblVehicleEF	LDT1	8.4610e-003	0.01
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.11	0.19
tblVehicleEF	LDT1	0.29	0.50
tblVehicleEF	LDT1	0.04	0.01
tblVehicleEF	LDT1	2.1490e-003	2.4830e-003
tblVehicleEF	LDT1	2.5560e-003	3.6720e-003
tblVehicleEF	LDT1	0.02	3.7750e-003
tblVehicleEF	LDT1	1.9800e-003	2.2880e-003
tblVehicleEF	LDT1	2.3510e-003	3.3760e-003
tblVehicleEF	LDT1	0.12	0.88
tblVehicleEF	LDT1	0.26	0.24
tblVehicleEF	LDT1	0.09	0.88
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.14	0.72
tblVehicleEF	LDT1	0.42	0.76

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tblVehicleEF	LDT1	2.9710e-003	3.3160e-003
tblVehicleEF	LDT1	6.3600e-004	9.2000e-004
tblVehicleEF	LDT1	0.12	0.88
tblVehicleEF	LDT1	0.26	0.24
tblVehicleEF	LDT1	0.09	0.88
tblVehicleEF	LDT1	0.04	0.06
tblVehicleEF	LDT1	0.14	0.72
tblVehicleEF	LDT1	0.46	0.84
tblVehicleEF	LDT2	3.9110e-003	3.3880e-003
tblVehicleEF	LDT2	0.07	0.09
tblVehicleEF	LDT2	0.87	0.95
tblVehicleEF	LDT2	2.88	4.20
tblVehicleEF	LDT2	317.01	344.53
tblVehicleEF	LDT2	67.96	89.75
tblVehicleEF	LDT2	6.8600e-003	6.9940e-003
tblVehicleEF	LDT2	0.03	0.04
tblVehicleEF	LDT2	0.08	0.09
tblVehicleEF	LDT2	0.29	0.38
tblVehicleEF	LDT2	0.04	0.01
tblVehicleEF	LDT2	1.5530e-003	1.4500e-003
tblVehicleEF	LDT2	1.8180e-003	2.2130e-003
tblVehicleEF	LDT2	0.02	3.5780e-003
tblVehicleEF	LDT2	1.4300e-003	1.3340e-003
tblVehicleEF	LDT2	1.6720e-003	2.0350e-003
tblVehicleEF	LDT2	0.07	0.35
tblVehicleEF	LDT2	0.16	0.10
tblVehicleEF	LDT2	0.06	0.35
tblVehicleEF	LDT2	0.02	0.01
tblVehicleEF	LDT2	0.08	0.27

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tblVehicleEF	LDT2	0.34	0.44
tblVehicleEF	LDT2	3.1360e-003	3.4050e-003
tblVehicleEF	LDT2	6.7200e-004	8.8700e-004
tblVehicleEF	LDT2	0.07	0.35
tblVehicleEF	LDT2	0.16	0.10
tblVehicleEF	LDT2	0.06	0.35
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.08	0.27
tblVehicleEF	LDT2	0.38	0.48
tblVehicleEF	LHD1	4.0660e-003	4.3970e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.16	0.17
tblVehicleEF	LHD1	1.20	1.14
tblVehicleEF	LHD1	0.95	1.69
tblVehicleEF	LHD1	9.58	9.38
tblVehicleEF	LHD1	760.21	774.13
tblVehicleEF	LHD1	9.34	14.01
tblVehicleEF	LHD1	9.7900e-004	8.9800e-004
tblVehicleEF	LHD1	0.06	0.06
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.10	0.09
tblVehicleEF	LHD1	1.65	1.39
tblVehicleEF	LHD1	0.26	0.36
tblVehicleEF	LHD1	1.1410e-003	1.0330e-003
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	2.5300e-004	2.4100e-004

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tblVehicleEF	LHD1	1.0920e-003	9.8800e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.5570e-003	2.5000e-003
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	2.3300e-004	2.2100e-004
tblVehicleEF	LHD1	2.1680e-003	0.13
tblVehicleEF	LHD1	0.09	0.03
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.0570e-003	0.13
tblVehicleEF	LHD1	0.14	0.15
tblVehicleEF	LHD1	0.33	0.19
tblVehicleEF	LHD1	0.07	0.10
tblVehicleEF	LHD1	9.2000e-005	9.1000e-005
tblVehicleEF	LHD1	7.3840e-003	7.5210e-003
tblVehicleEF	LHD1	9.3000e-005	1.3800e-004
tblVehicleEF	LHD1	2.1680e-003	0.13
tblVehicleEF	LHD1	0.09	0.03
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.0570e-003	0.13
tblVehicleEF	LHD1	0.18	0.18
tblVehicleEF	LHD1	0.33	0.19
tblVehicleEF	LHD1	0.08	0.11
tblVehicleEF	LHD2	2.8720e-003	2.9280e-003
tblVehicleEF	LHD2	7.8900e-003	8.1060e-003
tblVehicleEF	LHD2	8.0290e-003	0.01
tblVehicleEF	LHD2	0.13	0.13
tblVehicleEF	LHD2	0.77	0.65
tblVehicleEF	LHD2	0.53	1.04
tblVehicleEF	LHD2	14.87	14.53

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tblVehicleEF	LHD2	771.37	842.13
tblVehicleEF	LHD2	6.79	8.61
tblVehicleEF	LHD2	1.9370e-003	1.8660e-003
tblVehicleEF	LHD2	0.08	0.09
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.12	0.12
tblVehicleEF	LHD2	1.39	1.21
tblVehicleEF	LHD2	0.17	0.22
tblVehicleEF	LHD2	1.5220e-003	1.4750e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.03
tblVehicleEF	LHD2	1.0800e-004	8.7000e-005
tblVehicleEF	LHD2	1.4560e-003	1.4110e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.7270e-003	2.7030e-003
tblVehicleEF	LHD2	0.02	0.03
tblVehicleEF	LHD2	9.9000e-005	8.0000e-005
tblVehicleEF	LHD2	9.0300e-004	0.05
tblVehicleEF	LHD2	0.04	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.8900e-004	0.05
tblVehicleEF	LHD2	0.13	0.14
tblVehicleEF	LHD2	0.11	0.08
tblVehicleEF	LHD2	0.04	0.05
tblVehicleEF	LHD2	1.4200e-004	1.3900e-004
tblVehicleEF	LHD2	7.4310e-003	8.1000e-003
tblVehicleEF	LHD2	6.7000e-005	8.5000e-005
tblVehicleEF	LHD2	9.0300e-004	0.05

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tblVehicleEF	LHD2	0.04	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.8900e-004	0.05
tblVehicleEF	LHD2	0.15	0.16
tblVehicleEF	LHD2	0.11	0.08
tblVehicleEF	LHD2	0.04	0.06
tblVehicleEF	MCY	0.36	0.20
tblVehicleEF	MCY	0.27	0.22
tblVehicleEF	MCY	21.46	15.97
tblVehicleEF	MCY	9.19	8.76
tblVehicleEF	MCY	217.66	192.12
tblVehicleEF	MCY	63.40	56.26
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	0.01
tblVehicleEF	MCY	1.19	0.68
tblVehicleEF	MCY	0.28	0.18
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	2.1330e-003	1.9930e-003
tblVehicleEF	MCY	3.2060e-003	3.7350e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	1.9970e-003	1.8700e-003
tblVehicleEF	MCY	3.0250e-003	3.5240e-003
tblVehicleEF	MCY	0.91	4.90
tblVehicleEF	MCY	0.88	3.55
tblVehicleEF	MCY	0.48	4.90
tblVehicleEF	MCY	2.49	1.39
tblVehicleEF	MCY	0.78	3.91
tblVehicleEF	MCY	2.08	1.69
tblVehicleEF	MCY	2.1540e-003	1.8990e-003

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tblVehicleEF	MCY	6.2700e-004	5.5600e-004
tblVehicleEF	MCY	0.91	0.15
tblVehicleEF	MCY	0.88	3.55
tblVehicleEF	MCY	0.48	0.15
tblVehicleEF	MCY	3.05	1.64
tblVehicleEF	MCY	0.78	3.91
tblVehicleEF	MCY	2.26	1.83
tblVehicleEF	MDV	4.5840e-003	4.6000e-003
tblVehicleEF	MDV	0.09	0.12
tblVehicleEF	MDV	0.93	1.11
tblVehicleEF	MDV	3.33	4.72
tblVehicleEF	MDV	390.40	419.98
tblVehicleEF	MDV	83.06	108.54
tblVehicleEF	MDV	9.2130e-003	0.01
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.10	0.12
tblVehicleEF	MDV	0.37	0.51
tblVehicleEF	MDV	0.04	0.01
tblVehicleEF	MDV	1.6360e-003	1.5890e-003
tblVehicleEF	MDV	1.9350e-003	2.3660e-003
tblVehicleEF	MDV	0.02	3.6720e-003
tblVehicleEF	MDV	1.5110e-003	1.4680e-003
tblVehicleEF	MDV	1.7800e-003	2.1750e-003
tblVehicleEF	MDV	0.09	0.46
tblVehicleEF	MDV	0.19	0.12
tblVehicleEF	MDV	0.08	0.46
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.09	0.36
tblVehicleEF	MDV	0.44	0.62

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tblVehicleEF	MDV	3.8580e-003	4.1480e-003
tblVehicleEF	MDV	8.2200e-004	1.0730e-003
tblVehicleEF	MDV	0.09	0.46
tblVehicleEF	MDV	0.19	0.12
tblVehicleEF	MDV	0.08	0.46
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.09	0.36
tblVehicleEF	MDV	0.48	0.68
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	1.41	1.46
tblVehicleEF	MH	2.09	2.40
tblVehicleEF	MH	1,530.18	1,636.44
tblVehicleEF	MH	17.84	21.01
tblVehicleEF	MH	0.07	0.08
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	1.90	2.00
tblVehicleEF	MH	0.24	0.28
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.04	0.05
tblVehicleEF	MH	2.5700e-004	2.9500e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.3160e-003	3.3600e-003
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	2.3600e-004	2.7200e-004
tblVehicleEF	MH	0.73	34.52
tblVehicleEF	MH	0.07	9.05
tblVehicleEF	MH	0.26	34.52

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tblVehicleEF	MH	0.09	0.10
tblVehicleEF	MH	0.02	0.22
tblVehicleEF	MH	0.10	0.11
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.7700e-004	2.0800e-004
tblVehicleEF	MH	0.73	34.52
tblVehicleEF	MH	0.07	9.05
tblVehicleEF	MH	0.26	34.52
tblVehicleEF	MH	0.12	0.13
tblVehicleEF	MH	0.02	0.22
tblVehicleEF	MH	0.10	0.12
tblVehicleEF	MHD	2.3920e-003	0.01
tblVehicleEF	MHD	1.7580e-003	7.8790e-003
tblVehicleEF	MHD	6.8540e-003	8.5060e-003
tblVehicleEF	MHD	0.33	0.68
tblVehicleEF	MHD	0.25	0.36
tblVehicleEF	MHD	0.87	1.07
tblVehicleEF	MHD	69.69	163.33
tblVehicleEF	MHD	1,042.49	1,214.46
tblVehicleEF	MHD	6.53	8.25
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.15	0.16
tblVehicleEF	MHD	4.6810e-003	5.5400e-003
tblVehicleEF	MHD	0.40	0.89
tblVehicleEF	MHD	1.57	1.06
tblVehicleEF	MHD	1.83	1.47
tblVehicleEF	MHD	3.4700e-004	2.1920e-003
tblVehicleEF	MHD	0.13	0.05
tblVehicleEF	MHD	7.8910e-003	0.01

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tblVehicleEF	MHD	8.9000e-005	1.1500e-004
tblVehicleEF	MHD	3.3200e-004	2.0970e-003
tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	7.5450e-003	0.01
tblVehicleEF	MHD	8.2000e-005	1.0500e-004
tblVehicleEF	MHD	3.6600e-004	0.03
tblVehicleEF	MHD	0.02	6.7300e-003
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	1.8500e-004	0.03
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.02	0.06
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	6.6000e-004	1.5280e-003
tblVehicleEF	MHD	9.9040e-003	0.01
tblVehicleEF	MHD	6.5000e-005	8.2000e-005
tblVehicleEF	MHD	3.6600e-004	0.03
tblVehicleEF	MHD	0.02	6.7300e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.8500e-004	0.03
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.06
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	OBUS	7.2230e-003	8.1960e-003
tblVehicleEF	OBUS	5.0090e-003	0.01
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.63	0.58
tblVehicleEF	OBUS	0.60	0.81
tblVehicleEF	OBUS	2.20	2.73
tblVehicleEF	OBUS	99.59	88.64

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tblVehicleEF	OBUS	1,342.68	1,521.11
tblVehicleEF	OBUS	16.40	20.31
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.14	0.14
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.41	0.37
tblVehicleEF	OBUS	1.51	1.18
tblVehicleEF	OBUS	1.07	0.86
tblVehicleEF	OBUS	1.3400e-004	4.8400e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	7.9000e-003	0.02
tblVehicleEF	OBUS	1.7700e-004	2.1800e-004
tblVehicleEF	OBUS	1.2800e-004	4.6300e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	7.5450e-003	0.02
tblVehicleEF	OBUS	1.6300e-004	2.0000e-004
tblVehicleEF	OBUS	1.4070e-003	0.10
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.05
tblVehicleEF	OBUS	6.0200e-004	0.10
tblVehicleEF	OBUS	0.03	0.07
tblVehicleEF	OBUS	0.07	0.11
tblVehicleEF	OBUS	0.10	0.13
tblVehicleEF	OBUS	9.4600e-004	8.4200e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.6200e-004	2.0100e-004
tblVehicleEF	OBUS	1.4070e-003	0.10
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.06	0.06

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tblVehicleEF	OBUS	6.0200e-004	0.10
tblVehicleEF	OBUS	0.04	0.09
tblVehicleEF	OBUS	0.07	0.11
tblVehicleEF	OBUS	0.11	0.14
tblVehicleEF	SBUS	0.03	0.09
tblVehicleEF	SBUS	4.2900e-003	0.20
tblVehicleEF	SBUS	2.6150e-003	2.4670e-003
tblVehicleEF	SBUS	1.54	1.14
tblVehicleEF	SBUS	0.32	0.91
tblVehicleEF	SBUS	0.38	0.34
tblVehicleEF	SBUS	335.73	182.05
tblVehicleEF	SBUS	1,073.56	1,086.55
tblVehicleEF	SBUS	2.23	2.11
tblVehicleEF	SBUS	0.05	0.03
tblVehicleEF	SBUS	0.15	0.15
tblVehicleEF	SBUS	2.6560e-003	2.6520e-003
tblVehicleEF	SBUS	3.17	1.38
tblVehicleEF	SBUS	4.20	2.63
tblVehicleEF	SBUS	1.02	0.44
tblVehicleEF	SBUS	2.6880e-003	1.1780e-003
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	2.8000e-005	2.2000e-005
tblVehicleEF	SBUS	2.5720e-003	1.1250e-003
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.8250e-003	2.7570e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	2.5000e-005	2.0000e-005

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tblVehicleEF	SBUS	2.2700e-004	0.01
tblVehicleEF	SBUS	2.3150e-003	3.4230e-003
tblVehicleEF	SBUS	0.15	0.11
tblVehicleEF	SBUS	1.0500e-004	0.01
tblVehicleEF	SBUS	0.07	0.05
tblVehicleEF	SBUS	5.2190e-003	6.0400e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	3.1850e-003	1.5740e-003
tblVehicleEF	SBUS	0.01	9.7280e-003
tblVehicleEF	SBUS	2.2000e-005	2.1000e-005
tblVehicleEF	SBUS	2.2700e-004	0.01
tblVehicleEF	SBUS	2.3150e-003	3.4230e-003
tblVehicleEF	SBUS	0.21	0.23
tblVehicleEF	SBUS	1.0500e-004	0.01
tblVehicleEF	SBUS	0.08	0.25
tblVehicleEF	SBUS	5.2190e-003	6.0400e-003
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	UBUS	2.91	0.59
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	22.44	9.62
tblVehicleEF	UBUS	0.84	2.65
tblVehicleEF	UBUS	1,754.72	1,284.51
tblVehicleEF	UBUS	8.50	20.82
tblVehicleEF	UBUS	0.30	0.18
tblVehicleEF	UBUS	6.7320e-003	0.03
tblVehicleEF	UBUS	0.61	0.31
tblVehicleEF	UBUS	0.08	0.21
tblVehicleEF	UBUS	0.08	0.11
tblVehicleEF	UBUS	0.03	0.03

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tblVehicleEF	UBUS	4.3900e-003	2.5940e-003
tblVehicleEF	UBUS	7.7000e-005	1.2800e-004
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	7.7720e-003	6.3860e-003
tblVehicleEF	UBUS	4.1940e-003	2.4690e-003
tblVehicleEF	UBUS	7.1000e-005	1.1800e-004
tblVehicleEF	UBUS	2.5800e-004	0.04
tblVehicleEF	UBUS	3.7890e-003	0.02
tblVehicleEF	UBUS	1.5300e-004	0.04
tblVehicleEF	UBUS	0.04	0.03
tblVehicleEF	UBUS	9.5700e-004	0.04
tblVehicleEF	UBUS	0.05	0.10
tblVehicleEF	UBUS	8.1380e-003	6.7480e-003
tblVehicleEF	UBUS	8.4000e-005	2.0600e-004
tblVehicleEF	UBUS	2.5800e-004	0.04
tblVehicleEF	UBUS	3.7890e-003	0.02
tblVehicleEF	UBUS	1.5300e-004	0.04
tblVehicleEF	UBUS	2.97	0.63
tblVehicleEF	UBUS	9.5700e-004	0.04
tblVehicleEF	UBUS	0.05	0.10
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	ST_TR	1.74	1.51
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	SU_TR	1.74	1.51
tblVehicleTrips	WD_TR	9.74	0.00
tblVehicleTrips	WD_TR	1.74	1.51
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00

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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	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	0.96	0.00
tblWoodstoves	NumberNoncatalytic	0.96	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1937	1.7376	1.9395	3.0200e-003	0.0775	0.0924	0.1699	0.0390	0.0869	0.1259	0.0000	259.6986	259.6986	0.0615	0.0000	261.2352
2023	0.4776	0.1626	0.2212	3.4000e-004	0.0000	8.2000e-003	8.2000e-003	0.0000	7.7100e-003	7.7100e-003	0.0000	29.2227	29.2227	7.4200e-003	0.0000	29.4082
Maximum	**0.4776**	**1.7376**	**1.9395**	**3.0200e-003**	**0.0775**	**0.0924**	**0.1699**	**0.0390**	**0.0869**	**0.1259**	**0.0000**	**259.6986**	**259.6986**	**0.0615**	**0.0000**	**261.2352**

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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	0.0592	1.2647	2.0591	3.0200e-003	0.0349	9.3100e-003	0.0442	0.0175	9.3100e-003	0.0268	0.0000	259.6983	259.6983	0.0615	0.0000	261.2349
2023	0.4654	0.1424	0.2370	3.4000e-004	0.0000	8.0000e-004	8.0000e-004	0.0000	8.0000e-004	8.0000e-004	0.0000	29.2226	29.2226	7.4200e-003	0.0000	29.4082
Maximum	**0.4654**	**1.2647**	**2.0591**	**3.0200e-003**	**0.0349**	**9.3100e-003**	**0.0442**	**0.0175**	**9.3100e-003**	**0.0268**	**0.0000**	**259.6983**	**259.6983**	**0.0615**	**0.0000**	**261.2349**

	ROG	NOx	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	**21.84**	**25.95**	**-6.26**	**0.00**	**55.00**	**89.95**	**74.74**	**55.01**	**89.32**	**79.31**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-3-2022	4-2-2022	0.6184	0.3398
2	4-3-2022	7-2-2022	0.4334	0.3260
3	7-3-2022	10-2-2022	0.4381	0.3295
4	10-3-2022	1-2-2023	0.4374	0.3295
5	1-3-2023	4-2-2023	0.6108	0.5799
		Highest	0.6184	0.5799

2.2 Overall Operational

Unmitigated Operational

Date: 7/14/2021 4:32 PM

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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					
Area	0.3474	4.1200e-003	0.3579	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.7000e-004	0.0000	0.5995
Energy	2.9700e-003	0.0258	0.0140	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	49.5115	49.5115	6.0900e-003	1.2100e-003	50.0243
Mobile	0.2271	0.2506	1.2851	3.2200e-003	0.2541	3.4600e-003	0.2576	0.0638	3.2600e-003	0.0671	0.0000	300.1662	300.1662	0.0147	0.0188	306.1263
Waste						0.0000	0.0000		0.0000	0.0000	12.0942	0.0000	12.0942	0.7148	0.0000	29.9629
Water						0.0000	0.0000		0.0000	0.0000	4.3539	4.0181	8.3720	0.0161	9.6000e-003	11.6358
Total	**0.5775**	**0.2806**	**1.6570**	**3.4000e-003**	**0.2541**	**7.4900e-003**	**0.2616**	**0.0638**	**7.2900e-003**	**0.0711**	**16.4481**	**354.2811**	**370.7293**	**0.7522**	**0.0296**	**398.3487**

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	0.3474	4.1200e-003	0.3579	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.7000e-004	0.0000	0.5995
Energy	2.9700e-003	0.0258	0.0140	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	49.5115	49.5115	6.0900e-003	1.2100e-003	50.0243
Mobile	0.2271	0.2506	1.2851	3.2200e-003	0.2541	3.4600e-003	0.2576	0.0638	3.2600e-003	0.0671	0.0000	300.1662	300.1662	0.0147	0.0188	306.1263
Waste						0.0000	0.0000		0.0000	0.0000	12.0942	0.0000	12.0942	0.7148	0.0000	29.9629
Water						0.0000	0.0000		0.0000	0.0000	4.3539	4.0181	8.3720	0.0161	9.6000e-003	11.6358

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Total	**0.5775**	**0.2806**	**1.6570**	**3.4000e-003**	**0.2541**	**7.4900e-003**	**0.2616**	**0.0638**	**7.2900e-003**	**0.0711**	**16.4481**	**354.2811**	**370.7293**	**0.7522**	**0.0296**	**398.3487**

	ROG	NOx	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	1/3/2022	1/28/2022	5	20	
2	Site Preparation	Site Preparation	1/29/2022	2/4/2022	5	5	
3	Grading	Grading	2/5/2022	2/16/2022	5	8	
4	Trenching	Trenching	2/17/2022	3/2/2022	5	10	
5	Building Construction	Building Construction	3/3/2022	1/18/2023	5	230	
6	Paving	Paving	1/19/2023	2/13/2023	5	18	
7	Architectural Coating	Architectural Coating	2/14/2023	3/9/2023	5	18	

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 8

Acres of Paving: 0

Residential Indoor: 66,825; Residential Outdoor: 22,275; Non-Residential Indoor: 59,852; Non-Residential Outdoor: 19,951; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38

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Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	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	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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Paving	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	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					
Off-Road	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**		**0.0124**	**0.0124**		**0.0116**	**0.0116**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

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

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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	5.8400e-003	0.1356	0.2467	3.9000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**5.8400e-003**	**0.1356**	**0.2467**	**3.9000e-004**		**6.2000e-004**	**6.2000e-004**		**6.2000e-004**	**6.2000e-004**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

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

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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**

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					0.0491	0.0000	0.0491	0.0253	0.0000	0.0253	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9300e-003	0.0827	0.0492	1.0000e-004		4.0300e-003	4.0300e-003		3.7100e-003	3.7100e-003	0.0000	8.3599	8.3599	2.7000e-003	0.0000	8.4274
Total	**7.9300e-003**	**0.0827**	**0.0492**	**1.0000e-004**	**0.0491**	**4.0300e-003**	**0.0532**	**0.0253**	**3.7100e-003**	**0.0290**	**0.0000**	**8.3599**	**8.3599**	**2.7000e-003**	**0.0000**	**8.4274**

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					
Fugitive Dust					0.0221	0.0000	0.0221	0.0114	0.0000	0.0114	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7400e-003	0.0304	0.0574	1.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	8.3598	8.3598	2.7000e-003	0.0000	8.4274
Total	**1.7400e-003**	**0.0304**	**0.0574**	**1.0000e-004**	**0.0221**	**1.6000e-004**	**0.0223**	**0.0114**	**1.6000e-004**	**0.0115**	**0.0000**	**8.3598**	**8.3598**	**2.7000e-003**	**0.0000**	**8.4274**

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

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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**

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					0.0283	0.0000	0.0283	0.0137	0.0000	0.0137	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7900e-003	0.0834	0.0611	1.2000e-004		3.7600e-003	3.7600e-003		3.4600e-003	3.4600e-003	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062
Total	**7.7900e-003**	**0.0834**	**0.0611**	**1.2000e-004**	**0.0283**	**3.7600e-003**	**0.0321**	**0.0137**	**3.4600e-003**	**0.0172**	**0.0000**	**10.4219**	**10.4219**	**3.3700e-003**	**0.0000**	**10.5062**

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					
Fugitive Dust					0.0128	0.0000	0.0128	6.1600e-003	0.0000	6.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0800e-003	0.0413	0.0760	1.2000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062
Total	**2.0800e-003**	**0.0413**	**0.0760**	**1.2000e-004**	**0.0128**	**1.9000e-004**	**0.0129**	**6.1600e-003**	**1.9000e-004**	**6.3500e-003**	**0.0000**	**10.4219**	**10.4219**	**3.3700e-003**	**0.0000**	**10.5062**

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

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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**

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	1.8400e-003	0.0173	0.0275	4.0000e-005		8.8000e-004	8.8000e-004		8.1000e-004	8.1000e-004	0.0000	3.6344	3.6344	1.1800e-003	0.0000	3.6638
Total	**1.8400e-003**	**0.0173**	**0.0275**	**4.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.1000e-004**	**8.1000e-004**	**0.0000**	**3.6344**	**3.6344**	**1.1800e-003**	**0.0000**	**3.6638**

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					
Off-Road	6.7000e-004	0.0182	0.0313	4.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.6344	3.6344	1.1800e-003	0.0000	3.6638
Total	**6.7000e-004**	**0.0182**	**0.0313**	**4.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**3.6344**	**3.6344**	**1.1800e-003**	**0.0000**	**3.6638**

Mitigated Construction Off-Site

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

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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	0.1497	1.2971	1.5958	2.3700e-003		0.0713	0.0713		0.0674	0.0674	0.0000	203.2922	203.2922	0.0447	0.0000	204.4088
Total	**0.1497**	**1.2971**	**1.5958**	**2.3700e-003**		**0.0713**	**0.0713**		**0.0674**	**0.0674**	**0.0000**	**203.2922**	**203.2922**	**0.0447**	**0.0000**	**204.4088**

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**

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0489	1.0393	1.6477	2.3700e-003		8.2800e-003	8.2800e-003		8.2800e-003	8.2800e-003	0.0000	203.2919	203.2919	0.0447	0.0000	204.4086
Total	**0.0489**	**1.0393**	**1.6477**	**2.3700e-003**		**8.2800e-003**	**8.2800e-003**		**8.2800e-003**	**8.2800e-003**	**0.0000**	**203.2919**	**203.2919**	**0.0447**	**0.0000**	**204.4086**

Mitigated Construction Off-Site

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

3.6 Building Construction - 2023

Unmitigated Construction On-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					
Off-Road	8.2200e-003	0.0718	0.0952	1.4000e-004		3.6400e-003	3.6400e-003		3.4500e-003	3.4500e-003	0.0000	12.1840	12.1840	2.6500e-003	0.0000	12.2503
Total	**8.2200e-003**	**0.0718**	**0.0952**	**1.4000e-004**		**3.6400e-003**	**3.6400e-003**		**3.4500e-003**	**3.4500e-003**	**0.0000**	**12.1840**	**12.1840**	**2.6500e-003**	**0.0000**	**12.2503**

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

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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					
Off-Road	2.9300e-003	0.0623	0.0987	1.4000e-004		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	12.1840	12.1840	2.6500e-003	0.0000	12.2503
Total	**2.9300e-003**	**0.0623**	**0.0987**	**1.4000e-004**		**5.0000e-004**	**5.0000e-004**		**5.0000e-004**	**5.0000e-004**	**0.0000**	**12.1840**	**12.1840**	**2.6500e-003**	**0.0000**	**12.2503**

Mitigated Construction Off-Site

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

3.7 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

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Category	tons/yr										MT/yr					
Off-Road	8.2600e-003	0.0791	0.1097	1.7000e-004		3.9200e-003	3.9200e-003		3.6200e-003	3.6200e-003	0.0000	14.7407	14.7407	4.6300e-003	0.0000	14.8565
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2600e-003**	**0.0791**	**0.1097**	**1.7000e-004**		**3.9200e-003**	**3.9200e-003**		**3.6200e-003**	**3.6200e-003**	**0.0000**	**14.7407**	**14.7407**	**4.6300e-003**	**0.0000**	**14.8565**

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

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Category	tons/yr										MT/yr					
Off-Road	2.6200e-003	0.0706	0.1218	1.7000e-004		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	14.7407	14.7407	4.6300e-003	0.0000	14.8565
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.6200e-003**	**0.0706**	**0.1218**	**1.7000e-004**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**	**0.0000**	**14.7407**	**14.7407**	**4.6300e-003**	**0.0000**	**14.8565**

Mitigated Construction Off-Site

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

3.8 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

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Category	tons/yr										MT/yr					
Archit. Coating	0.4593					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7200e-003	0.0117	0.0163	3.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	2.2979	2.2979	1.4000e-004	0.0000	2.3014
Total	**0.4611**	**0.0117**	**0.0163**	**3.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.4000e-004**	**0.0000**	**2.3014**

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

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

Category	tons/yr										MT/yr					
Archit. Coating	0.4593					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9000e-004	9.5400e-003	0.0165	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.2979	2.2979	1.4000e-004	0.0000	2.3014
Total	**0.4598**	**9.5400e-003**	**0.0165**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.2979**	**2.2979**	**1.4000e-004**	**0.0000**	**2.3014**

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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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					
Mitigated	0.2271	0.2506	1.2851	3.2200e-003	0.2541	3.4600e-003	0.2576	0.0638	3.2600e-003	0.0671	0.0000	300.1662	300.1662	0.0147	0.0188	306.1263
Unmitigated	0.2271	0.2506	1.2851	3.2200e-003	0.2541	3.4600e-003	0.2576	0.0638	3.2600e-003	0.0671	0.0000	300.1662	300.1662	0.0147	0.0188	306.1263

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	261.12	235.68	196.32	573,311	573,311
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	58.89	58.89	58.89	171,930	171,930
Total	320.01	294.57	255.21	745,241	745,241

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
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rai	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.486165	0.045865	0.214340	0.141752	0.048048	0.013010	0.021353	0.019982	0.001670	0.001093	0.004415	0.001068	0.001240

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General Office Building	0.486165	0.045865	0.214340	0.141752	0.048048	0.013010	0.021353	0.019982	0.001670	0.001093	0.004415	0.001068	0.001240
Parking Lot	0.486165	0.045865	0.214340	0.141752	0.048048	0.013010	0.021353	0.019982	0.001670	0.001093	0.004415	0.001068	0.001240
Unrefrigerated Warehouse-No Rail	0.486165	0.045865	0.214340	0.141752	0.048048	0.013010	0.021353	0.019982	0.001670	0.001093	0.004415	0.001068	0.001240

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	20.1040	20.1040	5.5300e-003	6.7000e-004	20.4419
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	20.1040	20.1040	5.5300e-003	6.7000e-004	20.4419
NaturalGas Mitigated	2.9700e-003	0.0258	0.0140	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	29.4076	29.4076	5.6000e-004	5.4000e-004	29.5823
NaturalGas Unmitigated	2.9700e-003	0.0258	0.0140	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	29.4076	29.4076	5.6000e-004	5.4000e-004	29.5823

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

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Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	402321	2.1700e-003	0.0185	7.8900e-003	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003	0.0000	21.4694	21.4694	4.1000e-004	3.9000e-004	21.5969
General Office Building	14596.2	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7789	0.7789	1.0000e-005	1.0000e-005	0.7835
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	134160	7.2000e-004	6.5800e-003	5.5200e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1593	7.1593	1.4000e-004	1.3000e-004	7.2018
Total		**2.9700e-003**	**0.0258**	**0.0140**	**1.6000e-004**		**2.0500e-003**	**2.0500e-003**		**2.0500e-003**	**2.0500e-003**	**0.0000**	**29.4076**	**29.4076**	**5.6000e-004**	**5.3000e-004**	**29.5823**

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	402321	2.1700e-003	0.0185	7.8900e-003	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003	0.0000	21.4694	21.4694	4.1000e-004	3.9000e-004	21.5969
General Office Building	14596.2	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7789	0.7789	1.0000e-005	1.0000e-005	0.7835
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	134160	7.2000e-004	6.5800e-003	5.5200e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1593	7.1593	1.4000e-004	1.3000e-004	7.2018
Total		**2.9700e-003**	**0.0258**	**0.0140**	**1.6000e-004**		**2.0500e-003**	**2.0500e-003**		**2.0500e-003**	**2.0500e-003**	**0.0000**	**29.4076**	**29.4076**	**5.6000e-004**	**5.3000e-004**	**29.5823**

5.3 Energy by Land Use - Electricity

Unmitigated

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	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	185589	10.1001	2.7800e-003	3.4000e-004	10.2699
General Office Building	15470.2	0.8419	2.3000e-004	3.0000e-005	0.8561
Parking Lot	31850	1.7333	4.8000e-004	6.0000e-005	1.7625
Unrefrigerated Warehouse-No	136500	7.4286	2.0400e-003	2.5000e-004	7.5535
Total		**20.1040**	**5.5300e-003**	**6.8000e-004**	**20.4419**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	185589	10.1001	2.7800e-003	3.4000e-004	10.2699
General Office Building	15470.2	0.8419	2.3000e-004	3.0000e-005	0.8561
Parking Lot	31850	1.7333	4.8000e-004	6.0000e-005	1.7625
Unrefrigerated Warehouse-No	136500	7.4286	2.0400e-003	2.5000e-004	7.5535
Total		**20.1040**	**5.5300e-003**	**6.8000e-004**	**20.4419**

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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	0.3474	4.1200e-003	0.3579	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.7000e-004	0.0000	0.5995
Unmitigated	0.3474	4.1200e-003	0.3579	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.7000e-004	0.0000	0.5995

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	0.0459					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2906					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

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Landscaping	0.0109	4.1200e-003	0.3579	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.7000e-004	0.0000	0.5995
Total	**0.3474**	**4.1200e-003**	**0.3579**	**2.0000e-005**		**1.9800e-003**	**1.9800e-003**		**1.9800e-003**	**1.9800e-003**	**0.0000**	**0.5853**	**0.5853**	**5.7000e-004**	**0.0000**	**0.5995**

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	0.0459					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2906					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	0.0109	4.1200e-003	0.3579	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.7000e-004	0.0000	0.5995
Total	**0.3474**	**4.1200e-003**	**0.3579**	**2.0000e-005**		**1.9800e-003**	**1.9800e-003**		**1.9800e-003**	**1.9800e-003**	**0.0000**	**0.5853**	**0.5853**	**5.7000e-004**	**0.0000**	**0.5995**

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.3720	0.0161	9.6000e-003	11.6358
Unmitigated	8.3720	0.0161	9.6000e-003	11.6358

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.12739 / 1.97162	2.4030	4.1600e-003	2.4500e-003	3.2370
General Office Building	0.15996 / 0.0980402	0.1224	2.1000e-004	1.3000e-004	0.1650
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	9.01875 / 0	5.8467	0.0117	7.0300e-003	8.2337
Total		**8.3720**	**0.0161**	**9.6100e-003**	**11.6358**

Mitigated

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

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Apartments Mid Rise	3.12739 / 1.97162	2.4030	4.1600e-003	2.4500e-003	3.2370
General Office Building	0.15996 / 0.0980402	0.1224	2.1000e-004	1.3000e-004	0.1650
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	9.01875 / 0	5.8467	0.0117	7.0300e-003	8.2337
Total		**8.3720**	**0.0161**	**9.6100e-003**	**11.6358**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.0942	0.7148	0.0000	29.9629
Unmitigated	12.0942	0.7148	0.0000	29.9629

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	22.08	4.4820	0.2649	0.0000	11.1041
General Office Building	0.84	0.1705	0.0101	0.0000	0.4224
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	36.66	7.4417	0.4398	0.0000	18.4364
Total		**12.0942**	**0.7148**	**0.0000**	**29.9629**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	22.08	4.4820	0.2649	0.0000	11.1041
General Office Building	0.84	0.1705	0.0101	0.0000	0.4224
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	36.66	7.4417	0.4398	0.0000	18.4364

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Total		**12.0942**	**0.7148**	**0.0000**	**29.9629**

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	0.90	1000sqft	0.00	901.00	0
Unrefrigerated Warehouse-No Rail	39.00	1000sqft	0.00	39,000.00	0
Parking Lot	136.00	Space	0.00	91,000.00	0
Apartments Mid Rise	48.00	Dwelling Unit	4.51	33,000.00	137

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2030
Utility Company	Sonoma Clean Power				
CO2 Intensity (lb/MWhr)	119.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Self-storage = unrefrigerated warehouse-no rail. Unit amounts, acreage, and square footage provided by applicant.

Construction Phase - CalEEMod defaults assumed. No information provided by applicant.

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Date: 7/16/2021 1:03 PM

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Off-road Equipment - Assumed 1 piece of equipment each for trenching.

Trips and VMT - All trips entered into EMFAC2021

Vehicle Trips - Trip rates updated from information provided by applicant.

Vehicle Emission Factors - Emission Factors updated from EMFAC2021 for Sonoma County in 2030

Woodstoves - No woodstoves or fireplaces

Water And Wastewater - 100% aerobic

Construction Off-road Equipment Mitigation - All equipment t4i

Fleet Mix - Fleet Mix updated from EMFAC2021 for Sonoma County in 2030

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

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

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	7.20	0.00
tblFireplaces	NumberNoFireplace	1.92	0.00
tblFireplaces	NumberWood	8.16	0.00
tblFleetMix	HHD	6.6660e-003	0.02
tblFleetMix	HHD	6.6660e-003	0.02
tblFleetMix	HHD	6.6660e-003	0.02
tblFleetMix	HHD	6.6660e-003	0.02
tblFleetMix	LDA	0.58	0.52
tblFleetMix	LDA	0.58	0.52
tblFleetMix	LDA	0.58	0.52
tblFleetMix	LDA	0.58	0.52
tblFleetMix	LDT1	0.05	0.03
tblFleetMix	LDT1	0.05	0.03
tblFleetMix	LDT1	0.05	0.03
tblFleetMix	LDT1	0.05	0.03
tblFleetMix	LDT2	0.16	0.21
tblFleetMix	LDT2	0.16	0.21
tblFleetMix	LDT2	0.16	0.21

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tblFleetMix	LDT2	0.16	0.21
tblFleetMix	LHD1	0.03	0.04
tblFleetMix	LHD1	0.03	0.04
tblFleetMix	LHD1	0.03	0.04
tblFleetMix	LHD1	0.03	0.04
tblFleetMix	LHD2	7.4690e-003	0.01
tblFleetMix	LHD2	7.4690e-003	0.01
tblFleetMix	LHD2	7.4690e-003	0.01
tblFleetMix	LHD2	7.4690e-003	0.01
tblFleetMix	MCY	0.03	3.8050e-003
tblFleetMix	MCY	0.03	3.8050e-003
tblFleetMix	MCY	0.03	3.8050e-003
tblFleetMix	MCY	0.03	3.8050e-003
tblFleetMix	MDV	0.11	0.13
tblFleetMix	MDV	0.11	0.13
tblFleetMix	MDV	0.11	0.13
tblFleetMix	MDV	0.11	0.13
tblFleetMix	MH	3.2790e-003	9.1400e-004
tblFleetMix	MH	3.2790e-003	9.1400e-004
tblFleetMix	MH	3.2790e-003	9.1400e-004
tblFleetMix	MH	3.2790e-003	9.1400e-004
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.0800e-003	1.4760e-003
tblFleetMix	OBUS	1.0800e-003	1.4760e-003
tblFleetMix	OBUS	1.0800e-003	1.4760e-003
tblFleetMix	OBUS	1.0800e-003	1.4760e-003

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tblFleetMix	SBUS	1.4780e-003	1.0940e-003
tblFleetMix	SBUS	1.4780e-003	1.0940e-003
tblFleetMix	SBUS	1.4780e-003	1.0940e-003
tblFleetMix	SBUS	1.4780e-003	1.0940e-003
tblFleetMix	UBUS	2.7300e-004	1.1070e-003
tblFleetMix	UBUS	2.7300e-004	1.1070e-003
tblFleetMix	UBUS	2.7300e-004	1.1070e-003
tblFleetMix	UBUS	2.7300e-004	1.1070e-003
tblLandUse	LandUseSquareFeet	900.00	901.00
tblLandUse	LandUseSquareFeet	54,400.00	91,000.00
tblLandUse	LandUseSquareFeet	48,000.00	33,000.00
tblLandUse	LotAcreage	0.02	0.00
tblLandUse	LotAcreage	0.90	0.00
tblLandUse	LotAcreage	1.22	0.00
tblLandUse	LotAcreage	1.26	4.51
tblTripsAndVMT	VendorTripNumber	27.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	89.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblVehicleEF	HHD	0.02	0.16
tblVehicleEF	HHD	0.05	0.05
tblVehicleEF	HHD	5.32	4.50
tblVehicleEF	HHD	0.44	0.50
tblVehicleEF	HHD	8.8140e-003	1.0180e-003
tblVehicleEF	HHD	799.72	667.01

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tblVehicleEF	HHD	1,274.41	1,456.96
tblVehicleEF	HHD	0.10	0.01
tblVehicleEF	HHD	0.13	0.11
tblVehicleEF	HHD	0.20	0.23
tblVehicleEF	HHD	4.53	3.58
tblVehicleEF	HHD	2.56	1.63
tblVehicleEF	HHD	2.87	2.64
tblVehicleEF	HHD	2.1180e-003	1.9490e-003
tblVehicleEF	HHD	0.06	0.08
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	2.0270e-003	1.8590e-003
tblVehicleEF	HHD	0.02	0.03
tblVehicleEF	HHD	8.4640e-003	8.4790e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	3.0000e-006	5.3000e-005
tblVehicleEF	HHD	1.6400e-004	1.5000e-005
tblVehicleEF	HHD	0.36	0.28
tblVehicleEF	HHD	2.0000e-006	5.3000e-005
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	8.7000e-005	1.3400e-004
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	7.4340e-003	5.8090e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	3.0000e-006	5.3000e-005
tblVehicleEF	HHD	1.6400e-004	1.5000e-005

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tblVehicleEF	HHD	0.41	0.47
tblVehicleEF	HHD	2.0000e-006	5.3000e-005
tblVehicleEF	HHD	0.08	0.07
tblVehicleEF	HHD	8.7000e-005	1.3400e-004
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	LDA	1.2000e-003	1.4860e-003
tblVehicleEF	LDA	0.03	0.05
tblVehicleEF	LDA	0.44	0.54
tblVehicleEF	LDA	1.80	2.36
tblVehicleEF	LDA	207.56	223.71
tblVehicleEF	LDA	43.11	58.17
tblVehicleEF	LDA	3.5250e-003	3.5720e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.13	0.20
tblVehicleEF	LDA	0.04	8.2560e-003
tblVehicleEF	LDA	1.0620e-003	9.3000e-004
tblVehicleEF	LDA	1.3450e-003	1.5720e-003
tblVehicleEF	LDA	0.02	2.8900e-003
tblVehicleEF	LDA	9.7700e-004	8.5600e-004
tblVehicleEF	LDA	1.2370e-003	1.4450e-003
tblVehicleEF	LDA	0.03	0.27
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.02	0.27
tblVehicleEF	LDA	4.2500e-003	5.3610e-003
tblVehicleEF	LDA	0.02	0.20
tblVehicleEF	LDA	0.13	0.23
tblVehicleEF	LDA	2.0530e-003	2.2110e-003
tblVehicleEF	LDA	4.2700e-004	5.7500e-004

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tblVehicleEF	LDA	0.03	0.27
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.02	0.27
tblVehicleEF	LDA	6.1670e-003	7.8090e-003
tblVehicleEF	LDA	0.02	0.20
tblVehicleEF	LDA	0.15	0.25
tblVehicleEF	LDT1	2.6560e-003	5.0380e-003
tblVehicleEF	LDT1	0.05	0.10
tblVehicleEF	LDT1	0.68	1.23
tblVehicleEF	LDT1	1.99	4.98
tblVehicleEF	LDT1	254.02	305.46
tblVehicleEF	LDT1	54.09	82.23
tblVehicleEF	LDT1	4.8290e-003	8.0630e-003
tblVehicleEF	LDT1	0.02	0.04
tblVehicleEF	LDT1	0.05	0.10
tblVehicleEF	LDT1	0.19	0.36
tblVehicleEF	LDT1	0.04	0.01
tblVehicleEF	LDT1	1.2820e-003	1.6080e-003
tblVehicleEF	LDT1	1.6790e-003	2.6360e-003
tblVehicleEF	LDT1	0.02	3.7400e-003
tblVehicleEF	LDT1	1.1790e-003	1.4790e-003
tblVehicleEF	LDT1	1.5440e-003	2.4240e-003
tblVehicleEF	LDT1	0.07	0.71
tblVehicleEF	LDT1	0.16	0.18
tblVehicleEF	LDT1	0.06	0.71
tblVehicleEF	LDT1	0.01	0.02
tblVehicleEF	LDT1	0.09	0.54
tblVehicleEF	LDT1	0.22	0.50
tblVehicleEF	LDT1	2.5140e-003	3.0200e-003

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tblVehicleEF	LDT1	5.3500e-004	8.1300e-004
tblVehicleEF	LDT1	0.07	0.71
tblVehicleEF	LDT1	0.16	0.18
tblVehicleEF	LDT1	0.06	0.71
tblVehicleEF	LDT1	0.02	0.03
tblVehicleEF	LDT1	0.09	0.54
tblVehicleEF	LDT1	0.24	0.55
tblVehicleEF	LDT2	2.1940e-003	2.1910e-003
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.61	0.71
tblVehicleEF	LDT2	2.40	3.13
tblVehicleEF	LDT2	260.16	307.92
tblVehicleEF	LDT2	55.69	79.30
tblVehicleEF	LDT2	4.6490e-003	5.0580e-003
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.04	0.05
tblVehicleEF	LDT2	0.19	0.28
tblVehicleEF	LDT2	0.04	0.01
tblVehicleEF	LDT2	1.1500e-003	1.0890e-003
tblVehicleEF	LDT2	1.4250e-003	1.7720e-003
tblVehicleEF	LDT2	0.02	3.5570e-003
tblVehicleEF	LDT2	1.0590e-003	1.0020e-003
tblVehicleEF	LDT2	1.3100e-003	1.6290e-003
tblVehicleEF	LDT2	0.06	0.31
tblVehicleEF	LDT2	0.12	0.08
tblVehicleEF	LDT2	0.05	0.31
tblVehicleEF	LDT2	8.6940e-003	8.3290e-003
tblVehicleEF	LDT2	0.07	0.23
tblVehicleEF	LDT2	0.22	0.31

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tblVehicleEF	LDT2	2.5730e-003	3.0440e-003
tblVehicleEF	LDT2	5.5100e-004	7.8400e-004
tblVehicleEF	LDT2	0.06	0.31
tblVehicleEF	LDT2	0.12	0.08
tblVehicleEF	LDT2	0.05	0.31
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.07	0.23
tblVehicleEF	LDT2	0.24	0.34
tblVehicleEF	LHD1	3.7420e-003	4.0020e-003
tblVehicleEF	LHD1	7.9950e-003	7.5020e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.16	0.17
tblVehicleEF	LHD1	0.79	0.78
tblVehicleEF	LHD1	0.86	1.72
tblVehicleEF	LHD1	9.02	8.78
tblVehicleEF	LHD1	706.55	705.59
tblVehicleEF	LHD1	8.92	13.80
tblVehicleEF	LHD1	9.1700e-004	8.2600e-004
tblVehicleEF	LHD1	0.05	0.05
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.95	0.87
tblVehicleEF	LHD1	0.22	0.32
tblVehicleEF	LHD1	1.1020e-003	9.4800e-004
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	0.01	9.8070e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	2.2300e-004	1.7500e-004
tblVehicleEF	LHD1	1.0540e-003	9.0700e-004

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tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.5420e-003	2.4520e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	2.0500e-004	1.6100e-004
tblVehicleEF	LHD1	1.8450e-003	0.11
tblVehicleEF	LHD1	0.09	0.03
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	9.4800e-004	0.11
tblVehicleEF	LHD1	0.11	0.10
tblVehicleEF	LHD1	0.36	0.16
tblVehicleEF	LHD1	0.05	0.08
tblVehicleEF	LHD1	8.7000e-005	8.5000e-005
tblVehicleEF	LHD1	6.8670e-003	6.8570e-003
tblVehicleEF	LHD1	8.8000e-005	1.3600e-004
tblVehicleEF	LHD1	1.8450e-003	0.11
tblVehicleEF	LHD1	0.09	0.03
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	9.4800e-004	0.11
tblVehicleEF	LHD1	0.13	0.12
tblVehicleEF	LHD1	0.36	0.16
tblVehicleEF	LHD1	0.06	0.09
tblVehicleEF	LHD2	2.5350e-003	2.5990e-003
tblVehicleEF	LHD2	6.3230e-003	6.0210e-003
tblVehicleEF	LHD2	5.7120e-003	9.2620e-003
tblVehicleEF	LHD2	0.13	0.13
tblVehicleEF	LHD2	0.63	0.50
tblVehicleEF	LHD2	0.46	0.99
tblVehicleEF	LHD2	14.12	14.23
tblVehicleEF	LHD2	710.65	775.46

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tblVehicleEF	LHD2	6.14	7.99
tblVehicleEF	LHD2	1.8570e-003	1.8460e-003
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.10	0.11
tblVehicleEF	LHD2	0.86	0.89
tblVehicleEF	LHD2	0.14	0.19
tblVehicleEF	LHD2	1.5620e-003	1.5200e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.03
tblVehicleEF	LHD2	9.2000e-005	5.5000e-005
tblVehicleEF	LHD2	1.4950e-003	1.4550e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.7310e-003	2.6810e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	8.5000e-005	5.1000e-005
tblVehicleEF	LHD2	7.2900e-004	0.05
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	4.3600e-004	0.05
tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	0.08	0.07
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	1.3500e-004	1.3600e-004
tblVehicleEF	LHD2	6.8450e-003	7.4530e-003
tblVehicleEF	LHD2	6.1000e-005	7.9000e-005
tblVehicleEF	LHD2	7.2900e-004	0.05
tblVehicleEF	LHD2	0.03	0.01

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tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.3600e-004	0.05
tblVehicleEF	LHD2	0.13	0.13
tblVehicleEF	LHD2	0.08	0.07
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	MCY	0.35	0.17
tblVehicleEF	MCY	0.26	0.19
tblVehicleEF	MCY	19.65	13.63
tblVehicleEF	MCY	9.37	8.60
tblVehicleEF	MCY	216.84	188.90
tblVehicleEF	MCY	61.60	50.69
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	8.3200e-003
tblVehicleEF	MCY	1.18	0.60
tblVehicleEF	MCY	0.27	0.14
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	2.2560e-003	2.0090e-003
tblVehicleEF	MCY	2.8450e-003	3.3550e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	2.1060e-003	1.8780e-003
tblVehicleEF	MCY	2.6700e-003	3.1500e-003
tblVehicleEF	MCY	0.88	4.99
tblVehicleEF	MCY	0.79	3.56
tblVehicleEF	MCY	0.45	4.99
tblVehicleEF	MCY	2.37	1.14
tblVehicleEF	MCY	0.60	3.99
tblVehicleEF	MCY	2.00	1.45
tblVehicleEF	MCY	2.1460e-003	1.8670e-003
tblVehicleEF	MCY	6.1000e-004	5.0100e-004

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tblVehicleEF	MCY	0.88	0.13
tblVehicleEF	MCY	0.79	3.56
tblVehicleEF	MCY	0.45	0.13
tblVehicleEF	MCY	2.95	1.37
tblVehicleEF	MCY	0.60	3.99
tblVehicleEF	MCY	2.17	1.58
tblVehicleEF	MDV	2.3680e-003	2.6230e-003
tblVehicleEF	MDV	0.05	0.08
tblVehicleEF	MDV	0.62	0.77
tblVehicleEF	MDV	2.55	3.42
tblVehicleEF	MDV	318.76	372.69
tblVehicleEF	MDV	67.66	95.79
tblVehicleEF	MDV	6.1680e-003	6.5790e-003
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.23	0.34
tblVehicleEF	MDV	0.04	0.01
tblVehicleEF	MDV	1.1690e-003	1.1420e-003
tblVehicleEF	MDV	1.4710e-003	1.8440e-003
tblVehicleEF	MDV	0.02	3.6150e-003
tblVehicleEF	MDV	1.0780e-003	1.0530e-003
tblVehicleEF	MDV	1.3520e-003	1.6960e-003
tblVehicleEF	MDV	0.07	0.40
tblVehicleEF	MDV	0.15	0.10
tblVehicleEF	MDV	0.07	0.40
tblVehicleEF	MDV	9.6960e-003	0.01
tblVehicleEF	MDV	0.08	0.30
tblVehicleEF	MDV	0.26	0.40
tblVehicleEF	MDV	3.1500e-003	3.6820e-003

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tblVehicleEF	MDV	6.7000e-004	9.4700e-004
tblVehicleEF	MDV	0.07	0.40
tblVehicleEF	MDV	0.15	0.10
tblVehicleEF	MDV	0.07	0.40
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.08	0.30
tblVehicleEF	MDV	0.29	0.43
tblVehicleEF	MH	6.5260e-003	7.6380e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.46	0.52
tblVehicleEF	MH	1.64	1.85
tblVehicleEF	MH	1,387.36	1,603.71
tblVehicleEF	MH	15.21	18.39
tblVehicleEF	MH	0.06	0.08
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.56	1.83
tblVehicleEF	MH	0.24	0.30
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.03	0.04
tblVehicleEF	MH	1.9100e-004	2.0800e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.3360e-003	3.3960e-003
tblVehicleEF	MH	0.03	0.04
tblVehicleEF	MH	1.7600e-004	1.9100e-004
tblVehicleEF	MH	0.45	25.26
tblVehicleEF	MH	0.04	6.00
tblVehicleEF	MH	0.18	25.26
tblVehicleEF	MH	0.06	0.07

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tblVehicleEF	MH	9.4360e-003	0.15
tblVehicleEF	MH	0.08	0.09
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.5100e-004	1.8200e-004
tblVehicleEF	MH	0.45	25.26
tblVehicleEF	MH	0.04	6.00
tblVehicleEF	MH	0.18	25.26
tblVehicleEF	MH	0.07	0.09
tblVehicleEF	MH	9.4360e-003	0.15
tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MHD	2.2510e-003	0.01
tblVehicleEF	MHD	9.3200e-004	7.5480e-003
tblVehicleEF	MHD	5.1670e-003	5.6670e-003
tblVehicleEF	MHD	0.33	0.63
tblVehicleEF	MHD	0.15	0.15
tblVehicleEF	MHD	0.58	0.64
tblVehicleEF	MHD	63.79	151.67
tblVehicleEF	MHD	948.94	1,064.95
tblVehicleEF	MHD	5.12	5.75
tblVehicleEF	MHD	9.5220e-003	0.02
tblVehicleEF	MHD	0.13	0.14
tblVehicleEF	MHD	4.3630e-003	3.9190e-003
tblVehicleEF	MHD	0.34	0.77
tblVehicleEF	MHD	1.53	0.62
tblVehicleEF	MHD	1.88	1.32
tblVehicleEF	MHD	1.5400e-004	6.5200e-004
tblVehicleEF	MHD	0.13	0.04
tblVehicleEF	MHD	7.6150e-003	5.5090e-003
tblVehicleEF	MHD	6.5000e-005	7.0000e-005

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tblVehicleEF	MHD	1.4700e-004	6.2300e-004
tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	7.2820e-003	5.2650e-003
tblVehicleEF	MHD	6.0000e-005	6.4000e-005
tblVehicleEF	MHD	2.1800e-004	0.02
tblVehicleEF	MHD	0.01	3.5590e-003
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	1.2500e-004	0.02
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.03	0.03
tblVehicleEF	MHD	6.0400e-004	1.4070e-003
tblVehicleEF	MHD	9.0150e-003	0.01
tblVehicleEF	MHD	5.1000e-005	5.7000e-005
tblVehicleEF	MHD	2.1800e-004	0.02
tblVehicleEF	MHD	0.01	3.5590e-003
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	1.2500e-004	0.02
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.03	0.03
tblVehicleEF	OBUS	6.8350e-003	7.8960e-003
tblVehicleEF	OBUS	2.7460e-003	0.01
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.72	0.67
tblVehicleEF	OBUS	0.35	0.49
tblVehicleEF	OBUS	1.76	2.16
tblVehicleEF	OBUS	110.91	102.09
tblVehicleEF	OBUS	1,190.08	1,369.24

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tblVehicleEF	OBUS	13.53	16.41
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.13	0.15
tblVehicleEF	OBUS	0.01	0.02
tblVehicleEF	OBUS	0.50	0.37
tblVehicleEF	OBUS	1.54	1.03
tblVehicleEF	OBUS	1.21	0.88
tblVehicleEF	OBUS	1.6700e-004	3.9200e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	8.4550e-003	0.02
tblVehicleEF	OBUS	1.6400e-004	1.8800e-004
tblVehicleEF	OBUS	1.6000e-004	3.7500e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	8.0770e-003	0.02
tblVehicleEF	OBUS	1.5100e-004	1.7300e-004
tblVehicleEF	OBUS	1.3560e-003	0.10
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.05
tblVehicleEF	OBUS	6.0100e-004	0.10
tblVehicleEF	OBUS	0.02	0.05
tblVehicleEF	OBUS	0.07	0.11
tblVehicleEF	OBUS	0.08	0.11
tblVehicleEF	OBUS	1.0520e-003	9.6700e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.3400e-004	1.6200e-004
tblVehicleEF	OBUS	1.3560e-003	0.10
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.07	0.07
tblVehicleEF	OBUS	6.0100e-004	0.10

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tblVehicleEF	OBUS	0.03	0.07
tblVehicleEF	OBUS	0.07	0.11
tblVehicleEF	OBUS	0.09	0.12
tblVehicleEF	SBUS	0.04	0.09
tblVehicleEF	SBUS	3.7660e-003	0.18
tblVehicleEF	SBUS	3.2710e-003	2.6840e-003
tblVehicleEF	SBUS	1.84	1.19
tblVehicleEF	SBUS	0.30	0.82
tblVehicleEF	SBUS	0.46	0.35
tblVehicleEF	SBUS	325.82	172.93
tblVehicleEF	SBUS	1,016.49	1,011.56
tblVehicleEF	SBUS	2.64	2.14
tblVehicleEF	SBUS	0.05	0.02
tblVehicleEF	SBUS	0.14	0.13
tblVehicleEF	SBUS	3.4900e-003	3.0390e-003
tblVehicleEF	SBUS	2.68	1.13
tblVehicleEF	SBUS	3.29	1.75
tblVehicleEF	SBUS	1.25	0.47
tblVehicleEF	SBUS	1.8010e-003	7.4900e-004
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	3.6000e-005	2.4000e-005
tblVehicleEF	SBUS	1.7230e-003	7.1400e-004
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.7960e-003	2.7360e-003
tblVehicleEF	SBUS	0.02	9.8800e-003
tblVehicleEF	SBUS	3.3000e-005	2.2000e-005
tblVehicleEF	SBUS	4.1400e-004	0.02

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tblVehicleEF	SBUS	4.2990e-003	5.6150e-003
tblVehicleEF	SBUS	0.18	0.11
tblVehicleEF	SBUS	2.0100e-004	0.02
tblVehicleEF	SBUS	0.06	0.04
tblVehicleEF	SBUS	9.3040e-003	0.02
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	3.0940e-003	1.4800e-003
tblVehicleEF	SBUS	9.6770e-003	9.0480e-003
tblVehicleEF	SBUS	2.6000e-005	2.1000e-005
tblVehicleEF	SBUS	4.1400e-004	0.02
tblVehicleEF	SBUS	4.2990e-003	5.6150e-003
tblVehicleEF	SBUS	0.25	0.23
tblVehicleEF	SBUS	2.0100e-004	0.02
tblVehicleEF	SBUS	0.07	0.23
tblVehicleEF	SBUS	9.3040e-003	0.02
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	UBUS	1.71	0.64
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	12.99	7.76
tblVehicleEF	UBUS	0.84	2.45
tblVehicleEF	UBUS	1,646.36	1,027.95
tblVehicleEF	UBUS	7.79	19.10
tblVehicleEF	UBUS	0.27	0.13
tblVehicleEF	UBUS	6.8450e-003	0.02
tblVehicleEF	UBUS	0.67	0.20
tblVehicleEF	UBUS	0.08	0.17
tblVehicleEF	UBUS	0.08	0.13
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	4.8850e-003	3.3910e-003

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tblVehicleEF	UBUS	8.8000e-005	1.2900e-004
tblVehicleEF	UBUS	0.03	0.05
tblVehicleEF	UBUS	7.7720e-003	0.01
tblVehicleEF	UBUS	4.6670e-003	3.2310e-003
tblVehicleEF	UBUS	8.1000e-005	1.1900e-004
tblVehicleEF	UBUS	2.4900e-004	0.03
tblVehicleEF	UBUS	3.6220e-003	9.4370e-003
tblVehicleEF	UBUS	1.4800e-004	0.03
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	8.6800e-004	0.03
tblVehicleEF	UBUS	0.05	0.08
tblVehicleEF	UBUS	0.01	7.6070e-003
tblVehicleEF	UBUS	7.7000e-005	1.8900e-004
tblVehicleEF	UBUS	2.4900e-004	0.03
tblVehicleEF	UBUS	3.6220e-003	9.4370e-003
tblVehicleEF	UBUS	1.4800e-004	0.03
tblVehicleEF	UBUS	1.75	0.69
tblVehicleEF	UBUS	8.6800e-004	0.03
tblVehicleEF	UBUS	0.05	0.09
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	ST_TR	1.74	1.51
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	SU_TR	1.74	1.51
tblVehicleTrips	WD_TR	9.74	0.00
tblVehicleTrips	WD_TR	1.74	1.51
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00

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tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
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
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	0.96	0.00
tblWoodstoves	NumberNoncatalytic	0.96	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3473	4.1100e-003	0.3571	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.6000e-004	0.0000	0.5994
Energy	2.9700e-003	0.0258	0.0140	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	49.5115	49.5115	6.0900e-003	1.2100e-003	50.0243
Mobile	0.1686	0.1625	0.9074	2.7900e-003	0.2532	2.3700e-003	0.2556	0.0635	2.2300e-003	0.0657	0.0000	260.2619	260.2619	0.0104	0.0152	265.0429
Waste						0.0000	0.0000		0.0000	0.0000	12.0942	0.0000	12.0942	0.7148	0.0000	29.9629
Water						0.0000	0.0000		0.0000	0.0000	4.3539	4.0181	8.3720	0.0161	9.6000e-003	11.6358

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Total	**0.5188**	**0.1925**	**1.2785**	**2.9700e-003**	**0.2532**	**6.4000e-003**	**0.2596**	**0.0635**	**6.2600e-003**	**0.0697**	**16.4481**	**314.3768**	**330.8250**	**0.7479**	**0.0260**	**357.2652**

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	0.3473	4.1100e-003	0.3571	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.6000e-004	0.0000	0.5994
Energy	2.9700e-003	0.0258	0.0140	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	49.5115	49.5115	6.0900e-003	1.2100e-003	50.0243
Mobile	0.1686	0.1625	0.9074	2.7900e-003	0.2532	2.3700e-003	0.2556	0.0635	2.2300e-003	0.0657	0.0000	260.2619	260.2619	0.0104	0.0152	265.0429
Waste						0.0000	0.0000		0.0000	0.0000	12.0942	0.0000	12.0942	0.7148	0.0000	29.9629
Water						0.0000	0.0000		0.0000	0.0000	4.3539	4.0181	8.3720	0.0161	9.6000e-003	11.6358
Total	**0.5188**	**0.1925**	**1.2785**	**2.9700e-003**	**0.2532**	**6.4000e-003**	**0.2596**	**0.0635**	**6.2600e-003**	**0.0697**	**16.4481**	**314.3768**	**330.8250**	**0.7479**	**0.0260**	**357.2652**

	ROG	NOx	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

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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					
Mitigated	0.1686	0.1625	0.9074	2.7900e-003	0.2532	2.3700e-003	0.2556	0.0635	2.2300e-003	0.0657	0.0000	260.2619	260.2619	0.0104	0.0152	265.0429
Unmitigated	0.1686	0.1625	0.9074	2.7900e-003	0.2532	2.3700e-003	0.2556	0.0635	2.2300e-003	0.0657	0.0000	260.2619	260.2619	0.0104	0.0152	265.0429

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	261.12	235.68	196.32	573,311	573,311
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	58.89	58.89	58.89	171,930	171,930
Total	320.01	294.57	255.21	745,241	745,241

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
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rai	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.518249	0.034481	0.214924	0.132556	0.038169	0.010517	0.021562	0.021147	0.001476	0.001107	0.003805	0.001094	0.000914
General Office Building	0.518249	0.034481	0.214924	0.132556	0.038169	0.010517	0.021562	0.021147	0.001476	0.001107	0.003805	0.001094	0.000914
Parking Lot	0.518249	0.034481	0.214924	0.132556	0.038169	0.010517	0.021562	0.021147	0.001476	0.001107	0.003805	0.001094	0.000914
Unrefrigerated Warehouse-No Rail	0.518249	0.034481	0.214924	0.132556	0.038169	0.010517	0.021562	0.021147	0.001476	0.001107	0.003805	0.001094	0.000914

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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	20.1040	20.1040	5.5300e-003	6.7000e-004	20.4419
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	20.1040	20.1040	5.5300e-003	6.7000e-004	20.4419
NaturalGas Mitigated	2.9700e-003	0.0258	0.0140	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	29.4076	29.4076	5.6000e-004	5.4000e-004	29.5823
NaturalGas Unmitigated	2.9700e-003	0.0258	0.0140	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	29.4076	29.4076	5.6000e-004	5.4000e-004	29.5823

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	402321	2.1700e-003	0.0185	7.8900e-003	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003	0.0000	21.4694	21.4694	4.1000e-004	3.9000e-004	21.5969

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General Office Building	14596.2	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7789	0.7789	1.0000e-005	1.0000e-005	0.7835
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	134160	7.2000e-004	6.5800e-003	5.5200e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1593	7.1593	1.4000e-004	1.3000e-004	7.2018
Total		**2.9700e-003**	**0.0258**	**0.0140**	**1.6000e-004**		**2.0500e-003**	**2.0500e-003**		**2.0500e-003**	**2.0500e-003**	**0.0000**	**29.4076**	**29.4076**	**5.6000e-004**	**5.3000e-004**	**29.5823**

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	402321	2.1700e-003	0.0185	7.8900e-003	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003	0.0000	21.4694	21.4694	4.1000e-004	3.9000e-004	21.5969
General Office Building	14596.2	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7789	0.7789	1.0000e-005	1.0000e-005	0.7835
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	134160	7.2000e-004	6.5800e-003	5.5200e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1593	7.1593	1.4000e-004	1.3000e-004	7.2018
Total		**2.9700e-003**	**0.0258**	**0.0140**	**1.6000e-004**		**2.0500e-003**	**2.0500e-003**		**2.0500e-003**	**2.0500e-003**	**0.0000**	**29.4076**	**29.4076**	**5.6000e-004**	**5.3000e-004**	**29.5823**

5.3 Energy by Land Use - Electricity

Unmitigated

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	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	185589	10.1001	2.7800e-003	3.4000e-004	10.2699
General Office Building	15470.2	0.8419	2.3000e-004	3.0000e-005	0.8561
Parking Lot	31850	1.7333	4.8000e-004	6.0000e-005	1.7625
Unrefrigerated Warehouse-No	136500	7.4286	2.0400e-003	2.5000e-004	7.5535
Total		**20.1040**	**5.5300e-003**	**6.8000e-004**	**20.4419**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	185589	10.1001	2.7800e-003	3.4000e-004	10.2699
General Office Building	15470.2	0.8419	2.3000e-004	3.0000e-005	0.8561
Parking Lot	31850	1.7333	4.8000e-004	6.0000e-005	1.7625
Unrefrigerated Warehouse-No	136500	7.4286	2.0400e-003	2.5000e-004	7.5535
Total		**20.1040**	**5.5300e-003**	**6.8000e-004**	**20.4419**

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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	0.3473	4.1100e-003	0.3571	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.6000e-004	0.0000	0.5994
Unmitigated	0.3473	4.1100e-003	0.3571	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.6000e-004	0.0000	0.5994

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	0.0459					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2906					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	0.0108	4.1100e-003	0.3571	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.6000e-004	0.0000	0.5994

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Total	**0.3473**	**4.1100e-003**	**0.3571**	**2.0000e-005**		**1.9800e-003**	**1.9800e-003**		**1.9800e-003**	**1.9800e-003**	**0.0000**	**0.5853**	**0.5853**	**5.6000e-004**	**0.0000**	**0.5994**

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	0.0459					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2906					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	0.0108	4.1100e-003	0.3571	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.6000e-004	0.0000	0.5994
Total	**0.3473**	**4.1100e-003**	**0.3571**	**2.0000e-005**		**1.9800e-003**	**1.9800e-003**		**1.9800e-003**	**1.9800e-003**	**0.0000**	**0.5853**	**0.5853**	**5.6000e-004**	**0.0000**	**0.5994**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e

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Category	MT/yr			
Mitigated	8.3720	0.0161	9.6000e-003	11.6358
Unmitigated	8.3720	0.0161	9.6000e-003	11.6358

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.12739 / 1.97162	2.4030	4.1600e-003	2.4500e-003	3.2370
General Office Building	0.15996 / 0.0980402	0.1224	2.1000e-004	1.3000e-004	0.1650
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	9.01875 / 0	5.8467	0.0117	7.0300e-003	8.2337
Total		**8.3720**	**0.0161**	**9.6100e-003**	**11.6358**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

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Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.12739 / 1.97162	2.4030	4.1600e-003	2.4500e-003	3.2370
General Office Building	0.15996 / 0.0980402	0.1224	2.1000e-004	1.3000e-004	0.1650
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	9.01875 / 0	5.8467	0.0117	7.0300e-003	8.2337
Total		**8.3720**	**0.0161**	**9.6100e-003**	**11.6358**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.0942	0.7148	0.0000	29.9629
Unmitigated	12.0942	0.7148	0.0000	29.9629

8.2 Waste by Land Use

Unmitigated

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	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	22.08	4.4820	0.2649	0.0000	11.1041
General Office Building	0.84	0.1705	0.0101	0.0000	0.4224
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	36.66	7.4417	0.4398	0.0000	18.4364
Total		**12.0942**	**0.7148**	**0.0000**	**29.9629**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	22.08	4.4820	0.2649	0.0000	11.1041
General Office Building	0.84	0.1705	0.0101	0.0000	0.4224
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	36.66	7.4417	0.4398	0.0000	18.4364
Total		**12.0942**	**0.7148**	**0.0000**	**29.9629**

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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	0.90	1000sqft	0.00	901.00	0
Unrefrigerated Warehouse-No Rail	39.00	1000sqft	0.00	39,000.00	0
Parking Lot	136.00	Space	0.00	91,000.00	0
Apartments Mid Rise	48.00	Dwelling Unit	4.51	33,000.00	137

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2035
Utility Company	Sonoma Clean Power				
CO2 Intensity (lb/MWhr)	119.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Self-storage = unrefrigerated warehouse-no rail. Unit amounts, acreage, and square footage provided by applicant.

Construction Phase - CalEEMod defaults assumed. No information provided by applicant.

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

Off-road Equipment - CalEEMod defaults assumed for construction equipment

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Off-road Equipment - Assumed 1 piece of equipment each for trenching.

Trips and VMT - All trips entered into EMFAC2021

Vehicle Trips - Trip rates updated from information provided by applicant. Apartments mid rise trips are office + apartments, then 0 for office.

Vehicle Emission Factors - Emission Factors updated from EMFAC2021 for Sonoma County in 2035

Woodstoves - No woodstoves or fireplaces

Water And Wastewater - 100% aerobic

Construction Off-road Equipment Mitigation - All equipment t4i

Fleet Mix - Fleet Mix updated from EMFAC2021 for Sonoma County in 2035

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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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

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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
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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
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	7.20	0.00
tblFireplaces	NumberNoFireplace	1.92	0.00
tblFireplaces	NumberWood	8.16	0.00
tblFleetMix	HHD	6.4810e-003	0.02
tblFleetMix	HHD	6.4810e-003	0.02
tblFleetMix	HHD	6.4810e-003	0.02
tblFleetMix	HHD	6.4810e-003	0.02
tblFleetMix	LDA	0.60	0.53
tblFleetMix	LDA	0.60	0.53
tblFleetMix	LDA	0.60	0.53
tblFleetMix	LDA	0.60	0.53
tblFleetMix	LDT1	0.05	0.03
tblFleetMix	LDT1	0.05	0.03
tblFleetMix	LDT1	0.05	0.03
tblFleetMix	LDT1	0.05	0.03
tblFleetMix	LDT2	0.16	0.21
tblFleetMix	LDT2	0.16	0.21
tblFleetMix	LDT2	0.16	0.21

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tblFleetMix	LDT2	0.16	0.21
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD2	6.6240e-003	9.1000e-003
tblFleetMix	LHD2	6.6240e-003	9.1000e-003
tblFleetMix	LHD2	6.6240e-003	9.1000e-003
tblFleetMix	LHD2	6.6240e-003	9.1000e-003
tblFleetMix	MCY	0.03	3.5170e-003
tblFleetMix	MCY	0.03	3.5170e-003
tblFleetMix	MCY	0.03	3.5170e-003
tblFleetMix	MCY	0.03	3.5170e-003
tblFleetMix	MDV	0.11	0.13
tblFleetMix	MDV	0.11	0.13
tblFleetMix	MDV	0.11	0.13
tblFleetMix	MDV	0.11	0.13
tblFleetMix	MH	2.7940e-003	7.5700e-004
tblFleetMix	MH	2.7940e-003	7.5700e-004
tblFleetMix	MH	2.7940e-003	7.5700e-004
tblFleetMix	MH	2.7940e-003	7.5700e-004
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tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.0430e-003	1.3990e-003
tblFleetMix	OBUS	1.0430e-003	1.3990e-003
tblFleetMix	OBUS	1.0430e-003	1.3990e-003
tblFleetMix	OBUS	1.0430e-003	1.3990e-003

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tblFleetMix	SBUS	1.3560e-003	1.1090e-003
tblFleetMix	SBUS	1.3560e-003	1.1090e-003
tblFleetMix	SBUS	1.3560e-003	1.1090e-003
tblFleetMix	SBUS	1.3560e-003	1.1090e-003
tblFleetMix	UBUS	2.5700e-004	1.1260e-003
tblFleetMix	UBUS	2.5700e-004	1.1260e-003
tblFleetMix	UBUS	2.5700e-004	1.1260e-003
tblFleetMix	UBUS	2.5700e-004	1.1260e-003
tblLandUse	LandUseSquareFeet	900.00	901.00
tblLandUse	LandUseSquareFeet	54,400.00	91,000.00
tblLandUse	LandUseSquareFeet	48,000.00	33,000.00
tblLandUse	LotAcreage	0.02	0.00
tblLandUse	LotAcreage	0.90	0.00
tblLandUse	LotAcreage	1.22	0.00
tblLandUse	LotAcreage	1.26	4.51
tblTripsAndVMT	VendorTripNumber	27.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	89.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblVehicleEF	HHD	0.02	0.13
tblVehicleEF	HHD	0.05	0.03
tblVehicleEF	HHD	5.36	4.24
tblVehicleEF	HHD	0.45	0.42
tblVehicleEF	HHD	8.0200e-003	9.5300e-004
tblVehicleEF	HHD	743.32	590.55

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tblVehicleEF	HHD	1,182.18	1,242.05
tblVehicleEF	HHD	0.07	8.4460e-003
tblVehicleEF	HHD	0.12	0.10
tblVehicleEF	HHD	0.19	0.20
tblVehicleEF	HHD	4.45	3.27
tblVehicleEF	HHD	2.47	1.31
tblVehicleEF	HHD	2.89	2.37
tblVehicleEF	HHD	1.8120e-003	1.4920e-003
tblVehicleEF	HHD	0.06	0.08
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	1.7340e-003	1.4220e-003
tblVehicleEF	HHD	0.02	0.03
tblVehicleEF	HHD	8.4500e-003	8.4850e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	3.0000e-006	1.2000e-005
tblVehicleEF	HHD	1.3100e-004	3.0000e-006
tblVehicleEF	HHD	0.36	0.27
tblVehicleEF	HHD	2.0000e-006	1.2000e-005
tblVehicleEF	HHD	0.02	0.01
tblVehicleEF	HHD	7.1000e-005	2.5000e-005
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	6.8930e-003	5.1290e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	3.0000e-006	1.2000e-005
tblVehicleEF	HHD	1.3100e-004	3.0000e-006

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tblVehicleEF	HHD	0.41	0.42
tblVehicleEF	HHD	2.0000e-006	1.2000e-005
tblVehicleEF	HHD	0.08	0.05
tblVehicleEF	HHD	7.1000e-005	2.5000e-005
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	LDA	8.5000e-004	1.1400e-003
tblVehicleEF	LDA	0.02	0.04
tblVehicleEF	LDA	0.39	0.47
tblVehicleEF	LDA	1.60	1.92
tblVehicleEF	LDA	191.46	209.32
tblVehicleEF	LDA	39.33	53.61
tblVehicleEF	LDA	3.2550e-003	3.1360e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.12	0.17
tblVehicleEF	LDA	0.04	8.2340e-003
tblVehicleEF	LDA	7.6900e-004	6.7400e-004
tblVehicleEF	LDA	1.0020e-003	1.1700e-003
tblVehicleEF	LDA	0.02	2.8820e-003
tblVehicleEF	LDA	7.0800e-004	6.2000e-004
tblVehicleEF	LDA	9.2200e-004	1.0760e-003
tblVehicleEF	LDA	0.02	0.24
tblVehicleEF	LDA	0.06	0.05
tblVehicleEF	LDA	0.02	0.24
tblVehicleEF	LDA	2.7690e-003	3.7940e-003
tblVehicleEF	LDA	0.02	0.18
tblVehicleEF	LDA	0.10	0.17
tblVehicleEF	LDA	1.8940e-003	2.0690e-003
tblVehicleEF	LDA	3.8900e-004	5.3000e-004

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tblVehicleEF	LDA	0.02	0.24
tblVehicleEF	LDA	0.06	0.05
tblVehicleEF	LDA	0.02	0.24
tblVehicleEF	LDA	4.0160e-003	5.5310e-003
tblVehicleEF	LDA	0.02	0.18
tblVehicleEF	LDA	0.11	0.19
tblVehicleEF	LDT1	1.3790e-003	2.8690e-003
tblVehicleEF	LDT1	0.03	0.07
tblVehicleEF	LDT1	0.48	0.83
tblVehicleEF	LDT1	1.75	3.35
tblVehicleEF	LDT1	231.72	283.50
tblVehicleEF	LDT1	48.66	74.14
tblVehicleEF	LDT1	3.5630e-003	5.3840e-003
tblVehicleEF	LDT1	0.02	0.03
tblVehicleEF	LDT1	0.03	0.06
tblVehicleEF	LDT1	0.15	0.28
tblVehicleEF	LDT1	0.04	0.01
tblVehicleEF	LDT1	8.6400e-004	1.0630e-003
tblVehicleEF	LDT1	1.1670e-003	1.8430e-003
tblVehicleEF	LDT1	0.02	3.6940e-003
tblVehicleEF	LDT1	7.9400e-004	9.7700e-004
tblVehicleEF	LDT1	1.0730e-003	1.6950e-003
tblVehicleEF	LDT1	0.04	0.61
tblVehicleEF	LDT1	0.10	0.13
tblVehicleEF	LDT1	0.04	0.61
tblVehicleEF	LDT1	5.1630e-003	0.01
tblVehicleEF	LDT1	0.06	0.45
tblVehicleEF	LDT1	0.14	0.34
tblVehicleEF	LDT1	2.2930e-003	2.8030e-003

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tblVehicleEF	LDT1	4.8100e-004	7.3300e-004
tblVehicleEF	LDT1	0.04	0.61
tblVehicleEF	LDT1	0.10	0.13
tblVehicleEF	LDT1	0.04	0.61
tblVehicleEF	LDT1	7.5330e-003	0.02
tblVehicleEF	LDT1	0.06	0.45
tblVehicleEF	LDT1	0.15	0.37
tblVehicleEF	LDT2	1.4430e-003	1.7000e-003
tblVehicleEF	LDT2	0.04	0.05
tblVehicleEF	LDT2	0.51	0.62
tblVehicleEF	LDT2	2.15	2.60
tblVehicleEF	LDT2	233.29	289.39
tblVehicleEF	LDT2	49.22	73.49
tblVehicleEF	LDT2	3.7920e-003	4.2310e-003
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.03	0.04
tblVehicleEF	LDT2	0.15	0.24
tblVehicleEF	LDT2	0.04	0.01
tblVehicleEF	LDT2	8.4100e-004	7.9700e-004
tblVehicleEF	LDT2	1.0550e-003	1.3230e-003
tblVehicleEF	LDT2	0.02	3.5570e-003
tblVehicleEF	LDT2	7.7500e-004	7.3300e-004
tblVehicleEF	LDT2	9.7000e-004	1.2170e-003
tblVehicleEF	LDT2	0.04	0.29
tblVehicleEF	LDT2	0.08	0.06
tblVehicleEF	LDT2	0.04	0.29
tblVehicleEF	LDT2	5.3280e-003	6.0020e-003
tblVehicleEF	LDT2	0.05	0.22
tblVehicleEF	LDT2	0.15	0.24

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tblVehicleEF	LDT2	2.3080e-003	2.8610e-003
tblVehicleEF	LDT2	4.8700e-004	7.2700e-004
tblVehicleEF	LDT2	0.04	0.29
tblVehicleEF	LDT2	0.08	0.06
tblVehicleEF	LDT2	0.04	0.29
tblVehicleEF	LDT2	7.7280e-003	8.7420e-003
tblVehicleEF	LDT2	0.05	0.22
tblVehicleEF	LDT2	0.17	0.26
tblVehicleEF	LHD1	3.5230e-003	3.5150e-003
tblVehicleEF	LHD1	5.4200e-003	4.4160e-003
tblVehicleEF	LHD1	8.2370e-003	0.01
tblVehicleEF	LHD1	0.16	0.15
tblVehicleEF	LHD1	0.53	0.51
tblVehicleEF	LHD1	0.80	1.63
tblVehicleEF	LHD1	8.48	7.83
tblVehicleEF	LHD1	669.00	603.53
tblVehicleEF	LHD1	8.61	12.77
tblVehicleEF	LHD1	8.4900e-004	7.2000e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	0.06	0.06
tblVehicleEF	LHD1	0.52	0.53
tblVehicleEF	LHD1	0.19	0.27
tblVehicleEF	LHD1	1.0710e-003	8.3800e-004
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.01	9.5250e-003
tblVehicleEF	LHD1	9.9390e-003	0.01
tblVehicleEF	LHD1	1.7400e-004	9.8000e-005
tblVehicleEF	LHD1	1.0250e-003	8.0200e-004

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tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	2.5280e-003	2.3810e-003
tblVehicleEF	LHD1	9.4700e-003	0.01
tblVehicleEF	LHD1	1.6000e-004	9.0000e-005
tblVehicleEF	LHD1	1.3540e-003	0.09
tblVehicleEF	LHD1	0.06	0.02
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	7.6800e-004	0.09
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.15	0.13
tblVehicleEF	LHD1	0.04	0.07
tblVehicleEF	LHD1	8.2000e-005	7.6000e-005
tblVehicleEF	LHD1	6.5070e-003	5.8680e-003
tblVehicleEF	LHD1	8.5000e-005	1.2600e-004
tblVehicleEF	LHD1	1.3540e-003	0.09
tblVehicleEF	LHD1	0.06	0.02
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	7.6800e-004	0.09
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.15	0.13
tblVehicleEF	LHD1	0.04	0.08
tblVehicleEF	LHD2	2.2760e-003	2.3430e-003
tblVehicleEF	LHD2	5.6040e-003	4.7530e-003
tblVehicleEF	LHD2	4.2270e-003	7.9700e-003
tblVehicleEF	LHD2	0.13	0.13
tblVehicleEF	LHD2	0.56	0.41
tblVehicleEF	LHD2	0.42	0.97
tblVehicleEF	LHD2	13.44	14.04
tblVehicleEF	LHD2	668.10	674.41

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tblVehicleEF	LHD2	5.68	7.56
tblVehicleEF	LHD2	1.7800e-003	1.8360e-003
tblVehicleEF	LHD2	0.06	0.07
tblVehicleEF	LHD2	9.9670e-003	0.01
tblVehicleEF	LHD2	0.09	0.10
tblVehicleEF	LHD2	0.57	0.67
tblVehicleEF	LHD2	0.12	0.17
tblVehicleEF	LHD2	1.5410e-003	1.5110e-003
tblVehicleEF	LHD2	0.09	0.08
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	8.7000e-005	3.8000e-005
tblVehicleEF	LHD2	1.4750e-003	1.4460e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.7330e-003	2.6150e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	8.0000e-005	3.5000e-005
tblVehicleEF	LHD2	6.1100e-004	0.06
tblVehicleEF	LHD2	0.02	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.8400e-004	0.06
tblVehicleEF	LHD2	0.11	0.09
tblVehicleEF	LHD2	0.06	0.08
tblVehicleEF	LHD2	0.02	0.04
tblVehicleEF	LHD2	1.2800e-004	1.3400e-004
tblVehicleEF	LHD2	6.4350e-003	6.4790e-003
tblVehicleEF	LHD2	5.6000e-005	7.5000e-005
tblVehicleEF	LHD2	6.1100e-004	0.06
tblVehicleEF	LHD2	0.02	0.01

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tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.8400e-004	0.06
tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	0.06	0.08
tblVehicleEF	LHD2	0.02	0.04
tblVehicleEF	MCY	0.34	0.16
tblVehicleEF	MCY	0.25	0.18
tblVehicleEF	MCY	18.86	12.31
tblVehicleEF	MCY	9.49	8.51
tblVehicleEF	MCY	216.48	187.49
tblVehicleEF	MCY	60.49	46.98
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	7.1760e-003
tblVehicleEF	MCY	1.17	0.55
tblVehicleEF	MCY	0.27	0.12
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	2.3340e-003	2.0740e-003
tblVehicleEF	MCY	2.7620e-003	3.2550e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	2.1770e-003	1.9360e-003
tblVehicleEF	MCY	2.5830e-003	3.0470e-003
tblVehicleEF	MCY	0.86	4.77
tblVehicleEF	MCY	0.74	3.55
tblVehicleEF	MCY	0.43	4.77
tblVehicleEF	MCY	2.33	1.01
tblVehicleEF	MCY	0.50	3.99
tblVehicleEF	MCY	1.96	1.31
tblVehicleEF	MCY	2.1420e-003	1.8540e-003
tblVehicleEF	MCY	5.9900e-004	4.6400e-004

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tblVehicleEF	MCY	0.86	0.12
tblVehicleEF	MCY	0.74	3.55
tblVehicleEF	MCY	0.43	0.12
tblVehicleEF	MCY	2.91	1.23
tblVehicleEF	MCY	0.50	3.99
tblVehicleEF	MCY	2.13	1.42
tblVehicleEF	MDV	1.5320e-003	1.9390e-003
tblVehicleEF	MDV	0.04	0.06
tblVehicleEF	MDV	0.51	0.65
tblVehicleEF	MDV	2.22	2.80
tblVehicleEF	MDV	284.53	347.74
tblVehicleEF	MDV	59.41	88.43
tblVehicleEF	MDV	5.1050e-003	5.1970e-003
tblVehicleEF	MDV	0.02	0.03
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.17	0.28
tblVehicleEF	MDV	0.04	0.01
tblVehicleEF	MDV	8.5000e-004	8.3500e-004
tblVehicleEF	MDV	1.0950e-003	1.3990e-003
tblVehicleEF	MDV	0.02	3.5950e-003
tblVehicleEF	MDV	7.8300e-004	7.7000e-004
tblVehicleEF	MDV	1.0070e-003	1.2860e-003
tblVehicleEF	MDV	0.06	0.37
tblVehicleEF	MDV	0.11	0.08
tblVehicleEF	MDV	0.06	0.37
tblVehicleEF	MDV	5.8750e-003	7.3430e-003
tblVehicleEF	MDV	0.06	0.27
tblVehicleEF	MDV	0.18	0.29
tblVehicleEF	MDV	2.8110e-003	3.4360e-003

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tblVehicleEF	MDV	5.8800e-004	8.7400e-004
tblVehicleEF	MDV	0.06	0.37
tblVehicleEF	MDV	0.11	0.08
tblVehicleEF	MDV	0.06	0.37
tblVehicleEF	MDV	8.5010e-003	0.01
tblVehicleEF	MDV	0.06	0.27
tblVehicleEF	MDV	0.20	0.32
tblVehicleEF	MH	4.8290e-003	5.6150e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.29	0.34
tblVehicleEF	MH	1.46	1.56
tblVehicleEF	MH	1,304.47	1,589.84
tblVehicleEF	MH	13.82	16.87
tblVehicleEF	MH	0.06	0.08
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.31	1.64
tblVehicleEF	MH	0.23	0.30
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	1.8400e-004	1.8500e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.3370e-003	3.4120e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	1.6900e-004	1.7000e-004
tblVehicleEF	MH	0.30	19.52
tblVehicleEF	MH	0.03	4.06
tblVehicleEF	MH	0.13	19.52
tblVehicleEF	MH	0.05	0.06

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tblVehicleEF	MH	3.9570e-003	0.11
tblVehicleEF	MH	0.07	0.08
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.3700e-004	1.6700e-004
tblVehicleEF	MH	0.30	19.52
tblVehicleEF	MH	0.03	4.06
tblVehicleEF	MH	0.13	19.52
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	3.9570e-003	0.11
tblVehicleEF	MH	0.07	0.08
tblVehicleEF	MHD	2.2870e-003	0.01
tblVehicleEF	MHD	7.3600e-004	7.1140e-003
tblVehicleEF	MHD	4.8750e-003	4.1100e-003
tblVehicleEF	MHD	0.33	0.55
tblVehicleEF	MHD	0.13	0.09
tblVehicleEF	MHD	0.49	0.42
tblVehicleEF	MHD	59.93	129.17
tblVehicleEF	MHD	896.36	852.33
tblVehicleEF	MHD	4.74	4.17
tblVehicleEF	MHD	8.9460e-003	0.02
tblVehicleEF	MHD	0.12	0.12
tblVehicleEF	MHD	4.5090e-003	2.9020e-003
tblVehicleEF	MHD	0.32	0.65
tblVehicleEF	MHD	1.50	0.39
tblVehicleEF	MHD	1.89	1.07
tblVehicleEF	MHD	1.0300e-004	2.8900e-004
tblVehicleEF	MHD	0.13	0.04
tblVehicleEF	MHD	7.3780e-003	3.2500e-003
tblVehicleEF	MHD	6.3000e-005	4.9000e-005

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tblVehicleEF	MHD	9.9000e-005	2.7600e-004
tblVehicleEF	MHD	0.06	0.01
tblVehicleEF	MHD	7.0550e-003	3.1050e-003
tblVehicleEF	MHD	5.8000e-005	4.5000e-005
tblVehicleEF	MHD	1.8000e-004	0.01
tblVehicleEF	MHD	9.8650e-003	2.2890e-003
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	1.1100e-004	0.01
tblVehicleEF	MHD	0.01	8.0580e-003
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	5.6800e-004	1.1910e-003
tblVehicleEF	MHD	8.5170e-003	8.0390e-003
tblVehicleEF	MHD	4.7000e-005	4.1000e-005
tblVehicleEF	MHD	1.8000e-004	0.01
tblVehicleEF	MHD	9.8650e-003	2.2890e-003
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	1.1100e-004	0.01
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	OBUS	6.6010e-003	7.5120e-003
tblVehicleEF	OBUS	1.8540e-003	9.3640e-003
tblVehicleEF	OBUS	0.01	0.02
tblVehicleEF	OBUS	0.73	0.70
tblVehicleEF	OBUS	0.24	0.32
tblVehicleEF	OBUS	1.55	1.81
tblVehicleEF	OBUS	109.51	104.31
tblVehicleEF	OBUS	1,117.55	1,251.89

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tblVehicleEF	OBUS	12.09	13.70
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.13	0.15
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.52	0.34
tblVehicleEF	OBUS	1.55	0.86
tblVehicleEF	OBUS	1.26	0.80
tblVehicleEF	OBUS	1.7400e-004	3.1700e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	8.6430e-003	0.02
tblVehicleEF	OBUS	1.4500e-004	1.4200e-004
tblVehicleEF	OBUS	1.6700e-004	3.0300e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	8.2580e-003	0.01
tblVehicleEF	OBUS	1.3300e-004	1.3000e-004
tblVehicleEF	OBUS	1.1630e-003	0.09
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.05
tblVehicleEF	OBUS	5.4800e-004	0.09
tblVehicleEF	OBUS	0.02	0.04
tblVehicleEF	OBUS	0.06	0.10
tblVehicleEF	OBUS	0.07	0.09
tblVehicleEF	OBUS	1.0380e-003	9.8600e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.2000e-004	1.3500e-004
tblVehicleEF	OBUS	1.1630e-003	0.09
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.07	0.07
tblVehicleEF	OBUS	5.4800e-004	0.09

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tblVehicleEF	OBUS	0.02	0.05
tblVehicleEF	OBUS	0.06	0.10
tblVehicleEF	OBUS	0.08	0.10
tblVehicleEF	SBUS	0.04	0.09
tblVehicleEF	SBUS	2.6380e-003	0.17
tblVehicleEF	SBUS	3.9710e-003	2.7060e-003
tblVehicleEF	SBUS	2.18	1.18
tblVehicleEF	SBUS	0.22	0.70
tblVehicleEF	SBUS	0.53	0.33
tblVehicleEF	SBUS	312.30	155.09
tblVehicleEF	SBUS	955.60	890.07
tblVehicleEF	SBUS	3.05	2.05
tblVehicleEF	SBUS	0.04	0.02
tblVehicleEF	SBUS	0.13	0.12
tblVehicleEF	SBUS	4.3020e-003	3.1730e-003
tblVehicleEF	SBUS	2.06	0.81
tblVehicleEF	SBUS	2.23	0.94
tblVehicleEF	SBUS	1.53	0.48
tblVehicleEF	SBUS	9.8800e-004	3.9300e-004
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	6.1960e-003
tblVehicleEF	SBUS	4.5000e-005	2.4000e-005
tblVehicleEF	SBUS	9.4500e-004	3.7400e-004
tblVehicleEF	SBUS	0.32	0.01
tblVehicleEF	SBUS	2.7690e-003	2.7280e-003
tblVehicleEF	SBUS	0.02	5.9120e-003
tblVehicleEF	SBUS	4.1000e-005	2.2000e-005
tblVehicleEF	SBUS	6.0800e-004	0.04

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tblVehicleEF	SBUS	6.1590e-003	7.6100e-003
tblVehicleEF	SBUS	0.21	0.11
tblVehicleEF	SBUS	2.9900e-004	0.04
tblVehicleEF	SBUS	0.04	0.03
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	2.9690e-003	1.3070e-003
tblVehicleEF	SBUS	9.1090e-003	7.9380e-003
tblVehicleEF	SBUS	3.0000e-005	2.0000e-005
tblVehicleEF	SBUS	6.0800e-004	0.04
tblVehicleEF	SBUS	6.1590e-003	7.6100e-003
tblVehicleEF	SBUS	0.30	0.23
tblVehicleEF	SBUS	2.9900e-004	0.04
tblVehicleEF	SBUS	0.05	0.20
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	UBUS	1.71	0.54
tblVehicleEF	UBUS	0.01	0.01
tblVehicleEF	UBUS	12.99	6.44
tblVehicleEF	UBUS	0.84	2.05
tblVehicleEF	UBUS	1,639.77	780.74
tblVehicleEF	UBUS	7.43	13.61
tblVehicleEF	UBUS	0.27	0.09
tblVehicleEF	UBUS	6.6560e-003	0.02
tblVehicleEF	UBUS	0.67	0.14
tblVehicleEF	UBUS	0.08	0.12
tblVehicleEF	UBUS	0.08	0.21
tblVehicleEF	UBUS	0.03	0.09
tblVehicleEF	UBUS	4.8850e-003	2.6430e-003

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tblVehicleEF	UBUS	8.8000e-005	7.8000e-005
tblVehicleEF	UBUS	0.03	0.07
tblVehicleEF	UBUS	7.7720e-003	0.02
tblVehicleEF	UBUS	4.6670e-003	2.5170e-003
tblVehicleEF	UBUS	8.1000e-005	7.2000e-005
tblVehicleEF	UBUS	2.1000e-004	0.03
tblVehicleEF	UBUS	2.9060e-003	7.6760e-003
tblVehicleEF	UBUS	1.2100e-004	0.03
tblVehicleEF	UBUS	0.03	0.03
tblVehicleEF	UBUS	7.0000e-004	0.03
tblVehicleEF	UBUS	0.05	0.05
tblVehicleEF	UBUS	0.01	5.9270e-003
tblVehicleEF	UBUS	7.4000e-005	1.3500e-004
tblVehicleEF	UBUS	2.1000e-004	0.03
tblVehicleEF	UBUS	2.9060e-003	7.6760e-003
tblVehicleEF	UBUS	1.2100e-004	0.03
tblVehicleEF	UBUS	1.75	0.58
tblVehicleEF	UBUS	7.0000e-004	0.03
tblVehicleEF	UBUS	0.05	0.06
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	ST_TR	1.74	1.51
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	SU_TR	1.74	1.51
tblVehicleTrips	WD_TR	9.74	0.00
tblVehicleTrips	WD_TR	1.74	1.51
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00

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tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
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
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	0.96	0.00
tblWoodstoves	NumberNoncatalytic	0.96	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3473	4.1100e-003	0.3568	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.6000e-004	0.0000	0.5994
Energy	2.9700e-003	0.0258	0.0140	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	49.5115	49.5115	6.0900e-003	1.2100e-003	50.0243
Mobile	0.1412	0.1225	0.7529	2.5300e-003	0.2528	1.7300e-003	0.2545	0.0633	1.6300e-003	0.0650	0.0000	235.4531	235.4531	8.2000e-003	0.0130	239.5393
Waste						0.0000	0.0000		0.0000	0.0000	12.0942	0.0000	12.0942	0.7148	0.0000	29.9629
Water						0.0000	0.0000		0.0000	0.0000	4.3539	4.0181	8.3720	0.0161	9.6000e-003	11.6358

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Total	**0.4915**	**0.1524**	**1.1236**	**2.7100e-003**	**0.2528**	**5.7600e-003**	**0.2585**	**0.0633**	**5.6600e-003**	**0.0690**	**16.4481**	**289.5680**	**306.0162**	**0.7457**	**0.0238**	**331.7616**

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	0.3473	4.1100e-003	0.3568	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.6000e-004	0.0000	0.5994
Energy	2.9700e-003	0.0258	0.0140	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	49.5115	49.5115	6.0900e-003	1.2100e-003	50.0243
Mobile	0.1412	0.1225	0.7529	2.5300e-003	0.2528	1.7300e-003	0.2545	0.0633	1.6300e-003	0.0650	0.0000	235.4531	235.4531	8.2000e-003	0.0130	239.5393
Waste						0.0000	0.0000		0.0000	0.0000	12.0942	0.0000	12.0942	0.7148	0.0000	29.9629
Water						0.0000	0.0000		0.0000	0.0000	4.3539	4.0181	8.3720	0.0161	9.6000e-003	11.6358
Total	**0.4915**	**0.1524**	**1.1236**	**2.7100e-003**	**0.2528**	**5.7600e-003**	**0.2585**	**0.0633**	**5.6600e-003**	**0.0690**	**16.4481**	**289.5680**	**306.0162**	**0.7457**	**0.0238**	**331.7616**

	ROG	NOx	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

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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					
Mitigated	0.1412	0.1225	0.7529	2.5300e-003	0.2528	1.7300e-003	0.2545	0.0633	1.6300e-003	0.0650	0.0000	235.4531	235.4531	8.2000e-003	0.0130	239.5393
Unmitigated	0.1412	0.1225	0.7529	2.5300e-003	0.2528	1.7300e-003	0.2545	0.0633	1.6300e-003	0.0650	0.0000	235.4531	235.4531	8.2000e-003	0.0130	239.5393

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	261.12	235.68	196.32	573,311	573,311
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	58.89	58.89	58.89	171,930	171,930
Total	320.01	294.57	255.21	745,241	745,241

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
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rai	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.534132	0.029187	0.213277	0.128565	0.033166	0.009100	0.022146	0.022521	0.001399	0.001126	0.003517	0.001109	0.000757
General Office Building	0.534132	0.029187	0.213277	0.128565	0.033166	0.009100	0.022146	0.022521	0.001399	0.001126	0.003517	0.001109	0.000757
Parking Lot	0.534132	0.029187	0.213277	0.128565	0.033166	0.009100	0.022146	0.022521	0.001399	0.001126	0.003517	0.001109	0.000757
Unrefrigerated Warehouse-No Rail	0.534132	0.029187	0.213277	0.128565	0.033166	0.009100	0.022146	0.022521	0.001399	0.001126	0.003517	0.001109	0.000757

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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	20.1040	20.1040	5.5300e-003	6.7000e-004	20.4419
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	20.1040	20.1040	5.5300e-003	6.7000e-004	20.4419
NaturalGas Mitigated	2.9700e-003	0.0258	0.0140	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	29.4076	29.4076	5.6000e-004	5.4000e-004	29.5823
NaturalGas Unmitigated	2.9700e-003	0.0258	0.0140	1.6000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	29.4076	29.4076	5.6000e-004	5.4000e-004	29.5823

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	402321	2.1700e-003	0.0185	7.8900e-003	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003	0.0000	21.4694	21.4694	4.1000e-004	3.9000e-004	21.5969

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General Office Building	14596.2	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7789	0.7789	1.0000e-005	1.0000e-005	0.7835
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	134160	7.2000e-004	6.5800e-003	5.5200e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1593	7.1593	1.4000e-004	1.3000e-004	7.2018
Total		**2.9700e-003**	**0.0258**	**0.0140**	**1.6000e-004**		**2.0500e-003**	**2.0500e-003**		**2.0500e-003**	**2.0500e-003**	**0.0000**	**29.4076**	**29.4076**	**5.6000e-004**	**5.3000e-004**	**29.5823**

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	402321	2.1700e-003	0.0185	7.8900e-003	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003	0.0000	21.4694	21.4694	4.1000e-004	3.9000e-004	21.5969
General Office Building	14596.2	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7789	0.7789	1.0000e-005	1.0000e-005	0.7835
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	134160	7.2000e-004	6.5800e-003	5.5200e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1593	7.1593	1.4000e-004	1.3000e-004	7.2018
Total		**2.9700e-003**	**0.0258**	**0.0140**	**1.6000e-004**		**2.0500e-003**	**2.0500e-003**		**2.0500e-003**	**2.0500e-003**	**0.0000**	**29.4076**	**29.4076**	**5.6000e-004**	**5.3000e-004**	**29.5823**

5.3 Energy by Land Use - Electricity

Unmitigated

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	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	185589	10.1001	2.7800e-003	3.4000e-004	10.2699
General Office Building	15470.2	0.8419	2.3000e-004	3.0000e-005	0.8561
Parking Lot	31850	1.7333	4.8000e-004	6.0000e-005	1.7625
Unrefrigerated Warehouse-No Rail	136500	7.4286	2.0400e-003	2.5000e-004	7.5535
Total		**20.1040**	**5.5300e-003**	**6.8000e-004**	**20.4419**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	185589	10.1001	2.7800e-003	3.4000e-004	10.2699
General Office Building	15470.2	0.8419	2.3000e-004	3.0000e-005	0.8561
Parking Lot	31850	1.7333	4.8000e-004	6.0000e-005	1.7625
Unrefrigerated Warehouse-No Rail	136500	7.4286	2.0400e-003	2.5000e-004	7.5535
Total		**20.1040**	**5.5300e-003**	**6.8000e-004**	**20.4419**

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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	0.3473	4.1100e-003	0.3568	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.6000e-004	0.0000	0.5994
Unmitigated	0.3473	4.1100e-003	0.3568	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.6000e-004	0.0000	0.5994

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	0.0459					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2906					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	0.0108	4.1100e-003	0.3568	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.6000e-004	0.0000	0.5994

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Total	**0.3473**	**4.1100e-003**	**0.3568**	**2.0000e-005**		**1.9800e-003**	**1.9800e-003**		**1.9800e-003**	**1.9800e-003**	**0.0000**	**0.5853**	**0.5853**	**5.6000e-004**	**0.0000**	**0.5994**

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	0.0459					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2906					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	0.0108	4.1100e-003	0.3568	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5853	0.5853	5.6000e-004	0.0000	0.5994
Total	**0.3473**	**4.1100e-003**	**0.3568**	**2.0000e-005**		**1.9800e-003**	**1.9800e-003**		**1.9800e-003**	**1.9800e-003**	**0.0000**	**0.5853**	**0.5853**	**5.6000e-004**	**0.0000**	**0.5994**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e

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Category	MT/yr			
Mitigated	8.3720	0.0161	9.6000e-003	11.6358
Unmitigated	8.3720	0.0161	9.6000e-003	11.6358

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.12739 / 1.97162	2.4030	4.1600e-003	2.4500e-003	3.2370
General Office Building	0.15996 / 0.0980402	0.1224	2.1000e-004	1.3000e-004	0.1650
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	9.01875 / 0	5.8467	0.0117	7.0300e-003	8.2337
Total		**8.3720**	**0.0161**	**9.6100e-003**	**11.6358**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

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Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.12739 / 1.97162	2.4030	4.1600e-003	2.4500e-003	3.2370
General Office Building	0.15996 / 0.0980402	0.1224	2.1000e-004	1.3000e-004	0.1650
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	9.01875 / 0	5.8467	0.0117	7.0300e-003	8.2337
Total		**8.3720**	**0.0161**	**9.6100e-003**	**11.6358**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.0942	0.7148	0.0000	29.9629
Unmitigated	12.0942	0.7148	0.0000	29.9629

8.2 Waste by Land Use

Unmitigated

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	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	22.08	4.4820	0.2649	0.0000	11.1041
General Office Building	0.84	0.1705	0.0101	0.0000	0.4224
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	36.66	7.4417	0.4398	0.0000	18.4364
Total		**12.0942**	**0.7148**	**0.0000**	**29.9629**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	22.08	4.4820	0.2649	0.0000	11.1041
General Office Building	0.84	0.1705	0.0101	0.0000	0.4224
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	36.66	7.4417	0.4398	0.0000	18.4364
Total		**12.0942**	**0.7148**	**0.0000**	**29.9629**

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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
					Tons						*Metric Tons*
Criteria Pollutants											
2022 & 2023	0.0618	0.2294	0.5331	0.0018	0.0978	0.0132	0.1110	0.0147	0.0055	0.0202	175.3525
Toxic Air Contaminants (1 Mile Trip Length)											
2022 & 2023	0.0535	0.0663	0.1887	0.0002	0.0095	0.0014	0.0109	0.0014	0.0006	0.0021	22.9776

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	15	0	300	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	3240	0	0
Site Preparation	18	0	90	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	972	0	0
Grading	15	0	120	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1296	0	0
Trenching/Foundation	5	0	50	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	540	0	0
Paving	20	0	360	0	202	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	3888	0	4040
Building Construction	89	27	20470	6210	648	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	221076	45333	12960
Architectural Coating	18	0	324	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	3499.2	0	0

Number of Days Per Year					
2022 & 2023	1/3/22	3/9/23	431	309	
			431	**309**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	1/3/2022	1/28/2022	5	20
Site Preparation	1/29/2022	2/4/2022	5	5
Grading	2/5/2022	2/16/2022	5	8
Trenching/Foundation	2/17/2022	3/2/2022	5	10
Paving	1/19/2023	2/13/2023	5	18
Building Construction	3/3/2022	1/18/2023	5	230
Architectural Coating	2/14/2023	3/9/2023	5	18

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Sonoma
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_PM	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PM	PM10_PMI	CO2_RUNE	CO2_IDLEX	CO2_STREX	CH4_RUNE	CH4_IDLEX	CH4_STREX	N2O_RUNEX	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_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Sonoma	2022	HHDT	Aggregate	Aggregate	Gasoline	2.471308	70.89571	70.89571	0	49.44594	0	19.09586	0	1.349856	0.006593	0	0.002186	0.005	0.039547	0.00717	0	0.002378	0.02	0.11299	2692.062	0	50.37484	0.698856	0	5.11E-05	0.437881	0	0.024682	4.599289	0	0.000277	0.143834	1.316047	10.12584	6.711272	0	0.000304	0.143834	1.316047	10.12584	0.039476	157.6574	0	0.943025	0.026614	0	0.000498
Sonoma	2022	HHDT	Aggregate	Aggregate	Diesel	2287.78	226779.1	226779.1	0	26995.73	0	2.724809	52.11206	2.581892	0.025888	0.04283	0	0.008449	0.028066	0.027059	0.044766	0	0.033797	0.080189	1748.692	9294.644	0	0.001532	0.173525	0	0.275507	1.464375	0	0.032976	3.735953	0	0	0	0	0.03754	4.253099	0	0	0	0	0.201677	0.137723	50.71933	0	0.016559	0.088015	0
Sonoma	2022	HHDT	Aggregate	Aggregate	Natural Ga	148.453	10070.99	10070.99	0	1156.095	0	1.00621	11.12652	0	0.002422	0.018704	0	0.009	0.048912	0.002634	0.020343	0	0.036	0.13975	1411.961	8910.949	0	1.524823	29.01133	0	0.287837	1.816555	0	0.053693	0.477282	0	0	0	0	1.592545	29.67457	0	0	0	0	0.840116	10.42963	65.43314	0	0	0	0
Sonoma	2022	LDA	Aggregate	Aggregate	Gasoline	140195.7	5196180	5196180	0	644257.9	0	0.067838	0	0.317285	0.00135	0	0.002167	0.002	0.00311	0.001468	0	0.002357	0.008	0.008887	288.5123	0	75.0293	0.003646	0	0.09061	0.006295	0	0.036732	0.015085	0	0.437809	0.112495	0.300375	1.761024	0.022001	0	0.479343	0.112495	0.300375	1.761024	0.032512	0.984166	0	4.186514	0.002852	0	0.000742
Sonoma	2022	LDA	Aggregate	Aggregate	Diesel	1048.668	31689.52	31689.52	0	4438.866	0	0.381028	0	0	0.02488	0	0	0.002	0.003155	0.026005	0	0	0.008	0.009014	244.709	0	0	0.001883	0	0	0.038554	0	0	0.040547	0	0	0	0	0	0.04616	0	0	0	0	0	0.0031	0.431304	0	0	0.002319	0	0
Sonoma	2022	LDA	Aggregate	Aggregate	Electricity	6062.237	269657.9	0	269657.9	30214.9	104110.2	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
Sonoma	2022	LDA	Aggregate	Aggregate	Plug-in Hyb	2815.694	129033.6	67150.17	61883.42	11642.9	18690.64	0.003601	0	0.117556	0.000723	0	0.002222	0.002	0.001443	0.000786	0	0.002416	0.008	0.004123	148.7316	0	67.3255	0.00049	0	0.044077	0.000656	0	0.021383	0.001548	0	0.178908	0.040438	0.035571	0.444842	0.002258	0	0.195881	0.040438	0.035571	0.444842	0.019517	0.231328	0	1.393531	0.00147	0	0.000666
Sonoma	2022	LDT1	Aggregate	Aggregate	Gasoline	20067.23	610046.8	610046.8	0	86138.2	0	0.236345	0	0.553658	0.00248	0	0.00382	0.002	0.003775	0.002697	0	0.004154	0.008	0.010785	344.6795	0	97.04366	0.011322	0	0.157736	0.015352	0	0.046661	0.052668	0	0.874941	0.25623	0.787016	4.020918	0.037177	0	0.95794	0.25623	0.787016	4.020918	0.037177	2.338869	0	8.581733	0.003408	0	0.000959
Sonoma	2022	LDT1	Aggregate	Aggregate	Diesel	25.41835	319.0855	319.0855	0	74.62415	0	1.639883	0	0	0.246633	0	0	0	0.004258	0.257785	0	0	0.008	0.012166	422.344	0	0	0.014425	0	0	0.06654	0	0	0.310556	0	0	0	0	0	0.353547	0	0	0	0	0	0.0031	1.634118	0	0	0.004002	0	0
Sonoma	2022	LDT1	Aggregate	Aggregate	Electricity	29.69266	1079.715	0	1079.715	138.8667	416.8591	0	0	0	0	0	0	0.002	0.001541	0	0	0	0.008	0.004402	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
Sonoma	2022	LDT1	Aggregate	Aggregate	Plug-in Hyb	5.011973	249.6941	119.9258	129.7684	20.72451	39.19392	0.003323	0	0.117544	0.000446	0	0.001504	0.002	0.001445	0.000485	0	0.001636	0.008	0.004128	137.2778	0	73.69466	0.000453	0	0.044097	0.000605	0	0.021406	0.001429	0	0.178876	0.025003	0.023389	0.296523	0.002085	0	0.195847	0.025003	0.023389	0.296523	0.020172	0.213562	0	1.39323	0.001357	0	0.000729
Sonoma	2022	LDT2	Aggregate	Aggregate	Gasoline	68707.44	2513548	2513548	0	318060.6	0	0.108957	0	0.441335	0.001413	0	0.002168	0.002	0.003599	0.001536	0	0.002358	0.008	0.010282	360.9379	0	94.68131	0.004136	0	0.104329	0.008062	0	0.042908	0.01732	0	0.509995	0.103404	0.282102	1.674735	0.025264	0	0.558379	0.103404	0.282102	1.674735	0.034046	1.105711	0	4.791121	0.003568	0	0.000936
Sonoma	2022	LDT2	Aggregate	Aggregate	Diesel	295.5345	11380.62	11380.62	0	1392.155	0	0.081259	0	0	0.008303	0	0	0.002	0.003576	0.008678	0	0	0.008	0.010219	331.5312	0	0	0.000865	0	0	0.052233	0	0	0.018621	0	0	0	0	0	0.021199	0	0	0	0	0	0.0031	0.165493	0	0	0.003141	0	0
Sonoma	2022	LDT2	Aggregate	Aggregate	Electricity	130.2975	4907.462	0	4907.462	669.2734	1894.685	0	0	0	0	0	0	0.002	0.001524	0	0	0	0.008	0.004354	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
Sonoma	2022	LDT2	Aggregate	Aggregate	Plug-in Hyb	260.5062	12555.57	6249.268	6306.304	1077.193	1904.692	0.003443	0	0.117542	0.000595	0	0.001837	0.002	0.001443	0.000647	0	0.002107	0.008	0.004123	142.2641	0	80.14275	0.000469	0	0.044109	0.000628	0	0.021418	0.00148	0	0.178872	0.026741	0.025625	0.326849	0.00216	0	0.195842	0.026741	0.025625	0.326849	0.020822	0.221327	0	1.29319	0.001406	0	0.000792
Sonoma	2022	LHDT1	Aggregate	Aggregate	Gasoline	8676.835	308164.6	308164.6	0	129271.9	0	0.312352	0.039613	0.690714	0.002036	0	0.000455	0.002	0.0273	0.002215	0	0.000495	0.008	0.078	936.0824	122.4308	25.95258	0.01505	0.119429	0.039261	0.016801	0.003025	0.052007	0.077228	0.453208	0.201528	0.063774	0.358285	3.596475	0.112691	0.661321	0.220648	0.063774	0.358285	3.596475	0.044813	1.723451	3.736462	3.090885	0.009254	0.00121	0.000257
Sonoma	2022	LHDT1	Aggregate	Aggregate	Diesel	8815.809	317378.1	317378.1	0	110891.8	0	2.778483	2.367072	0	0.053407	0.0273	0	0.003	0.0273	0.055822	0.028535	0	0.012	0.078	643.875	137.9421	0	0.011403	0.005098	0	0.101443	0.021733	0	0.245498	0.10976	0	0	0	0	0.279484	0.124954	0	0	0	0	0.133945	0.742731	0.909745	0	0.006101	0.001307	0
Sonoma	2022	LHDT2	Aggregate	Aggregate	Gasoline	1324.51	50670.47	50670.47	0	19733.22	0	0.190949	0.038508	0.66167	0.001461	0	0.000273	0.002	0.03185	0.001589	0	0.000297	0.008	0.091	1013.099	139.9094	25.92176	0.007917	0.120851	0.034888	0.011336	0.003156	0.052849	0.03799	0.441455	0.171688	0.043729	0.230479	2.402551	0.055435	0.64417	0.187977	0.043729	0.230479	2.402551	0.044961	1.059566	3.759962	3.129578	0.010016	0.001383	0.000256
Sonoma	2022	LHDT2	Aggregate	Aggregate	Diesel	3001.308	116890.4	116890.4	0	37752.68	0	1.805916	2.270836	0	0.041999	0.026712	0	0.003	0.03185	0.043898	0.02792	0	0.012	0.091	785.7659	218.1018	0	0.009127	0.005098	0	0.123798	0.034362	0	0.19649	0.10976	0	0	0	0	0.223691	0.124954	0	0	0	0	0.165029	0.538689	0.909745	0	0.007446	0.002067	0
Sonoma	2022	MCY	Aggregate	Aggregate	Gasoline	10364.83	56210.01	56210.01	0	20729.66	0	0.716623	0	0.188538	0.001925	0	0.004046	0.001	0.0042	0.002048	0	0.004278	0.004	0.012	193.4033	0	58.29918	0.212174	0	0.230249	0.045964	0	0.010676	1.486322	0	1.770554	3.547365	3.862136	4.776188	1.744506	0	1.923569	3.547365	3.862136	4.776188	0.088414	16.9132	0	8.823297	0.001912	0	0.000576
Sonoma	2022	MDV	Aggregate	Aggregate	Gasoline	48744.11	1685912	1685912	0	221042.9	0	0.167234	0	0.616188	0.001496	0	0.002535	0.002	0.003704	0.001627	0	0.002756	0.008	0.010584	439.9052	0	116.5657	0.0061	0	0.140639	0.011059	0	0.049912	0.027398	0	0.751904	0.131123	0.377266	2.151416	0.039869	0	0.823224	0.131123	0.377266	2.151416	0.033691	1.395285	0	5.678498	0.004349	0	0.001152
Sonoma	2022	MDV	Aggregate	Aggregate	Diesel	1049.043	40501.82	40501.82	0	4936.496	0	0.094277	0	0	0.007902	0	0	0.002	0.003628	0.008259	0	0	0.008	0.010366	427.7817	0	0	0.000738	0	0	0.067397	0	0	0.015881	0	0	0	0	0	0.018079	0	0	0	0	0	0.0031	0.243114	0	0	0.004053	0	0
Sonoma	2022	MDV	Aggregate	Aggregate	Electricity	125.795	4767.31	0	4767.31	647.7021	1840.575	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
Sonoma	2022	MDV	Aggregate	Aggregate	Plug-in Hyb	201.4859	9375.848	4855.061	4520.787	833.1444	1365.413	0.003583	0	0.117552	0.0008	0	0.002506	0.002	0.001443	0.00087	0	0.002726	0.008	0.004124	147.9988	0	100.6204	0.000488	0	0.044139	0.000654	0	0.021441	0.00154	0	0.178897	0.030927	0.030826	0.384476	0.002247	0	0.19587	0.030927	0.030826	0.384476	0.021749	0.230209	0	1.393429	0.001463	0	0.000995
Sonoma	2022	MH	Aggregate	Aggregate	Gasoline	1283.068	10944.58	10944.58	0	128.3581	0	0.616656	0	0.412675	0.001972	0	0.000459	0.003	0.015758	0.002145	0	0.0005	0.012	0.045024	1949.987	0	32.29824	0.022966	0	0.039629	0.033977	0	0.040861	0.106527	0	0.174212	14.74037	0.346337	5.342593	0.155444	0	0.19074	14.74037	0.346337	5.342593	0.044586	2.78755	0	3.873502	0.019278	0	0.000319
Sonoma	2022	MH	Aggregate	Aggregate	Diesel	593.8208	5721.925	5721.925	0	59.38208	0	4.772874	0	0	0.126585	0	0	0.004	0.01668	0.133168	0	0	0.016	0.044799	1080.236	0	0	0.006416	0	0	0.170192	0	0	0.138127	0	0	0	0	0	0.157248	0	0	0	0	0	0.128357	0.472665	0	0	0.010236	0	0
Sonoma	2022	MHDT	Aggregate	Aggregate	Gasoline	701.6346	34038.65	34038.65	0	14038.3	0	0.752833	0.087473	0.460177	0.001604	0	0.000703	0.003	0.015757	0.001745	0	0.000765	0.012	0.045021	1831.015	541.9388	48.43629	0.025892	0.248268	0.050669	0.033186	0.006715	0.031401	0.134641	1.004615	0.293461	0.045399	0.383891	3.567518	0.196468	1.465932	0.321303	0.045399	0.383891	3.567518	0.044806	2.889619	15.23893	6.595645	0.018101	0.005358	0.000479
Sonoma	2022	MHDT	Aggregate	Aggregate	Diesel	5030.17	221959.6	221959.6	0	59095.14	0	1.535437	14.65201	1.559192	0.018108	0.043833	0	0.003	0.015841	0.018927	0.045815	0	0.012	0.04526	1145.885	2316.49	0	0.002053	0.013766	0	0.180535	0.364964	0	0.044198	0.296384	0	0	0	0	0.050316	0.337411	0	0	0	0	0.201178	0.14918	7.404128	0	0.010851	0.021936	0
Sonoma	2022	MHDT	Aggregate	Aggregate	Natural Ga	30.9017	1550.925	1550.925	0	334.6292	0	0.161486	5.968651	0	0.000958	0.014679	0	0.003	0.015899	0.001042	0.015964	0	0.012	0.045425	977.3657	4797.171	0	0.674793	16.61564	0	0.190242	0.977935	0	0.009641	0.237405	0	0	0	0	0.688676	16.95748	0	0	0	0	1.06	2.910683	27.52755	0	0	0	0
Sonoma	2022	OBUS	Aggregate	Aggregate	Gasoline	184.6616	8733.208	8733.208	0	3694.709	0	0.720423	0.064788	0.421322	0.001047	0	0.000345	0.003	0.015684	0.001139	0	0.000375	0.012	0.04481	1798.609	382.6123	32.54339	0.019583	0.192642	0.037837	0.031371	0.005165	0.030271	0.097965	0.742148	0.204756	0.035276	0.160956	2.83029	0.14295	1.082941	0.224182	0.035276	0.160956	2.83029	0.044882	2.204736	5.74988	4.420133	0.017781	0.003783	0.000322
Sonoma	2022	OBUS	Aggregate	Aggregate	Diesel	164.2136	12484.06	12484.06	0	1879.236	0	1.736559	12.54801	1.53036	0.032335	0.016817	0	0.003	0.019581	0.033797	0.017578	0	0.012	0.055944	1379.752	2460.248	0	0.003285	0.037198	0	0.21738	0.387613	0	0.070722	0.800858	0	0	0	0	0.080512	0.911715	0	0	0	0	0.209252	0.221488	11.80751	0	0.013065	0.023297	0
Sonoma	2022	OBUS	Aggregate	Aggregate	Natural Ga	0.905192	61.88965	61.88965	0	8.05621	0	0.230238	1.552296	0	0.000873	0.003544	0	0.003	0.016148	0.00095	0.003855	0	0.012	0.046137	1042.524	1211.531	0	0.768315	4.420632	0	0.212525	0.246979	0	0.010978	0.063162	0	0	0	0	0.784121	4.51158	0	0	0	0	1.06	3.196451	6.552734	0	0	0	0
Sonoma	2022	SBUS	Aggregate	Aggregate	Gasoline	57.62532	2953.316	2953.316	0	230.5013	0	0.208907	0.9263	0.67829	0.000793	0	0.000531	0.002	0.015721	0.000862	0	0.000578	0.008	0.044917	815.3215	2606.378	56.32398	0.004274	2.501307	0.064263	0.015938	0.091197	0.066652	0.019716	10.63814	0.353503	0.080847	0.145342	1.00991	0.028769	15.52315	0.387041	0.080847	0.145342	1.00991	0.045	0.464858	82.22039	9.197426	0.00806	0.025767	0.000557
Sonoma	2022	SBUS	Aggregate	Aggregate	Diesel	388.3854	9106.626	9106.626	0	5623.821	0	3.925207	22.60304	0.435056	0.020368	0.019406	0	0.003	0.015721	0.021289	0.020284	0	0.012	0.044917	1178.868	2285.257	0	0.002937	0.008213	0	0.185731	0.360043	0	0.063235	0.176814	0	0	0	0	0.071988	0.20129	0	0	0	0	0.136635	0.18745	4.414081	0	0.011163	0.02164	0
Sonoma	2022	SBUS	Aggregate	Aggregate	Natural Ga	26.43423	684.6986	684.6986	0	382.7677	0	0.663423	5.330636	0	0.003378	0.009932	0	0.003	0.015721	0.003674	0.010802	0	0.012	0.044917	1281.367	3938.131	0	3.696321	15.99425	0	0.261215	0.802814	0	0.052813	0.228526	0	0	0	0	3.772367	16.32331	0	0	0	0	1.06	12.87089	17.53407	0	0	0	0
Sonoma	2022	UBUS	Aggregate	Aggregate	Gasoline	48.86513	3610.695	3610.695	0	195.4605	0	0.087007	0	0.659944	0.000847	0	0.000298	0.002288	0.033765	0.000921	0	0.000325	0.009152	0.096472	1225.124	0	60.05891	0.002751	0	0.074244	0.009175	0	0.08084	0.008405	0	0.292656	0.055736	0.106447	0.615848	0.012265	0	0.320422	0.055736	0.106447	0.615848	0.045	0.502862	0	7.354541	0.012112	0	0.000594
Sonoma	2022	UBUS	Aggregate	Aggregate	Diesel	43.18297	3856.33	3856.33	0	172.7319	0	0.352703	0	0	0.006409	0	0	0.007663	0.0385	0.006699	0	0	0.030651	0.11	1164.162	0	0	0.002997	0	0	0.183414	0	0	0.064535	0	0	0	0	0	0.073468	0	0	0	0	0	0.22	0.072549	0	0	0.011031	0	0
Sonoma	2022	UBUS	Aggregate	Aggregate	Electricity	1.009351	26.88826	0	26.88826	4.037406	46.8728	0	0	0	0	0	0	0.003	0.01925	0	0	0	0.012	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
Sonoma	2022	UBUS	Aggregate	Aggregate	Natural Ga	45.39372	5656.307	5656.307	0	181.5749	0	0.443655	0	0	0.000154	0	0	0.008125	0.0385	0.000161	0	0	0.032501	0.11	1474.124	0	0	1.362794	0	0	0.30051	0	0	0.019472	0	0	0	0	0	1.390831	0	0	0	0	0	0.97	22.70682	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Sonoma
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
Sonoma	2024	HHDT	Aggregate	Aggregate	Gasoline	1.60822	54.77772	54.77772	0	32.17734	0	17.0318	0	1.710583	0.00528	0	0.002014	0.005	0.037656	0.005742	0	0.00219	0.02	0.107587	2518.174	0	50.60987	0.536698	0	6.64E-05	0.391695	0	0.0312	3.477915	0	0.00036	0.136397	1.24959	9.587823	5.074965	0	0.000395	0.136397	1.24959	9.587823	0.040424	121.4007	0	1.308573	0.024895	0	0.0005
Sonoma	2024	HHDT	Aggregate	Aggregate	Diesel	2371.664	230054.8	2300054.8	0	28188.22	0	2.242603	48.56909	2.892769	0.02449	0.035161	0	0.008449	0.027536	0.025598	0.03675	0	0.033795	0.078674	1708.226	8911.709	0	0.000977	0.17379	0	6.64E-05	0.391695	0	0.0312	3.477915	0	0.00036	0.136397	1.24959	9.587823	5.074965	0	0.000395	0.136397	1.24959	9.587823	0.040424	121.4007	0	1.308573	0.024895	0	0.0005
Sonoma	2024	HHDT	Aggregate	Aggregate	Electricity	6.196545	584.9342	0	584.9342	72.70847	1085.436	0	0	0	0	0	0	0.008418	0.01408	0	0	0	0.033671	0.040229	0	0	0	0.269132	1.404043	0	0.021032	3.741653	0	0	0	0	0.023943	4.259587	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2024	HHDT	Aggregate	Aggregate	Natural Ga	171.2577	11229.14	11229.14	0	1352.875	0	0.825217	10.83035	0	0.002141	0.019848	0	0.009	0.049647	0.002329	0.021587	0	0.036	0.141848	1380.874	9009.978	0	1.351381	28.38005	0	0.2815	1.836743	0	0.042918	0.447167	0	0	0	0	1.406082	29.0114	0	0	0	0	0.831267	9.982727	65.61282	0	0	0	0
Sonoma	2024	LDA	Aggregate	Aggregate	Gasoline	140284	5304989	5304989	0	645118	0	0.052317	0	0.281941	0.00125	0	0.001998	0.002	0.003109	0.00136	0	0.002173	0.008	0.008882	279.0788	0	71.87062	0.002854	0	0.079694	0.005349	0	0.034745	0.011333	0	0.37321	0.102801	0.275207	1.638256	0.016537	0	0.408618	0.102801	0.275207	1.638256	0.034296	0.839731	0	3.645336	0.002759	0	0.000711
Sonoma	2024	LDA	Aggregate	Aggregate	Diesel	922.4281	27127.11	27127.11	0	3848.774	0	0.316542	0	0.021217	0	0	0	0.002	0.003175	0.022176	0	0	0.008	0.009071	241.4597	0	0	0.001636	0	0	0.035217	0	0	0.040093	0	0	0	0	0	0	0	0	0	0	0	0	0.0031	0.405291	0	0	0.002288	0	0
Sonoma	2024	LDA	Aggregate	Aggregate	Electricity	8159.075	387247	0	387247	40349.51	149509.3	0	0	0	0	0	0	0.002	0.001531	0	0	0	0.008	0.004375	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
Sonoma	2024	LDA	Aggregate	Aggregate	Plug-in Hyb	3637.796	166766	82861.11	83904.92	15042.29	25341.79	0.003438	0	0.117553	0.000623	0	0.002012	0.002	0.001449	0.000677	0	0.002188	0.008	0.00414	142.0154	0	65.86801	0.000466	0	0.043832	0.00062	0	0.022161	0.001478	0	0.1789	0.041577	0.038208	0.444471	0.002156	0	0.195873	0.041577	0.038208	0.444471	0.019278	0.220923	0	1.393458	0.001404	0	0.000651
Sonoma	2024	LDT1	Aggregate	Aggregate	Gasoline	18023.11	552905.4	552905.4	0	77083.14	0	0.194865	0	0.505278	0.002188	0	0.003388	0.002	0.003784	0.00238	0	0.003684	0.008	0.010811	336.55	0	93.30549	0.000293	0	0.140804	0.013106	0	0.044434	0.042673	0	0.766864	0.238553	0.71921	3.773489	0.062259	0	0.839618	0.238553	0.71921	3.773489	0.037068	1.981456	0	7.499655	0.003327	0	0.000922
Sonoma	2024	LDT1	Aggregate	Aggregate	Diesel	20.60225	244.6154	244.6154	0	58.14214	0	1.636843	0	0	0.246171	0	0	0.002	0.004256	0.257302	0	0	0.008	0.012159	422.3585	0	0	0.014377	0	0	0.066543	0	0	0.309523	0	0	0	0	0	0	0	0	0	0	0	0	0.0031	1.627624	0	0	0.004002	0	0
Sonoma	2024	LDT1	Aggregate	Aggregate	Electricity	35.63983	1465.823	0	1465.823	168.144	565.9287	0	0	0	0	0	0	0.002	0.001538	0	0	0	0.008	0.004393	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
Sonoma	2024	LDT1	Aggregate	Aggregate	Plug-in Hyb	13.64134	678.1406	303.6026	374.538	56.40696	113.1216	0.003097	0	0.117545	0.000385	0	0.001393	0.002	0.001453	0.000419	0	0.001515	0.008	0.00415	127.9709	0	71.52982	0.000418	0	0.043712	0.000555	0	0.021056	0.001332	0	0.178878	0.023998	0.021067	0.274527	0.001943	0	0.195849	0.023998	0.021067	0.274527	0.018803	0.199115	0	1.393249	0.001265	0	0.000707
Sonoma	2024	LDT2	Aggregate	Aggregate	Gasoline	68818.2	2551279	2551279	0	318009.1	0	0.086324	0	0.382873	0.001326	0	0.002056	0.002	0.003605	0.001442	0	0.002236	0.008	0.010299	347.9168	0	90.66289	0.00344	0	0.093686	0.006881	0	0.039889	0.014017	0	0.447511	0.097176	0.269155	1.619053	0.020454	0	0.489968	0.097176	0.269155	1.619053	0.035633	0.96156	0	4.255963	0.00344	0	0.000896
Sonoma	2024	LDT2	Aggregate	Aggregate	Diesel	298.8811	11433.07	11433.07	0	1399.326	0	0.063065	0	0	0.006168	0	0	0.002	0.003617	0.006447	0	0	0.008	0.010335	323.6061	0	0	0.000722	0	0	0.050984	0	0	0.015549	0	0	0	0	0	0	0.017701	0	0	0	0	0	0.0031	0.1571	0	0	0.003066	0	0
Sonoma	2024	LDT2	Aggregate	Aggregate	Electricity	315.211	11817.29	0	11817.29	1608.99	4562.451	0	0	0	0	0	0	0.002	0.001526	0	0	0	0.008	0.004359	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
Sonoma	2024	LDT2	Aggregate	Aggregate	Plug-in Hyb	431.6497	20544.47	9645.648	10898.83	1784.872	3291.77	0.003248	0	0.117545	0.000491	0	0.001693	0.002	0.001451	0.000535	0	0.001841	0.008	0.004145	134.2042	0	78.26704	0.000439	0	0.043732	0.000583	0	0.021074	0.001396	0	0.178878	0.025853	0.023854	0.303829	0.002038	0	0.195849	0.025853	0.023854	0.303829	0.019674	0.20882	0	1.393248	0.001327	0	0.000774
Sonoma	2024	LHDT1	Aggregate	Aggregate	Gasoline	8082.811	289644	289644	0	120421.8	0	0.268988	0.038318	0.670281	0.0019	0	0.000411	0.002	0.0273	0.002066	0	0.000447	0.008	0.078	909.4114	121.0914	26.04851	0.013118	0.116649	0.037152	0.014465	0.002997	0.051346	0.067245	0.438523	0.189505	0.060996	0.351825	3.572821	0.098123	0.639891	0.207484	0.060996	0.351825	3.572821	0.044853	1.587332	3.741131	3.136721	0.00899	0.001197	0.000258
Sonoma	2024	LHDT1	Aggregate	Aggregate	Diesel	8213.836	290995.1	290995.1	0	103319.7	0	2.513428	2.291347	0	0.050901	0.026946	0	0.003	0.0273	0.053202	0.028165	0	0.012	0.078	642.3917	136.6595	0	0.010859	0.005098	0	0.101209	0.021531	0	0.233791	0.10976	0	0	0	0	0.266156	0.124954	0	0	0	0	0.142603	0.702644	0.909745	0	0.006087	0.001295	0
Sonoma	2024	LHDT1	Aggregate	Aggregate	Electricity	14.0715	1093.441	0	1093.441	196.57	715.0156	0	0	0	0	0	0	0.002	0.001365	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
Sonoma	2024	LHDT2	Aggregate	Aggregate	Gasoline	1245.302	46513.27	46513.27	0	18553.14	0	0.165586	0.037406	0.644856	0.001371	0	0.000237	0.002	0.03185	0.001491	0	0.000258	0.008	0.091	996.3305	138.8077	25.63666	0.006534	0.117957	0.033234	0.009994	0.0031	0.051677	0.030855	0.428984	0.162329	0.042294	0.226336	2.421357	0.045024	0.625973	0.177729	0.042294	0.226336	2.421357	0.044972	0.944855	3.764715	3.083285	0.00985	0.001372	0.000253
Sonoma	2024	LHDT2	Aggregate	Aggregate	Diesel	2917.809	110729.5	110729.5	0	36702.36	0	1.647269	2.182286	0	0.040887	0.02672	0	0.003	0.03185	0.042736	0.027928	0	0.012	0.091	779.3962	215.8985	0	0.008786	0.005098	0	0.122794	0.034015	0	0.189148	0.10976	0	0	0	0	0.215332	0.124954	0	0	0	0	0.171008	0.52097	0.909745	0	0.007385	0.002046	0
Sonoma	2024	LHDT2	Aggregate	Aggregate	Electricity	3.642145	268.1505	0	268.1505	48.21097	172.66	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
Sonoma	2024	MCY	Aggregate	Aggregate	Gasoline	9945.696	53457.73	53457.73	0	19891.39	0	0.683414	0	0.176824	0.00187	0	0.003524	0.001	0.0042	0.001993	0	0.003735	0.004	0.012	192.1219	0	56.25802	0.200724	0	0.220225	0.044539	0	0.010054	1.386222	0	1.685032	3.55202	3.910604	4.895034	1.636862	0	1.830926	3.55202	3.910604	4.895034	0.008524	15.97023	0	8.756079	0.001899	0	0.000556
Sonoma	2024	MDV	Aggregate	Aggregate	Gasoline	47129.64	1652297	1652297	0	213400.9	0	0.127353	0	0.526478	0.00135	0	0.002241	0.002	0.003705	0.001468	0	0.002437	0.008	0.010587	425.4376	0	111.8727	0.004758	0	0.122775	0.00905	0	0.045764	0.020663	0	0.639832	0.123934	0.368907	2.13872	0.030136	0	0.700533	0.123934	0.368907	2.13872	0.035029	1.146297	0	4.88379	0.004206	0	0.001106
Sonoma	2024	MDV	Aggregate	Aggregate	Diesel	1017.345	37734.35	37734.35	0	4706.261	0	0.08223	0	0	0.007415	0	0	0.002	0.003719	0.00775	0	0	0.008	0.010625	422.7238	0	0	0.000703	0	0	0.0666	0	0	0.015129	0	0	0	0	0	0	0.017223	0	0	0	0	0	0.0031	0.246667	0	0	0.004006	0	0
Sonoma	2024	MDV	Aggregate	Aggregate	Electricity	336.2868	12653.18	0	12653.18	1718.806	4885.172	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
Sonoma	2024	MDV	Aggregate	Aggregate	Plug-in Hyb	291.6522	13545.32	6577.775	6967.549	1205.982	2104.408	0.00336	0	0.117551	0.000633	0	0.002113	0.002	0.00145	0.000689	0	0.002299	0.008	0.004144	138.8017	0	97.65693	0.000454	0	0.043786	0.000604	0	0.021121	0.001444	0	0.178893	0.031669	0.028155	0.349107	0.002108	0	0.195865	0.031669	0.028155	0.349107	0.020396	0.215941	0	1.393391	0.001372	0	0.000965
Sonoma	2024	MH	Aggregate	Aggregate	Gasoline	1113.896	9613.321	9613.321	0	111.4342	0	0.520865	0	0.432494	0.001775	0	0.000413	0.003	0.015758	0.00193	0	0.000449	0.012	0.045024	1948.651	0	31.90724	0.018343	0	0.038978	0.030171	0	0.043939	0.082191	0	0.167009	13.74302	0.328438	5.243128	0.119934	0	0.182854	13.74302	0.328438	5.243128	0.044787	2.017338	0	3.642321	0.019264	0	0.000315
Sonoma	2024	MH	Aggregate	Aggregate	Diesel	577.6919	5397.988	5397.988	0	57.76919	0	4.643384	0	0	0.120736	0	0	0.004	0.015668	0.126195	0	0	0.016	0.044799	1080.422	0	0	0.006366	0	0	0.170221	0	0	0.137067	0	0	0	0	0	0	0.156041	0	0	0	0	0	0.133498	0.467429	0	0	0.010238	0	0
Sonoma	2024	MHDT	Aggregate	Aggregate	Gasoline	646.6174	31951.97	31951.97	0	12937.52	0	0.5641	0.087987	0.440036	0.00147	0	0.000602	0.003	0.015757	0.001599	0	0.000655	0.012	0.045021	1801.526	535.9975	47.13884	0.018277	0.255712	0.048607	0.026263	0.007123	0.031656	0.092782	1.011968	0.275753	0.038456	0.321996	3.121864	0.135387	1.476662	0.301915	0.038456	0.321996	3.121864	0.044953	1.967229	15.31105	6.098532	0.01781	0.005299	0.000466
Sonoma	2024	MHDT	Aggregate	Aggregate	Diesel	5140.295	224256.9	224256.9	0	60492.94	0	1.135698	12.70178	1.702469	0.013059	0.030055	0	0.003	0.015841	0.01365	0.031414	0	0.012	0.04526	1136.212	2250.187	0	0.0013	0.011775	0	0.179011	0.354518	0	0.027997	0.253516	0	0	0	0	0.031872	0.288608	0	0	0	0	0.212621	0.110056	7.617781	0	0.010759	0.021308	0
Sonoma	2024	MHDT	Aggregate	Aggregate	Electricity	12.12558	648.3102	0	648.3102	149.1578	706.4402	0	0	0	0	0	0	0.003	0.00792	0	0	0	0.012	0.022628	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
Sonoma	2024	MHDT	Aggregate	Aggregate	Natural Ga	33.03412	1667.859	1667.859	0	347.4564	0	0.134524	5.994809	0	0.001102	0.016523	0	0.003	0.015896	0.001199	0.017797	0	0.012	0.045419	960.9456	4884.12	0	0.696297	16.04141	0	0.195895	0.99566	0	0.009949	0.2292	0	0	0	0	0.710622	16.37144	0	0	0	0	1.06	2.910031	31.59913	0	0	0	0
Sonoma	2024	OBUS	Aggregate	Aggregate	Gasoline	167.1966	7628.652	7628.652	0	3345.27	0	0.628615	0.064919	0.422292	0.001038	0	0.000317	0.003	0.015684	0.001129	0	0.000345	0.012	0.044811	1775.12	379.8341	32.19998	0.016157	0.193774	0.037707	0.02786	0.005233	0.030598	0.079758	0.744136	0.204104	0.035195	0.166816	3.022436	0.116382	1.085842	0.223469	0.035195	0.166816	3.022436	0.044974	1.772212	5.761782	4.323706	0.017549	0.003755	0.000318
Sonoma	2024	OBUS	Aggregate	Aggregate	Diesel	169.8632	12489.36	12489.36	0	1943.154	0	1.530294	11.39189	1.611163	0.030802	0.014417	0	0.003	0.019498	0.032195	0.015069	0	0.012	0.055707	1371.362	2385.042	0	0.002915	0.036798	0	0.216059	0.375764	0	0.062758	0.792256	0	0	0	0	0.071445	0.901923	0	0	0	0	0.214082	0.2015	12.39254	0	0.012986	0.022585	0
Sonoma	2024	OBUS	Aggregate	Aggregate	Electricity	0.21605	19.19194	0	19.19194	4.322737	21.26729	0	0	0	0	0	0	0.003	0.007843	0	0	0	0.012	0.022408	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
Sonoma	2024	OBUS	Aggregate	Aggregate	Natural Ga	1.146219	76.54844	76.54844	0	10.20135	0	0.186674	1.534396	0	0.00108	0.003971	0	0.003	0.016148	0.001175	0.004319	0	0.012	0.046137	1020.927	1214.117	0	0.79212	4.199637	0	0.208123	0.247506	0	0.011318	0.060005	0	0	0	0	0.808416	4.286038	0	0	0	0	1.06	3.260585	7.515352	0	0	0	0
Sonoma	2024	SBUS	Aggregate	Aggregate	Gasoline	60.18335	3134.506	3134.506	0	240.7334	0	0.217513	0.926391	0.727682	0.000805	0	0.000542	0.002	0.015721	0.000875	0	0.00059	0.008	0.044917	810.244	2591.316	55.88573	0.004015	2.507274	0.065376	0.016502	0.089878	0.070254	0.018449	10.63948	0.358983	0.090708	0.160025	1.111555	0.026921	15.5251	0.393041	0.090708	0.160025	1.111555	0.045	0.438725	82.22848	9.068189	0.00801	0.025618	0.000552
Sonoma	2024	SBUS	Aggregate	Aggregate	Diesel	395.7844	9082.046	9082.046	0	5730.958	0	3.624019	21.80504	0.461047	0.018976	0.017428	0	0.003	0.015721	0.019834	0.018216	0	0.012	0.044917	1170.823	2267.537	0	0.002859	0.008127	0	0.184464	0.357251	0	0.061545	0.174971	0	0	0	0	0.070065	0.199191	0	0	0	0	0.143132	0.184331	4.569413	0	0.011087	0.021472	0
Sonoma	2024	SBUS	Aggregate	Aggregate	Electricity	0.874713	25.42456	0	25.42456	11.42416	26.78365	0	0	0	0	0	0	0.002	0.002758	0.00786	0	0	0	0.011032	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
Sonoma	2024	SBUS	Aggregate	Aggregate	Natural Ga	27.30406	690.0046	690.0046	0	395.3628	0	0.644021	5.318822	0	0.003378	0.010214	0	0.003	0.015721	0.003674	0.011109	0	0.012	0.044917	1272.607	3948.877	0	3.643017	15.84838	0	0.259429	0.805004	0	0.052052	0.226442	0	0	0	0	3.717966	16.17444	0	0	0	0	1.06	12.62004	18.16945	0	0	0	0
Sonoma	2024	UBUS	Aggregate	Aggregate	Gasoline	49.15534	3632.14	3632.14	0	196.6214	0	0.093381	0	0.588913	0.001111	0	0.000335	0.002	0.002288	0.033765	0.001209	0	0.000364	0.009152	0.096472	1168.196	0	58.98479	0.002397	0	0.068502	0.009393	0	0.071842	0.007256	0	0.269888	0.043207	0.102047	0.498698	0.010587	0	0.295493	0.043207	0.102047	0.498698	0.045	0.507024	0	7.501409	0.011549	0	0.000583
Sonoma	2024	UBUS	Aggregate	Aggregate	Diesel	47.15633	4260.635	4260.635	0	188.6253	0	0.358846	0	0	0.006522	0	0	0.002	0.007779	0.0385	0.006816	0	0	0.031118	0.11	1172.051	0	0.003037	0	0	0.184657	0	0	0.065391	0	0	0	0	0	0.074442	0	0	0	0	0	0.22	0.073798	0	0	0.011106	0	0
Sonoma	2024	UBUS	Aggregate	Aggregate	Electricity	1.009351	26.88826	0	26.88826	4.037406	46.8728	0	0	0	0	0	0	0.003	0.01925	0	0	0	0.012	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
Sonoma	2024	UBUS	Aggregate	Aggregate	Natural Ga	41.95244	5308.66	5308.66	0	167.8098	0	0.424471	0	0	0.000158	0	0	0.008065	0.0385	0.000165	0	0	0.032259	0.11	1460.863	0	0	1.468537	0	0	0.297806	0	0	0.020982	0	0	0	0	0	1.49875	0	0	0	0	0	0.97	23.55344	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Sonoma
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_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
Sonoma	2030	HHDT	Aggregate	Aggregate	Gasoline	0.413995	42.11769	42.11769	0	8.283209	0	3.894982	0	0.013127	0.001645	0	0.000654	0.005	0.032961	0.00179	0	0.000711	0.02	0.094173	1980.532	0	49.57901	0.12306	0	0.000156	0.144233	0	0.000497	0.625235	0	0.000843	0.059411	0.544129	4.324643	0.912342	0	0.000923	0.059411	0.544129	4.324643	0.045	26.7312	0	4.140578	0.01958	0	0.00049
Sonoma	2030	HHDT	Aggregate	Aggregate	Diesel	2531.088	230058.1	230058.1	0	30502.97	0	1.797338	46.86979	2.913492	0.023188	0.023038	0	0.008471	0.027953	0.024237	0.02408	0	0.033884	0.07866	1557.17	8168.68	0	0.000778	0.174071	0	0.245333	1.286979	0	0.016748	3.747694	0	0	0	0	0.019067	4.266465	0	0	0	0	0.214858	0.078325	54.54121	0	0.014745	0.077353	0
Sonoma	2030	HHDT	Aggregate	Aggregate	Electricity	150.6212	14705.17	0	14705.17	1610.428	27319.99	0	0	0	0	0	0	0.008174	0.014886	0	0	0	0.032696	0.042533	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
Sonoma	2030	HHDT	Aggregate	Aggregate	Natural Ga	206.7115	12409.7	12409.7	0	1581.181	0	0.493118	9.197225	0	0.001758	0.021084	0	0.009	0.053724	0.001912	0.022931	0	0.036	0.153496	1323.966	8728.987	0	0.979602	23.63665	0	0.269899	1.779461	0	0.025336	0.356045	0	0	0	0	0.791639	8.864507	65.7216	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2030	LDA	Aggregate	Aggregate	Gasoline	142725.9	5430197	5430197	0	656692.8	0	0.031585	0	0.220415	0.000953	0	0.001593	0.002	0.003106	0.001036	0	0.001732	0.008	0.008875	253.5562	0	64.06943	0.001705	0	0.05686	0.004032	0	0.030321	0.006117	0	0.250385	0.07795	0.227958	1.368444	0.008926	0	0.27414	0.07795	0.227958	1.368444	0.038932	0.623267	0	2.644025	0.002507	0	0.000633
Sonoma	2030	LDA	Aggregate	Aggregate	Diesel	473.972	13717.09	13717.09	0	1994.109	0	0.155082	0	0	0.009189	0	0	0.002	0.003212	0.009605	0	0	0.008	0.009178	227.8699	0	0	0.000883	0	0	0.005931	0	0	0.019	0	0	0	0	0	0.021631	0	0	0	0	0	0.00031	0.311844	0	0	0.002159	0	0
Sonoma	2030	LDA	Aggregate	Aggregate	Electricity	13755.14	624521.5	0	624521.5	66276.01	241116.9	0	0	0	0	0	0	0.002	0.001535	0	0	0	0.008	0.004387	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
Sonoma	2030	LDA	Aggregate	Aggregate	Plug-in Hyb	5522.463	234980	105414.8	129565.2	22835.38	39132.55	0.003104	0	0.117546	0.000416	0	0.001528	0.002	0.001463	0.000452	0	0.001662	0.008	0.00418	128.2417	0	62.28463	0.000411	0	0.042883	0.000537	0	0.0203	0.001334	0	0.178881	0.041226	0.051809	0.522406	0.018297	0.199572	0	0.195852	0.041226	0.051809	0.522406	0.018297	0.199572	0	1.393277	0.001268	0	0.000616
Sonoma	2030	LDT1	Aggregate	Aggregate	Gasoline	13477.03	412493.8	412493.8	0	57417.71	0	0.105603	0	0.36813	0.001502	0	0.002447	0.002	0.003777	0.001613	0	0.002662	0.008	0.010792	309.7482	0	82.88501	0.00512	0	0.098471	0.008194	0	0.037704	0.022639	0	0.508741	0.183951	0.550875	3.055465	0.033034	0	0.557008	0.183951	0.550875	3.055465	0.038255	1.250444	0	5.034164	0.003062	0	0.000819
Sonoma	2030	LDT1	Aggregate	Aggregate	Diesel	0.058128	2.32042	2.32042	0	0.26867	0	0.092126	0	0	0.01286	0	0	0.002	0.003452	0.013442	0	0	0.008	0.009862	365.2716	0	0	0.001244	0	0	0.057549	0	0	0.026778	0	0	0	0	0	0.030485	0	0	0	0	0	0.00031	0.213074	0	0	0.003461	0	0
Sonoma	2030	LDT1	Aggregate	Aggregate	Electricity	85.45005	4055.881	0	4055.881	416.4733	1565.905	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
Sonoma	2030	LDT1	Aggregate	Aggregate	Plug-in Hyb	60.94763	2831.598	1171.787	1659.811	252.0184	501.3124	0.002863	0	0.117545	0.000247	0	0.000989	0.002	0.001464	0.000269	0	0.001075	0.008	0.004182	118.3043	0	67.8439	0.00038	0	0.04292	0.000496	0	0.020334	0.001231	0	0.178878	0.022869	0.020158	0.272167	0.001796	0	0.195849	0.022869	0.020158	0.272167	0.017381	0.184134	0	1.393247	0.00117	0	0.000671
Sonoma	2030	LDT2	Aggregate	Aggregate	Gasoline	69031.68	2525220	2525220	0	316825.8	0	0.051531	0	0.288183	0.001013	0	0.001668	0.002	0.00362	0.001102	0	0.001814	0.008	0.010344	315.5053	0	81.01569	0.00226	0	0.070142	0.005034	0	0.034674	0.008546	0	0.318482	0.079266	0.238575	1.444228	0.01247	0	0.348698	0.079266	0.238575	1.444228	0.039358	0.730668	0	3.22032	0.003119	0	0.000801
Sonoma	2030	LDT2	Aggregate	Aggregate	Diesel	284.4128	10395.67	10395.67	0	1310.497	0	0.038468	0	0	0.004576	0	0	0.002	0.003656	0.004783	0	0	0.008	0.010446	297.9877	0	0	0.000623	0	0	0.046948	0	0	0.013408	0	0	0	0	0	0.015264	0	0	0	0	0	0.00031	0.145602	0	0	0.002824	0	0
Sonoma	2030	LDT2	Aggregate	Aggregate	Electricity	1062.635	36824.85	0	36824.85	5285.132	14217.43	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
Sonoma	2030	LDT2	Aggregate	Aggregate	Plug-in Hyb	958.0116	41659.09	17857.07	23802.02	3961.378	7188.921	0.002965	0	0.117547	0.000317	0	0.001221	0.002	0.001464	0.000345	0	0.001328	0.008	0.004183	122.5422	0	74.46949	0.000392	0	0.042758	0.00051	0	0.020185	0.001275	0	0.178884	0.02676	0.026574	0.321313	0.00186	0	0.195855	0.02676	0.026574	0.321313	0.017992	0.190733	0	1.393304	0.001211	0	0.000736
Sonoma	2030	LHDT1	Aggregate	Aggregate	Gasoline	6521.007	229482.1	229482.1	0	9715.329	0	0.162587	0.034303	0.594743	0.001613	0	0.000302	0.002	0.0273	0.001754	0	0.000328	0.008	0.078	844.3063	116.9743	25.90841	0.00717	0.106961	0.031384	0.008862	0.002853	0.047908	0.034655	0.392875	0.156237	0.049559	0.298022	3.043991	0.050568	0.573282	0.17106	0.049559	0.298022	3.043991	0.045	1.077512	3.753036	3.235482	0.008347	0.001156	0.000256
Sonoma	2030	LHDT1	Aggregate	Aggregate	Diesel	6325.365	209752.3	209752.3	0	79565.13	0	1.756527	2.039396	0	0.041204	0.026148	0	0.003	0.0273	0.043067	0.02733	0	0.012	0.078	637.9858	132.4149	0	0.00876	0.005098	0	0.100515	0.020862	0	0.188607	0.10976	0	0	0	0	0.214716	0.124954	0	0	0	0	0.168471	0.556904	0.909745	0	0.006045	0.001255	0
Sonoma	2030	LHDT1	Aggregate	Aggregate	Electricity	401.741	25016.01	0	25016.01	5627.769	16370.01	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
Sonoma	2030	LHDT2	Aggregate	Aggregate	Gasoline	1003.491	34713.27	34713.27	0	14950.52	0	0.096868	0.034003	0.596175	0.001188	0	0.000159	0.002	0.03185	0.001292	0	0.000173	0.008	0.091	947.5211	135.3721	24.97448	0.003263	0.10822	0.028959	0.006348	0.002878	0.048574	0.013858	0.390299	0.138274	0.038137	0.220269	2.47219	0.020222	0.569523	0.151393	0.038137	0.220269	2.47219	0.045	0.689947	3.775156	3.087357	0.009367	0.001338	0.000247
Sonoma	2030	LHDT2	Aggregate	Aggregate	Diesel	2527.749	87158.93	87158.93	0	31795.9	0	1.262464	1.932125	0	0.035954	0.026901	0	0.003	0.03185	0.03758	0.028118	0	0.012	0.091	760.7058	209.4344	0	0.007537	0.005098	0	0.11985	0.032996	0	0.162272	0.10976	0	0	0	0	0.184736	0.124954	0	0	0	0	0.186844	0.45676	0.909745	0	0.007208	0.001984	0
Sonoma	2030	LHDT2	Aggregate	Aggregate	Electricity	101.4218	6044.223	0	6044.223	1344.994	3893.713	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
Sonoma	2030	MCY	Aggregate	Aggregate	Gasoline	8919.366	46274.62	46274.62	0	17838.73	0	0.599049	0	0.143541	0.001878	0	0.00315	0.001	0.0042	0.002009	0	0.003355	0.004	0.012	188.9008	0	50.69062	0.17227	0	0.192786	0.040918	0	0.00832	1.138941	0	1.452324	3.556898	3.992608	4.994778	1.369677	0	1.57884	3.556898	3.992608	4.994778	0.008794	13.62555	0	8.599194	0.001867	0	0.000501
Sonoma	2030	MDV	Aggregate	Aggregate	Gasoline	43637.17	1521765	1521765	0	196576.2	0	0.066456	0	0.358384	0.001026	0	0.001777	0.002	0.003699	0.001116	0	0.001933	0.008	0.010568	385.5154	0	100.2176	0.002763	0	0.085246	0.00583	0	0.037738	0.011132	0	0.418084	0.101245	0.318422	1.887922	0.016244	0	0.457749	0.101245	0.318422	1.887922	0.038657	0.807704	0	3.606472	0.003811	0	0.000991
Sonoma	2030	MDV	Aggregate	Aggregate	Diesel	825.7898	27286.55	27286.55	0	3695.515	0	0.045341	0	0	0.004648	0	0	0.002	0.003854	0.004859	0	0	0.008	0.011011	400.4868	0	0	0.000525	0	0	0.063097	0	0	0.011311	0	0	0	0	0	0.012877	0	0	0	0	0	0.00031	0.230823	0	0	0.003795	0	0
Sonoma	2030	MDV	Aggregate	Aggregate	Electricity	1060.895	36570.42	0	36570.42	5268.017	14119.2	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
Sonoma	2030	MDV	Aggregate	Aggregate	Plug-in Hyb	612.9674	26649.6	11517.12	15132.48	2534.62	4570.461	0.00299	0	0.117549	0.000356	0	0.001375	0.002	0.001465	0.000388	0	0.001495	0.008	0.004185	123.5422	0	91.41604	0.000396	0	0.042802	0.000515	0	0.020224	0.001285	0	0.178888	0.030271	0.032013	0.365898	0.001876	0	0.19586	0.030271	0.032013	0.365898	0.018151	0.192262	0	1.393342	0.001221	0	0.000904
Sonoma	2030	MH	Aggregate	Aggregate	Gasoline	749.2935	6715.176	6715.176	0	74.95932	0	0.294672	0	0.50334	0.00138	0	0.000323	0.003	0.015758	0.001501	0	0.000351	0.012	0.045023	1946.106	0	31.00569	0.0087	0	0.037225	0.020914	0	0.053775	0.032663	0	0.148981	10.10927	0.250437	4.261365	0.047662	0	0.163115	10.10927	0.250437	4.261365	0.045	0.569221	0	3.112292	0.019239	0	0.000307
Sonoma	2030	MH	Aggregate	Aggregate	Diesel	514.3636	4402.26	4402.26	0	514.3636	0	4.183013	0	0	0.101843	0	0	0.004	0.015679	0.106448	0	0	0.016	0.044799	1081.424	0	0	0.006018	0	0	0.170379	0	0	0.129568	0	0	0	0	0	0.147504	0	0	0	0	0	0.150223	0.435354	0	0	0.010247	0	0
Sonoma	2030	MHDT	Aggregate	Aggregate	Gasoline	521.4089	24569.24	24569.24	0	10432.35	0	0.268753	0.08113	0.37749	0.001358	0	0.000486	0.003	0.015758	0.001477	0	0.000528	0.012	0.045022	1720.172	517.8608	43.71408	0.008328	0.264577	0.043078	0.015078	0.006967	0.029787	0.039704	1.023973	0.230633	0.027057	0.228213	2.361834	0.057937	1.494179	0.252515	0.027057	0.228213	2.361834	0.045	0.771807	15.44658	4.875127	0.017006	0.00512	0.000432
Sonoma	2030	MHDT	Aggregate	Aggregate	Diesel	5349.171	21334.1.1	213341.1	0	63105.51	0	0.726654	11.28423	1.598915	0.006302	0.009065	0	0.003	0.015841	0.006587	0.009474	0	0.012	0.045259	1101.012	2150.762	0	0.000624	0.009093	0	0.173465	0.338853	0	0.013437	0.195778	0	0	0	0	0.015297	0.222878	0	0	0	0	0.217136	0.070484	7.517934	0	0.010426	0.020366	0
Sonoma	2030	MHDT	Aggregate	Aggregate	Electricity	425.7384	22068.39	0	22068.39	5208.828	23754.92	0	0	0	0	0	0	0.003	0.007914	0	0	0	0.012	0.022611	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
Sonoma	2030	MHDT	Aggregate	Aggregate	Natural Ga	51.88113	2273.593	2273.593	0	554.0146	0	0.097949	5.858532	0	0.001295	0.01839	0	0.003	0.015901	0.001408	0.020001	0	0.012	0.045432	937.1382	4870.323	0	0.72208	14.86182	0	0.191042	0.992847	0	0.010317	0.212346	0	0	0	0	0.736935	15.16758	0	0	0	0	1.06	2.898573	35.85688	0	0	0	0
Sonoma	2030	OBUS	Aggregate	Aggregate	Gasoline	128.416	4852.623	4852.623	0	2569.347	0	0.492217	0.060669	0.417217	0.001145	0	0.00033	0.003	0.015684	0.001245	0	0.000359	0.012	0.044812	1702.792	372.1376	31.35564	0.01176	0.189929	0.03656	0.021353	0.004705	0.029285	0.058564	0.744307	0.201266	0.038761	0.208544	3.745891	0.085457	1.086091	0.220361	0.038761	0.208544	3.745891	0.045	1.299439	5.762787	4.123097	0.016834	0.003679	0.00031
Sonoma	2030	OBUS	Aggregate	Aggregate	Diesel	191.8074	12613.93	12613.93	0	2232.53	0	1.278636	9.514459	1.453788	0.024297	0.00955	0	0.003	0.01994	0.025396	0.009982	0	0.012	0.056972	1285.671	2352.495	0	0.002243	0.038678	0	0.202558	0.370636	0	0.048287	0.832736	0	0	0	0	0.054971	0.948007	0	0	0	0	0.215498	0.161462	13.17564	0	0.012175	0.022277	0
Sonoma	2030	OBUS	Aggregate	Aggregate	Electricity	4.541431	376.7337	0	376.7337	90.86496	417.475	0	0	0	0	0	0	0.003	0.007843	0	0	0	0.012	0.022408	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
Sonoma	2030	OBUS	Aggregate	Aggregate	Natural Ga	1.836737	114.2093	114.2093	0	16.34696	0	0.105774	1.500808	0	0.001465	0.004772	0	0.003	0.016148	0.001594	0.00519	0	0.012	0.046137	942.9386	1181.93	0	0.836326	3.784927	0	0.192224	0.240944	0	0.011949	0.054079	0	0	0	0	0.853532	3.862796	0	0	0	0	1.06	3.379684	9.321763	0	0	0	0
Sonoma	2030	SBUS	Aggregate	Aggregate	Gasoline	65.12182	3395.691	3395.691	0	260.4873	0	0.219977	0.868542	0.852507	0.000838	0	0.00057	0.002	0.015721	0.000911	0	0.00062	0.008	0.044917	798.4079	2556.383	55.17101	0.003431	2.508051	0.069078	0.017082	0.081249	0.078222	0.015579	10.64152	0.378577	0.14454	0.404854	2.517257	0.022732	15.52808	0.414494	0.14454	0.404854	2.517257	0.045	0.379965	82.24088	8.943879	0.007893	0.025272	0.000545
Sonoma	2030	SBUS	Aggregate	Aggregate	Diesel	396.9095	8624.815	8624.815	0	5747.25	0	2.567954	18.52061	0.514688	0.014637	0.011241	0	0.003	0.015721	0.015299	0.01175	0	0.012	0.044917	1145.501	2202.648	0	0.002428	0.008039	0	0.180474	0.347028	0	0.052268	0.173088	0	0	0	0	0.059504	0.197047	0	0	0	0	0.164826	0.16313	5.167433	0	0.010847	0.020858	0
Sonoma	2030	SBUS	Aggregate	Aggregate	Electricity	19.89124	588.3571	0	588.3571	264.8425	619.8081	0	0	0	0	0	0	0.002	0.002804	0.00786	0	0	0	0.011217	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
Sonoma	2030	SBUS	Aggregate	Aggregate	Natural Ga	29.87439	693.279	693.279	0	432.5812	0	0.589197	5.287795	0	0.003378	0.010954	0	0.003	0.015721	0.003674	0.011914	0	0.012	0.044917	1247.825	3977.009	0	3.492392	15.4653	0	0.254377	0.810739	0	0.049899	0.220969	0	0	0	0	3.564242	15.78348	0	0	0	0	1.06	11.91122	19.83808	0	0	0	0
Sonoma	2030	UBUS	Aggregate	Aggregate	Gasoline	48.69525	3527.976	3527.976	0	194.781	0	0.072783	0	0.480798	0.001212	0	0.000345	0.002	0.035539	0.001318	0	0.000375	0.009016	0.095826	1105.925	0	55.60481	0.00194	0	0.059744	0.007788	0	0.061083	0.005777	0	0.232539	0.027469	0.099548	0.385851	0.00843	0	0.254601	0.027469	0.099548	0.385851	0.045	0.50214	0	7.124608	0.010933	0	0.00055
Sonoma	2030	UBUS	Aggregate	Aggregate	Diesel	56.14719	5633.031	5633.031	0	224.5888	0	0.377226	0	0	0.006857	0	0	0.002	0.008129	0.0285	0.007168	0	0	0.032514	0.11	1195.998	0	0	0.003156	0	0	0.18843	0	0	0.06795	0	0	0	0	0	0.077356	0	0	0	0	0.22	0.077533	0	0	0.011333	0	0	0
Sonoma	2030	UBUS	Aggregate	Aggregate	Electricity	14.65998	1857.657	0	1857.657	58.63992	3238.35	0	0	0	0	0	0	0.002	0.006942	0.01925	0	0	0	0.027769	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
Sonoma	2030	UBUS	Aggregate	Aggregate	Natural Ga	22.23797	2443.971	2443.971	0	88.9519	0	0.13016	0	0	0.000246	0	0	0.002	0.007859	0.0385	0.000257	0	0	0.031435	0.11	1309.397	0	0	3.516398	0	0	0.266929	0	0	0.050242	0	0	0	0	0	3.588742	0	0	0	0	0.97	41.82134	0	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Sonoma
Calendar Year: 2035
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_STI	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PM	PM10_PM	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
Sonoma	2035	HHDT	Aggregate	Aggregate	Gasoline	0.331887	42.69905	42.69905	0	6.640396	0	2.686612	0	0.001423	0.001435	0	0.000498	0.005	0.032762	0.001561	0	0.000541	0.02	0.093604	1883.887	0	45.87251	0.09979	0	0.000109	0.118989	0	8.41E-05	0.46982	0	0.000584	0.013906	0.134053	1.336953	0.68556	0	0.00064	0.013906	0.134053	1.336953	0.045	29.99577	0	5.174616	0.018624	0	0.000453
Sonoma	2035	HHDT	Aggregate	Aggregate	Diesel	2441.573	222666.1	222666.1	0	30157.16	0	1.59203	47.67086	2.838248	0.02274	0.01913	0	0.008518	0.028456	0.023768	0.019995	0	0.034073	0.081303	1455.132	8000.892	0	0.000662	0.180855	0	0.229257	1.260544	0	0.014261	1.893764	0	0	0	0	0.016235	4.432753	0	0	0	0	0	0.216893	0.066553	57.13063	0	0.013779	0.075764	0	0
Sonoma	2035	HHDT	Aggregate	Aggregate	Electricity	422.3545	38691.31	0	38691.31	4353.87	71924.69	0	0	0	0	0	0	0.008136	0.015115	0	0	0	0	0	0	0	0	0	0	0	0	0	0.032545	0.043185	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2035	HHDT	Aggregate	Aggregate	Natural Ga	204.7741	11885.08	11885.08	0	1546.135	0	0.367239	8.254019	0	0.001653	0.022338	0	0.009	0.055644	0.001798	0.024295	0	0.036	0.158982	1291.007	8608.482	0	0.784911	20.85329	0	0.26318	1.754895	0	0.018973	0.310072	0	0	0	0	0.809898	21.29612	0	0	0	0	0	0.774165	8.264341	66.30839	0	0	0	0	0
Sonoma	2035	LDA	Aggregate	Aggregate	Gasoline	144535.7	5480099	5480099	0	665051.5	0	0.025569	0	0.19674	0.000711	0	0.001204	0.002	0.003129	0.000773	0	0.00131	0.008	0.008939	241.532	0	59.97337	0.001329	0	0.045217	0.00364	0	0.028432	0.004408	0	0.19023	0.060925	0.207146	1.251169	0.006431	0	0.208278	0.060925	0.207146	1.251169	0.040948	0.550875	0	2.179073	0.002388	0	0.000593
Sonoma	2035	LDA	Aggregate	Aggregate	Diesel	265.9231	7202.298	7202.298	0	1091.806	0	0.116815	0	0	0.006449	0	0	0.002	0.003228	0.00674	0	0	0.008	0.009222	217.4924	0	0	0.000674	0	0	0.034266	0	0	0.014519	0	0	0	0	0	0.016529	0	0	0	0	0	0.0031	0.274476	0	0	0.002061	0	0
Sonoma	2035	LDA	Aggregate	Aggregate	Electricity	17143.71	736781.6	0	736781.6	81206.39	2844585	0	0	0	0	0	0	0.002	0.001537	0	0	0	0.008	0.004392	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
Sonoma	2035	LDA	Aggregate	Aggregate	Plug-in Hyb	6390.078	257409.2	109853	147556.2	2642.297	44566.38	0.002969	0	0.117538	0.000302	0	0.001195	0.002	0.001473	0.000328	0	0.0013	0.008	0.004208	122.5562	0	60.37418	0.000391	0	0.042287	0.000502	0	0.019756	0.001283	0	0.17886	0.04211	0.075243	0.707406	0.017741	0.191208	0	0.195829	0.04211	0.075243	0.707406	0.017741	0.191208	0	1.393078	0.001212	0	0.000597
Sonoma	2035	LDT1	Aggregate	Aggregate	Gasoline	10947.04	342790.8	342790.8	0	47061.14	0	0.057069	0	0.281348	0.001007	0	0.001728	0.002	0.003767	0.001095	0	0.001879	0.008	0.010762	291.3002	0	75.30801	0.00296	0	0.070569	0.005555	0	0.033302	0.012215	0	0.341572	0.137516	0.461317	2.688042	0.017824	0	0.373978	0.137516	0.461317	2.688042	0.039683	0.856288	0	3.416329	0.00288	0	0.000744
Sonoma	2035	LDT1	Aggregate	Aggregate	Diesel	0.069009	2.795053	2.795053	0	0.330278	0	0.032582	0	0	0.004216	0	0	0.002	0.003545	0.004407	0	0	0.008	0.010129	359.0996	0	0	0.000616	0	0	0.056576	0	0	0.013265	0	0	0	0	0	0.015102	0	0	0	0	0	0.0031	0.131308	0	0	0.003403	0	0
Sonoma	2035	LDT1	Aggregate	Aggregate	Electricity	143.7102	6680.291	0	6680.291	697.4347	2579.144	0	0	0	0	0	0	0.002	0.001534	0	0	0	0.008	0.004382	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
Sonoma	2035	LDT1	Aggregate	Aggregate	Plug-in Hyb	108.583	4702.758	1925.445	2777.313	448.9908	838.8312	0.002848	0	0.117544	0.000209	0	0.000843	0.002	0.001472	0.000227	0	0.000917	0.008	0.004205	117.582	0	67.21236	0.000376	0	0.042459	0.000485	0	0.019911	0.001231	0	0.178876	0.024534	0.025197	0.319554	0.001796	0	0.195847	0.024534	0.025197	0.319554	0.017196	0.183464	0	1.393228	0.001162	0	0.000664
Sonoma	2035	LDT2	Aggregate	Aggregate	Gasoline	68045.19	2467467	2467467	0	311457.3	0	0.036936	0	0.250481	0.000747	0	0.001259	0.002	0.003649	0.000812	0	0.001369	0.008	0.010427	299.7736	0	75.7819	0.001773	0	0.056905	0.004254	0	0.032786	0.006216	0	0.247299	0.065042	0.225319	1.36915	0.00907	0	0.270761	0.065042	0.225319	1.36915	0.040903	0.64605	0	2.707277	0.002964	0	0.000749
Sonoma	2035	LDT2	Aggregate	Aggregate	Diesel	265.1705	9618.75	9618.75	0	1217.426	0	0.033734	0	0	0.004341	0	0	0.002	0.003663	0.004537	0	0	0.008	0.010464	282.5441	0	0	0.00062	0	0	0.044515	0	0	0.013339	0	0	0	0	0	0.015185	0	0	0	0	0	0.0031	0.143429	0	0	0.002677	0	0
Sonoma	2035	LDT2	Aggregate	Aggregate	Electricity	1736.702	56059.48	0	56059.48	8452.607	21643.59	0	0	0	0	0	0	0.002	0.001534	0	0	0	0.008	0.004384	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
Sonoma	2035	LDT2	Aggregate	Aggregate	Plug-in Hyb	1348.551	54888.1	22852.15	32035.95	5576.258	9675.812	0.002897	0	0.117547	0.000246	0	0.000985	0.002	0.001473	0.000267	0	0.001072	0.008	0.004208	119.567	0	73.10489	0.000381	0	0.042217	0.000488	0	0.019689	0.001252	0	0.178883	0.029066	0.037475	0.417143	0.001826	0	0.195854	0.029066	0.037475	0.417143	0.017483	0.186561	0	1.393292	0.001182	0	0.000723
Sonoma	2035	LHDT1	Aggregate	Aggregate	Gasoline	5296.13	180230.5	180230.5	0	78904.45	0	0.10382	0.031454	0.542357	0.001334	0	0.00018	0.002	0.0273	0.001451	0	0.000196	0.008	0.078	809.5084	114.0669	25.47406	0.003644	0.099772	0.028202	0.005877	0.002715	0.045265	0.015888	0.360781	0.136821	0.040535	0.264019	2.816761	0.023184	0.526451	0.149802	0.040535	0.264019	2.816761	0.045	0.753811	3.767693	3.250124	0.008003	0.001128	0.000252
Sonoma	2035	LHDT1	Aggregate	Aggregate	Diesel	4872.335	153408.1	153408.1	0	61287.85	0	1.256701	1.821318	0	0.034758	0.025896	0	0.003	0.0273	0.03633	0.027067	0	0.012	0.078	632.2789	128.8097	0	0.007304	0.005098	0	0.099616	0.020294	0	0.157246	0.10976	0	0	0	0	0.179014	0.124954	0	0	0	0	0	0.185422	0.458417	0.909745	0	0.005991	0.001221	0	0
Sonoma	2035	LHDT1	Aggregate	Aggregate	Electricity	1227.461	68816.98	0	68816.98	17204.53	45039.56	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	0
Sonoma	2035	LHDT2	Aggregate	Aggregate	Gasoline	794.7285	25984.88	25984.88	0	11840.27	0	0.062128	0.031158	0.550094	0.001115	0	0.000115	0.002	0.03185	0.001212	0	0.000125	0.008	0.091	914.5071	132.565	24.57299	0.002018	0.099879	0.025913	0.004411	0.002683	0.045684	0.007725	0.35779	0.121657	0.036829	0.249729	2.839688	0.011272	0.522086	0.133199	0.036829	0.249729	2.839688	0.045	0.620435	3.779282	3.164524	0.009041	0.001311	0.000243
Sonoma	2035	LHDT2	Aggregate	Aggregate	Diesel	2119.081	67875.32	67875.32	0	26655.37	0	1.067351	1.750482	0	0.032965	0.026266	0	0.003	0.03185	0.034455	0.027452	0	0.012	0.091	747.0979	205.27	0	0.00696	0.005098	0	0.117706	0.03234	0	0.149843	0.10976	0	0	0	0	0.170586	0.124954	0	0	0	0	0	0.194865	0.426997	0.909745	0	0.007079	0.001945	0	0
Sonoma	2035	LHDT2	Aggregate	Aggregate	Electricity	307.2582	16566.3	0	16566.3	4071.637	10670.3	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	0
Sonoma	2035	MCY	Aggregate	Aggregate	Gasoline	8323.788	42673.32	42673.32	0	16647.58	0	0.552145	0	0.121609	0.001936	0	0.003047	0.001	0.0042	0.002074	0	0.003255	0.004	0.012	187.49	0	46.97831	0.157319	0	0.175611	0.03893	0	0.007176	1.006608	0	1.307965	3.551763	3.993364	4.774606	1.226843	0	1.422483	3.551763	3.993364	4.774606	0.008946	12.31408	0	8.506875	0.001854	0	0.000464
Sonoma	2035	MDV	Aggregate	Aggregate	Gasoline	41745.42	1452157	1452157	0	187821.1	0	0.045571	0	0.297574	0.000773	0	0.001365	0.002	0.003717	0.000841	0	0.001484	0.008	0.010619	365.2576	0	93.53515	0.002068	0	0.066847	0.004708	0	0.035039	0.007729	0	0.312169	0.083898	0.294276	1.769724	0.011278	0	0.341786	0.083898	0.294276	1.769724	0.040519	0.695393	0	2.993264	0.003611	0	0.000925
Sonoma	2035	MDV	Aggregate	Aggregate	Diesel	664.4499	20867.79	20867.79	0	2914.769	0	0.031037	0	0	0.003327	0	0	0.002	0.003862	0.003477	0	0	0.008	0.011033	381.0659	0	0	0.000422	0	0	0.060037	0	0	0.00909	0	0	0	0	0	0.010348	0	0	0	0	0	0.0031	0.20954	0	0	0.003611	0	0
Sonoma	2035	MDV	Aggregate	Aggregate	Electricity	1640.089	52485.94	0	52485.94	7960.463	20263.91	0	0	0	0	0	0	0.002	0.001536	0	0	0	0.008	0.004389	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
Sonoma	2035	MDV	Aggregate	Aggregate	Plug-in Hyb	846.8764	34574.81	14440.85	20133.95	3501.834	6081.054	0.002906	0	0.117547	0.000261	0	0.001063	0.002	0.001474	0.000284	0	0.001156	0.008	0.00421	119.942	0	89.33623	0.000382	0	0.042245	0.00049	0	0.019715	0.001256	0	0.178885	0.031938	0.045295	0.47482	0.001832	0	0.195856	0.031938	0.045295	0.47482	0.017542	0.187119	0	1.39331	0.001186	0	0.000883
Sonoma	2035	MH	Aggregate	Aggregate	Gasoline	566.4339	5394.972	5394.972	0	56.66604	0	0.183952	0	0.534082	0.001286	0	0.000308	0.003	0.015758	0.001399	0	0.000334	0.012	0.045023	1945.599	0	30.48585	0.005655	0	0.035761	0.016143	0	0.058608	0.018839	0	0.136181	7.333014	0.196609	3.527414	0.02749	0	0.149101	7.333014	0.196609	3.527414	0.045	0.302835	0	2.81176	0.019234	0	0.000301
Sonoma	2035	MH	Aggregate	Aggregate	Diesel	457.092	3786.929	3786.929	0	45.7092	0	3.716725	0	0	0.082428	0	0	0.004	0.015679	0.086155	0	0	0.016	0.044798	1083.018	0	0	0.005559	0	0	0.17063	0	0	0.119672	0	0	0	0	0	0.136239	0	0	0	0	0	0.166593	0.393658	0	0	0.010262	0	0
Sonoma	2035	MHDT	Aggregate	Aggregate	Gasoline	408.2069	17927.57	17927.57	0	8167.404	0	0.172433	0.075523	0.359008	0.001346	0	0.000451	0.003	0.015758	0.001464	0	0.00049	0.012	0.045024	1659.219	502.6629	41.5279	0.005446	0.265812	0.040925	0.011486	0.006613	0.028894	0.024382	1.029773	0.212804	0.022794	0.223461	2.396	0.035578	1.502642	0.232994	0.022794	0.223461	2.396	0.045	0.434397	15.53128	4.227539	0.016403	0.004969	0.000411
Sonoma	2035	MHDT	Aggregate	Aggregate	Diesel	4826.413	184522.9	184522.9	0	56934.16	0	0.5567	10.82674	1.474068	0.004373	0.004417	0	0.003	0.015839	0.004571	0.004617	0	0.012	0.045254	1068.121	2074.845	0	0.000429	0.008535	0	0.168283	0.326893	0	0.009233	0.183754	0	0	0	0	0.010511	0.20919	0	0	0	0	0	0.218627	0.058339	7.528573	0	0.010114	0.019648	0	0
Sonoma	2035	MHDT	Aggregate	Aggregate	Electricity	1271.567	63899.84	0	63899.84	15592.85	68687.5	0	0	0	0	0	0	0.003	0.007917	0	0	0	0.012	0.02262	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
Sonoma	2035	MHDT	Aggregate	Aggregate	Natural Ga	58.91006	2379.868	2379.868	0	635.3494	0	0.084536	5.787673	0	0.001362	0.019077	0	0.003	0.015897	0.001481	0.020748	0	0.012	0.04542	927.5209	4854.1	0	0.729032	14.35148	0	0.189081	0.98954	0	0.010416	0.205054	0	0	0	0	0.744031	14.64673	0	0	0	0	0	1.06	2.890536	37.44184	0	0	0	0	0
Sonoma	2035	OBUS	Aggregate	Aggregate	Gasoline	99.94999	3209.942	3209.942	0	1999.799	0	0.33815	0.058108	0.391835	0.001163	0	0.000295	0.003	0.015685	0.001265	0	0.00032	0.012	0.044814	1650.48	366.9921	30.94249	0.00949	0.186166	0.035426	0.016786	0.004337	0.02693	0.046158	0.747021	0.197045	0.03794	0.222451	4.120222	0.067353	1.090051	0.21574	0.03794	0.222451	4.120222	0.045	1.016029	5.778991	4.090798	0.016317	0.003628	0.000306
Sonoma	2035	OBUS	Aggregate	Aggregate	Diesel	193.3933	12676.57	12676.57	0	2249.765	0	1.062033	7.932361	1.264694	0.019383	0.007029	0	0.003	0.020299	0.020259	0.007346	0	0.012	0.057997	1249.811	2234.283	0	0.001715	0.03825	0	0.196908	0.352012	0	0.036934	0.823502	0	0	0	0	0.042046	0.937494	0	0	0	0	0	0.216568	0.133173	13.14832	0	0.011835	0.021157	0	0
Sonoma	2035	OBUS	Aggregate	Aggregate	Electricity	12.46484	967.343	0	967.343	249.3965	1071.957	0	0	0	0	0	0	0.003	0.007843	0	0	0	0.012	0.022408	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
Sonoma	2035	OBUS	Aggregate	Aggregate	Natural Ga	2.159712	126.7023	126.7023	0	19.22143	0	0.093831	1.491848	0	0.001522	0.004986	0	0.003	0.016148	0.001656	0.005423	0	0.012	0.046137	919.3585	1166.184	0	0.842852	3.674309	0	0.187417	0.237734	0	0.012043	0.052499	0	0	0	0	0.860193	3.749902	0	0	0	0	0	1.06	3.397266	9.803599	0	0	0	0	0
Sonoma	2035	SBUS	Aggregate	Aggregate	Gasoline	64.48937	3340.082	3340.082	0	257.9575	0	0.191811	0.844127	0.945818	0.000862	0	0.000586	0.002	0.015721	0.000937	0	0.000637	0.008	0.044917	790.3065	2533.177	54.44349	0.002339	2.508142	0.071848	0.016268	0.077816	0.08427	0.010186	10.64152	0.392312	0.202088	0.778996	4.623051	0.014863	15.52808	0.429532	0.202088	0.778996	4.623051	0.045	0.247335	82.24088	8.700292	0.007813	0.025043	0.000538
Sonoma	2035	SBUS	Aggregate	Aggregate	Diesel	364.6717	7595.366	7595.366	0	5280.447	0	1.531316	14.63441	0.580604	0.009803	0.006055	0	0.003	0.015721	0.010246	0.006329	0	0.012	0.044917	1122.427	2124.752	0	0.001773	0.008117	0	0.176839	0.334755	0	0.038166	0.174754	0	0	0	0	0.043449	0.198944	0	0	0	0	0	0.185887	0.128818	5.853395	0	0.010629	0.02012	0	0
Sonoma	2035	SBUS	Aggregate	Aggregate	Electricity	64.03198	1861.509	0	1861.509	861.369	1961.017	0	0	0	0	0	0	0.002	0.002825	0.00786	0	0	0	0.011301	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	0
Sonoma	2035	SBUS	Aggregate	Aggregate	Natural Ga	31.10612	659.7798	659.7798	0	450.4165	0	0.553505	5.27041	0	0.003378	0.011369	0	0.003	0.015721	0.003674	0.012365	0	0.012	0.044917	1231.434	3991.889	0	3.394334	15.25066	0	0.251036	0.813773	0	0.048498	0.217902	0	0	0	0	3.464167	15.56442	0	0	0	0	0	1.06	11.44977	20.77303	0	0	0	0	0
Sonoma	2035	UBUS	Aggregate	Aggregate	Gasoline	43.0067	3224.208	3224.208	0	172.0268	0	0.067195	0	0.403518	0.001207	0	0.00024	0.002	0.002172	0.032993	0.001313	0	0.000261	0.008687	0.094266	1017.668	0	45.5078	0.00181	0	0.046107	0.007095	0	0.055763	0.005211	0	0.173323	0.025666	0.102443	0.378867	0.007604	0	0.189767	0.025666	0.102443	0.378867	0.045	0.544269	0	6.869053	0.010061	0	0.00045
Sonoma	2035	UBUS	Aggregate	Aggregate	Diesel	39.12873	4283.431	4283.431	0	156.5149	0	0.385163	0	0	0.007003	0	0	0.002	0.008279	0.0385	0.007319	0	0	0.033117	0.11	1195.274	0	0	0.003207	0	0	0.188316	0	0	0.069055	0	0	0	0	0	0.078614	0	0	0	0	0	0.22	0.079146	0	0	0.011326	0	0
Sonoma	2035	UBUS	Aggregate	Aggregate	Electricity	45.85043	4419.498	0	4419.498	183.4017	7704.263	0	0	0	0	0	0	0.006854	0.01925	0	0	0	0.027417	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	0
Sonoma	2035	UBUS	Aggregate	Aggregate	Natural Ga	15.81032	1730.759	1730.759	0	63.24127	0	0.059521	0	0	0.000284	0	0	0.008279	0.0385	0.000297	0	0	0.033117	0.11	1307.095	0	0	4.27758	0	0	0.26646	0	0	0.061118	0	0	0	0	0	4.365584	0	0	0	0	0	0.97	49.60134	0	0	0	0	0

Season	EmissionTy	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004397	0.002928	0.010223	0.177848	0.008196	0	0	0.092003	0
A	CH4_RUNE	0.002593	0.00926	0.003388	0.0046	0.011963	0.008106	0.007879	0.063776	0.010898	0.590975	0.200724	0.197359	0.014036
A	CH4_STREX	0.073928	0.140322	0.092537	0.118776	0.019978	0.011159	0.008506	7.20E-08	0.023787	0.024177	0.220225	0.002467	0.02567
A	CO_IDLEX	0	0	0	0	0.168401	0.132886	0.67772	4.651055	0.580244	0	0	1.137166	0
A	CO_RUNEX	0.764951	1.973893	0.947677	1.110723	1.141808	0.645257	0.357378	0.58844	0.805679	9.615219	15.97023	0.909155	1.460002
A	CO_STREX	3.368502	7.473267	4.200471	4.722781	1.68676	1.035275	1.067266	0.00142	2.727533	2.647556	8.756079	0.342247	2.398764
A	CO2_NBIO_	0	0	0	0	9.383208	14.52901	163.3306	764.9807	88.63551	0	0	182.0544	0
A	CO2_NBIO_	256.6616	335.4447	344.5335	419.9791	774.1331	842.1304	1214.46	1689.085	1521.111	1284.513	192.1219	1086.553	1636.44
A	CO2_NBIO_	67.23257	93.01671	89.74943	108.5432	14.00748	8.608021	8.249476	0.054931	20.31278	20.81816	56.25802	2.109212	21.01351
A	NOX_IDLEX	0	0	0	0	0.085427	0.11608	0.886628	3.948067	0.367282	0	0	1.384511	0
A	NOX_RUNE	0.048708	0.194752	0.085171	0.124443	1.391199	1.206921	1.055745	2.17474	1.18346	0.311563	0.683414	2.632209	2.003301
A	NOX_STRE	0.260738	0.503517	0.377838	0.508943	0.360441	0.216523	1.470102	2.752382	0.856772	0.207852	0.176824	0.441707	0.284832
A	PM10_IDLE	0	0	0	0	0.001033	0.001475	0.002192	0.003065	0.000484	0	0	0.001178	0
A	PM10_PMI	0.008452	0.010786	0.010223	0.010491	0.077927	0.090923	0.045174	0.08152	0.051527	0.106341	0.012	0.044873	0.044943
A	PM10_PM	0.008	0.008	0.008	0.008	0.010001	0.010812	0.012	0.033894	0.012	0.025542	0.004	0.011029	0.013438
A	PM10_RUN	0.001347	0.002483	0.00145	0.001589	0.027642	0.030484	0.012046	0.024451	0.020323	0.002594	0.001993	0.014338	0.046615
A	PM10_STR	0.002037	0.003672	0.002213	0.002366	0.000241	8.67E-05	0.000115	2.38E-06	0.000218	0.000128	0.003735	2.23E-05	0.000295
A	PM25_IDLE	0	0	0	0	0.000988	0.001411	0.002097	0.002927	0.000463	0	0	0.001125	0
A	PM25_PMI	0.002958	0.003775	0.003578	0.003672	0.027274	0.031823	0.015811	0.028532	0.018034	0.037219	0.0042	0.015706	0.01573
A	PM25_PM	0.002	0.002	0.002	0.002	0.0025	0.002703	0.003	0.008474	0.003	0.006386	0.001	0.002757	0.00336
A	PM25_RUN	0.001242	0.002288	0.001334	0.001468	0.026408	0.029149	0.011517	0.023389	0.019427	0.002469	0.00187	0.013702	0.044552
A	PM25_STR	0.001873	0.003376	0.002035	0.002175	0.000221	7.97E-05	0.000105	2.19E-06	0.0002	0.000118	0.003524	2.05E-05	0.000272
A	ROG_DIUR	0.32858	0.879119	0.345572	0.45649	0.128957	0.05457	0.027306	0.00052	0.095294	0.044003	4.895034	0.010488	34.51645
A	ROG_HTSK	0.095043	0.237699	0.095876	0.119828	0.0328	0.014201	0.00673	0.000148	0.022202	0.015249	3.55202	0.003423	9.050894
A	ROG_IDLEX	0	0	0	0	0.019854	0.015464	0.026581	0.301914	0.048852	0	0	0.112214	0
A	ROG_REST	0.32858	0.879119	0.345572	0.45649	0.128957	0.05457	0.027306	0.00052	0.095294	0.044003	4.895034	0.010488	34.51645
A	ROG_RUNE	0.010418	0.042627	0.01386	0.020237	0.150428	0.142081	0.035817	0.02278	0.068919	0.031474	1.386222	0.050472	0.101924
A	ROG_RUNL	0.252876	0.716597	0.265291	0.356324	0.189193	0.075997	0.05635	0.001356	0.105233	0.036016	3.910604	0.00604	0.216303
A	ROG_STRE	0.345641	0.764193	0.441855	0.618718	0.101906	0.054505	0.048258	3.91E-07	0.128756	0.095255	1.685032	0.013549	0.109989
A	SO2_IDLEX	0	0	0	0	9.07E-05	0.000139	0.001528	0.006751	0.000842	0	0	0.001574	0
A	SO2_RUNE	0.002537	0.003316	0.003405	0.004148	0.007521	0.0081	0.011534	0.015388	0.014647	0.006748	0.001899	0.009728	0.016018
A	SO2_STREX	0.000665	0.00092	0.000887	0.001073	0.000138	8.51E-05	8.16E-05	5.43E-07	0.000201	0.000206	0.000556	2.09E-05	0.000208
A	TOG_DIUR	0.32858	0.879119	0.345572	0.45649	0.128957	0.05457	0.027306	0.00052	0.095294	0.044003	0.146997	0.010488	34.51645
A	TOG_HTSK	0.095043	0.237699	0.095876	0.119828	0.0328	0.014201	0.00673	0.000148	0.022202	0.015249	3.55202	0.003423	9.050894
A	TOG_IDLEX	0	0	0	0	0.027679	0.020706	0.040299	0.508357	0.064052	0	0	0.228082	0
A	TOG_RESTI	0.32858	0.879119	0.345572	0.45649	0.128957	0.05457	0.027306	0.00052	0.095294	0.044003	0.146997	0.010488	34.51645
A	TOG_RUNE	0.01515	0.062149	0.020203	0.029409	0.181992	0.164673	0.048965	0.089182	0.091127	0.628347	1.636862	0.254109	0.132918
A	TOG_RUNL	0.252876	0.716597	0.265291	0.356324	0.189193	0.075997	0.05635	0.001356	0.105233	0.036016	3.910604	0.00604	0.216303
A	TOG_STRE	0.378434	0.836693	0.483775	0.677416	0.111574	0.059676	0.052836	4.28E-07	0.140971	0.104292	1.830926	0.014834	0.120424
A	N2O_IDLEX	0	0	0	0	0.000898	0.001866	0.025158	0.122933	0.012255	0	0	0.026461	0
A	N2O_RUNE	0.005014	0.01308	0.006994	0.010182	0.057829	0.089275	0.159792	0.269083	0.144798	0.181567	0.044539	0.14739	0.080532
A	N2O_STRE	0.032275	0.044194	0.039413	0.0443	0.027611	0.017352	0.00554	3.39E-05	0.019302	0.025356	0.010054	0.002652	0.028937

FleetMixLa	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartment	0.486165	0.045865	0.21434	0.141752	0.048048	0.01301	0.021353	0.019982	0.00167	0.001093	0.004415	0.001068	0.00124
General Of	0.486165	0.045865	0.21434	0.141752	0.048048	0.01301	0.021353	0.019982	0.00167	0.001093	0.004415	0.001068	0.00124
Parking Lot	0.486165	0.045865	0.21434	0.141752	0.048048	0.01301	0.021353	0.019982	0.00167	0.001093	0.004415	0.001068	0.00124
Unrefrigera	0.486165	0.045865	0.21434	0.141752	0.048048	0.01301	0.021353	0.019982	0.00167	0.001093	0.004415	0.001068	0.00124

Season	EmissionTy	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004002	0.002599	0.012076	0.158045	0.007896	0	0	0.093739	0
A	CH4_RUNE	0.001486	0.005038	0.002191	0.002623	0.007502	0.006021	0.007548	0.047978	0.010072	0.640187	0.17227	0.184466	0.007638
A	CH4_STREX	0.051242	0.097523	0.068398	0.081057	0.016721	0.009262	0.005667	3.83E-08	0.019135	0.020525	0.192786	0.002684	0.022077
A	CO_IDLEX	0	0	0	0	0.165773	0.130233	0.632138	4.499144	0.669033	0	0	1.193011	0
A	CO_RUNEX	0.542545	1.231638	0.709444	0.769447	0.784235	0.498458	0.154774	0.502113	0.486056	7.756167	13.62555	0.823552	0.516213
A	CO_STREX	2.364446	4.982249	3.133335	3.424152	1.723851	0.987404	0.641344	0.001018	2.15797	2.447676	8.599194	0.347459	1.845754
A	CO2_NBIO_	0	0	0	0	8.776507	14.23087	151.6694	667.0067	102.0933	0	0	172.9323	0
A	CO2_NBIO_	223.7073	305.4603	307.916	372.6941	705.5937	775.4584	1064.948	1456.964	1369.237	1027.949	188.9008	1011.564	1603.711
A	CO2_NBIO_	58.16572	82.22509	79.3043	95.79318	13.80389	7.987382	5.750776	0.012185	16.41109	19.10316	50.69062	2.143326	18.38802
A	NOX_IDLEX	0	0	0	0	0.071971	0.105207	0.765536	3.576336	0.373896	0	0	1.128316	0
A	NOX_RUNE	0.027662	0.103888	0.049979	0.063542	0.873981	0.886498	0.617157	1.632002	1.031839	0.200541	0.599049	1.751867	1.834369
A	NOX_STREX	0.197151	0.364401	0.280313	0.340012	0.316877	0.19067	1.322037	2.636876	0.879512	0.165179	0.143541	0.474278	0.298507
A	PM10_IDLE	0	0	0	0	0.000948	0.00152	0.000652	0.001949	0.000392	0	0	0.000749	0
A	PM10_PMI	0.008256	0.010685	0.010162	0.010329	0.075899	0.08885	0.043332	0.081287	0.052892	0.132913	0.012	0.043924	0.044934
A	PM10_PM1	0.008	0.008	0.008	0.008	0.009807	0.010725	0.012	0.033915	0.012	0.042781	0.004	0.010944	0.013584
A	PM10_RUN	0.00093	0.001608	0.001089	0.001142	0.020325	0.025956	0.005509	0.02177	0.018185	0.003391	0.002009	0.010343	0.043058
A	PM10_STR	0.001572	0.002636	0.001772	0.001844	0.000175	5.53E-05	6.95E-05	1.75E-07	0.000188	0.000129	0.003355	2.41E-05	0.000208
A	PM25_IDLE	0	0	0	0	0.000907	0.001455	0.000623	0.001859	0.000375	0	0	0.000714	0
A	PM25_PMI	0.00289	0.00374	0.003557	0.003615	0.026564	0.031098	0.015166	0.02845	0.018512	0.046519	0.0042	0.015373	0.015727
A	PM25_PM1	0.002	0.002	0.002	0.002	0.002452	0.002681	0.003	0.008479	0.003	0.010695	0.001	0.002736	0.003396
A	PM25_RUN	0.000856	0.001479	0.001002	0.001053	0.019413	0.02482	0.005265	0.020825	0.017386	0.003231	0.001878	0.00988	0.041161
A	PM25_STR	0.001445	0.002424	0.001629	0.001696	0.000161	5.08E-05	6.39E-05	1.61E-07	0.000173	0.000119	0.00315	2.21E-05	0.000191
A	ROG_DIUR	0.265041	0.709205	0.305469	0.397011	0.108858	0.05307	0.015529	5.31E-05	0.097988	0.03314	4.994778	0.024448	25.26204
A	ROG_HTSK	0.069712	0.181933	0.077033	0.096019	0.026405	0.012197	0.003559	1.46E-05	0.020287	0.009437	3.556898	0.005615	5.995331
A	ROG_IDLEX	0	0	0	0	0.017857	0.014314	0.020078	0.283636	0.052027	0	0	0.114583	0
A	ROG_REST	0.265041	0.709205	0.305469	0.397011	0.108858	0.05307	0.015529	5.31E-05	0.097988	0.03314	4.994778	0.024448	25.26204
A	ROG_RUNE	0.005361	0.022275	0.008329	0.01072	0.102344	0.114329	0.01474	0.016305	0.04982	0.039066	1.138941	0.040467	0.071035
A	ROG_RUNL	0.201767	0.544621	0.231203	0.301216	0.158785	0.070447	0.030022	0.000134	0.109149	0.0342	3.992608	0.015728	0.148522
A	ROG_STREX	0.225343	0.50366	0.310376	0.39716	0.083243	0.044223	0.030341	2.07E-07	0.10534	0.079889	1.452324	0.014707	0.088353
A	SO2_IDLEX	0	0	0	0	8.49E-05	0.000136	0.001407	0.005809	0.000967	0	0	0.00148	0
A	SO2_RUNE	0.002211	0.00302	0.003044	0.003682	0.006857	0.007453	0.010075	0.013192	0.013101	0.007607	0.001867	0.009048	0.015679
A	SO2_STREX	0.000575	0.000813	0.000784	0.000947	0.000136	7.90E-05	5.69E-05	1.20E-07	0.000162	0.000189	0.000501	2.12E-05	0.000182
A	TOG_DIUR	0.265041	0.709205	0.305469	0.397011	0.108858	0.05307	0.015529	5.31E-05	0.097988	0.03314	0.134652	0.024448	25.26204
A	TOG_HTSK	0.069712	0.181933	0.077033	0.096019	0.026405	0.012197	0.003559	1.46E-05	0.020287	0.009437	3.556898	0.005615	5.995331
A	TOG_IDLEX	0	0	0	0	0.024836	0.018982	0.034782	0.468494	0.066897	0	0	0.232798	0
A	TOG_RESTI	0.265041	0.709205	0.305469	0.397011	0.108858	0.05307	0.015529	5.31E-05	0.097988	0.03314	0.134652	0.024448	25.26204
A	TOG_RUNE	0.007809	0.032504	0.012137	0.015581	0.122007	0.131362	0.024261	0.066061	0.067134	0.686067	1.369677	0.230144	0.087197
A	TOG_RUNL	0.201767	0.544621	0.231203	0.301216	0.158785	0.070447	0.030022	0.000134	0.109149	0.0342	3.992608	0.015728	0.148522
A	TOG_STREX	0.246722	0.551445	0.339823	0.43484	0.09114	0.048419	0.033219	2.27E-07	0.115334	0.087469	1.57884	0.016103	0.096736
A	N2O_IDLEX	0	0	0	0	0.000826	0.001846	0.023552	0.107566	0.014695	0	0	0.024943	0
A	N2O_RUNE	0.003572	0.008063	0.005058	0.006579	0.049794	0.083385	0.144182	0.232476	0.149276	0.129341	0.040918	0.134634	0.080099
A	N2O_STREX	0.027247	0.037359	0.0338	0.035899	0.025525	0.015535	0.003919	1.22E-07	0.015327	0.020985	0.00832	0.003039	0.031891

FleetMixLa	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartment	0.518249	0.034481	0.214924	0.132556	0.038169	0.010517	0.021562	0.021147	0.001476	0.001107	0.003805	0.001094	0.000914
General Of	0.518249	0.034481	0.214924	0.132556	0.038169	0.010517	0.021562	0.021147	0.001476	0.001107	0.003805	0.001094	0.000914
Parking Lot	0.518249	0.034481	0.214924	0.132556	0.038169	0.010517	0.021562	0.021147	0.001476	0.001107	0.003805	0.001094	0.000914
Unrefrigera	0.518249	0.034481	0.214924	0.132556	0.038169	0.010517	0.021562	0.021147	0.001476	0.001107	0.003805	0.001094	0.000914

Season	EmissionTy	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.003515	0.002343	0.012236	0.130651	0.007512	0	0	0.093296	0
A	CH4_RUNE	0.00114	0.002869	0.0017	0.001939	0.004416	0.004753	0.007114	0.034691	0.009364	0.543498	0.157319	0.168004	0.005615
A	CH4_STRE)	0.040308	0.069285	0.05497	0.062825	0.014138	0.00797	0.00411	2.00E-08	0.01568	0.01379	0.175611	0.002706	0.019794
A	CO_IDLEX	0	0	0	0	0.154938	0.128101	0.551848	4.244334	0.69532	0	0	1.180171	0
A	CO_RUNEX	0.473494	0.831198	0.620442	0.654235	0.512317	0.408457	0.094636	0.418326	0.31549	6.438899	12.31408	0.695478	0.340293
A	CO_STREX	1.920467	3.348038	2.604718	2.804562	1.629316	0.973326	0.424543	0.000953	1.810635	2.054403	8.506875	0.327627	1.556346
A	CO2_NBIO_	0	0	0	0	7.825552	14.03631	129.168	590.552	104.3108	0	0	155.0865	0
A	CO2_NBIO_	209.3241	283.4997	289.3942	347.744	603.532	674.4112	852.3267	1242.045	1251.887	780.7435	187.49	890.0676	1589.841
A	CO2_NBIO_	53.60831	74.1426	73.49315	88.43164	12.77038	7.558019	4.170369	0.008446	13.6955	13.61052	46.97831	2.050177	16.87432
A	NOX_IDLEX	0	0	0	0	0.057439	0.097003	0.647071	3.274255	0.34153	0	0	0.810946	0
A	NOX_RUNE	0.021867	0.055273	0.035402	0.042897	0.525523	0.670683	0.394509	1.313342	0.857467	0.144201	0.552145	0.939066	1.640988
A	NOX_STRE)	0.17311	0.27575	0.240798	0.278452	0.271888	0.169195	1.067961	2.373391	0.803167	0.120685	0.121609	0.483174	0.295621
A	PM10_IDLE	0	0	0	0	0.000838	0.001511	0.000289	0.001492	0.000317	0	0	0.000393	0
A	PM10_PMI	0.008234	0.010554	0.010164	0.010273	0.071331	0.084174	0.039858	0.079286	0.053389	0.211134	0.012	0.04181	0.04493
A	PM10_PM"	0.008	0.008	0.008	0.008	0.009525	0.010459	0.012	0.033938	0.012	0.086643	0.004	0.01091	0.01365
A	PM10_RUN	0.000674	0.001063	0.000797	0.000835	0.014498	0.021464	0.00325	0.019444	0.015376	0.002643	0.002074	0.006196	0.036355
A	PM10_STR	0.00117	0.001843	0.001323	0.001399	9.84E-05	3.84E-05	4.92E-05	9.97E-08	0.000142	7.79E-05	0.003255	2.40E-05	0.000185
A	PM25_IDLE	0	0	0	0	0.000802	0.001446	0.000276	0.001422	0.000303	0	0	0.000374	0
A	PM25_PMI	0.002882	0.003694	0.003557	0.003595	0.024966	0.029461	0.01395	0.02775	0.018686	0.073897	0.0042	0.014634	0.015726
A	PM25_PM"	0.002	0.002	0.002	0.002	0.002381	0.002615	0.003	0.008485	0.003	0.021661	0.001	0.002728	0.003412
A	PM25_RUN	0.00062	0.000977	0.000733	0.00077	0.013846	0.020524	0.003105	0.0186	0.014701	0.002517	0.001936	0.005912	0.034752
A	PM25_STR	0.001076	0.001695	0.001217	0.001286	9.05E-05	3.53E-05	4.53E-05	9.17E-08	0.00013	7.16E-05	0.003047	2.21E-05	0.00017
A	ROG_DIUR	0.239552	0.61112	0.286886	0.367362	0.094779	0.058624	0.012026	1.23E-05	0.091146	0.028328	4.774606	0.043523	19.51689
A	ROG_HTSK	0.053802	0.134473	0.062503	0.078485	0.020321	0.011328	0.002289	2.56E-06	0.016793	0.007676	3.551763	0.00761	4.05892
A	ROG_IDLEX	0	0	0	0	0.015537	0.013428	0.016222	0.265374	0.051799	0	0	0.110474	0
A	ROG_REST	0.239552	0.61112	0.286886	0.367362	0.094779	0.058624	0.012026	1.23E-05	0.091146	0.028328	4.774606	0.043523	19.51689
A	ROG_RUNE	0.003794	0.011839	0.006002	0.007343	0.067054	0.093921	0.008058	0.012518	0.036388	0.030633	1.006608	0.026448	0.060426
A	ROG_RUNI	0.18061	0.450578	0.215444	0.274137	0.132355	0.07681	0.022441	2.47E-05	0.098459	0.030639	3.993364	0.029335	0.108825
A	ROG_STRE)	0.169609	0.335113	0.238811	0.293071	0.06859	0.037419	0.02137	1.08E-07	0.087214	0.051838	1.307965	0.014773	0.075378
A	SO2_IDLEX	0	0	0	0	7.57E-05	0.000134	0.001191	0.005129	0.000986	0	0	0.001307	0
A	SO2_RUNE	0.002069	0.002803	0.002861	0.003436	0.005868	0.006479	0.008039	0.01123	0.01192	0.005927	0.001854	0.007938	0.015534
A	SO2_STRE)	0.00053	0.000733	0.000727	0.000874	0.000126	7.47E-05	4.12E-05	8.35E-08	0.000135	0.000135	0.000464	2.03E-05	0.000167
A	TOG_DIUR	0.239552	0.61112	0.286886	0.367362	0.094779	0.058624	0.012026	1.23E-05	0.091146	0.028328	0.120286	0.043523	19.51689
A	TOG_HTSK	0.053802	0.134473	0.062503	0.078485	0.020321	0.011328	0.002289	2.56E-06	0.016793	0.007676	3.551763	0.00761	4.05892
A	TOG_IDLEX	0	0	0	0	0.021582	0.017657	0.030565	0.421026	0.066034	0	0	0.227453	0
A	TOG_RESTI	0.239552	0.61112	0.286886	0.367362	0.094779	0.058624	0.012026	1.23E-05	0.091146	0.028328	0.120286	0.043523	19.51689
A	TOG_RUNE	0.005531	0.017275	0.008742	0.010676	0.078619	0.107506	0.01618	0.048557	0.05054	0.579667	1.226843	0.19806	0.072342
A	TOG_RUNI	0.18061	0.450578	0.215444	0.274137	0.132355	0.07681	0.022441	2.47E-05	0.098459	0.030639	3.993364	0.029335	0.108825
A	TOG_STRE)	0.185701	0.366906	0.261468	0.320876	0.075097	0.040969	0.023398	1.18E-07	0.095489	0.056756	1.422483	0.016175	0.082529
A	N2O_IDLEX	0	0	0	0	0.00072	0.001836	0.020149	0.095305	0.015277	0	0	0.022249	0
A	N2O_RUNE	0.003136	0.005384	0.004231	0.005197	0.040603	0.073387	0.117992	0.198257	0.15157	0.094502	0.03893	0.116159	0.079859
A	N2O_STRE)	0.025112	0.032696	0.031592	0.032889	0.022692	0.014051	0.002902	1.55E-08	0.01192	0.016678	0.007176	0.003173	0.03244

FleetMixLa	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartment	0.534132	0.029187	0.213277	0.128565	0.033166	0.0091	0.022146	0.022521	0.001399	0.001126	0.003517	0.001109	0.000757
General Of	0.534132	0.029187	0.213277	0.128565	0.033166	0.0091	0.022146	0.022521	0.001399	0.001126	0.003517	0.001109	0.000757
Parking Lot	0.534132	0.029187	0.213277	0.128565	0.033166	0.0091	0.022146	0.022521	0.001399	0.001126	0.003517	0.001109	0.000757
Unrefrigera	0.534132	0.029187	0.213277	0.128565	0.033166	0.0091	0.022146	0.022521	0.001399	0.001126	0.003517	0.001109	0.000757

Attachment 4: Project Construction Emissions and Health Risk Calculations

3111 Santa Rosa Ave, Santa Rosa, CA

DPM Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2022 & 2023	Construction	0.1020	CON_DPM	204.1	0.06212	7.83E-03	17,377	4.50E-07
Total		***0.1020***		***204.1***	***0.0621***	***0.0078***		

Construction Hours

hr/day =	9	(8am - 5pm)
days/yr =	365	
hours/year =	3285	

3111 Santa Rosa Ave, Santa Rosa, CA

PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated

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)	PM2.5 Emission Rate $g/s/m^2$
2022 & 2023	Construction	CON_FUG	0.0404	80.9	0.02461	3.10E-03	17,377	1.78E-07
Total			***0.0404***	***80.9***	***0.0246***	***0.0031***		

Construction Hours

hr/day =	9	(8am - 5pm)
days/yr =	365	
hours/year =	3285	

3111 Santa Rosa Ave, Santa Rosa, CA
Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

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	0.0414	0.0170	7.36	0.12	0.01	0.06
Total	-	-	**7.36**	**0.12**	-	-
Maximum	0.0414	0.0170	**-**	**-**	**0.01**	**0.06**

3111 Santa Rosa Ave, Santa Rosa, CA - Construction Impacts - Without Mitigation
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	0.0333	10	0.45	2022 - 2023	0.0333	-	-			
1	1	0 - 1	2022 - 2023	0.0333	10	5.48	2022 - 2023	0.0333	1	0.10	0.007	0.014	0.05
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						**5.93**				**0.10**			

* Third trimester of pregnancy

3111 Santa Rosa Ave, Santa Rosa, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 4.5 meter receptor height

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
				DPM Conc (ug/m3)	Age			Modeled DPM Conc (ug/m3)	Age				
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**Year**	**Annual**	**Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2022 - 2023	0.0377	10	0.51	2022 - 2023	0.0377	-	-			
1	1	0 - 1	2022 - 2023	0.0377	10	6.19	2022 - 2023	0.0377	1	0.11	0.008	0.016	0.05
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						**6.70**				**0.11**			

* Third trimester of pregnancy

3111 Santa Rosa Ave, Santa Rosa, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
							Modeled						
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	0.0414	10	0.56	2022 - 2023	0.0414	-	-			
1	1	0 - 1	2022 - 2023	0.0414	10	6.80	2022 - 2023	0.0414	1	0.12	0.01	0.017	0.06
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						**7.36**				**0.12**			

* Third trimester of pregnancy

Attachment 5: Community Risk Modeling Information and Calculations

CT-EMFAC2017 Emissions Factors for Highway 101

```
           File Name:   Sonoma (SF) - 2024 - Annual.EF
CT-EMFAC2017 Version:   1.0.2.27401
            Run Date:   7/19/2021 3:34:18 PM
                Area:   Sonoma (SF)
       Analysis Year:   2024
              Season:   Annual

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

Vehicle Category        VMT Fraction            Diesel VMT Fraction     Gas VMT Fraction
                        Across Category         Within Category         Within Category
         Truck 1             0.031                 0.581                   0.419
         Truck 2             0.020                 0.945                   0.039
       Non-Truck             0.949                 0.017                   0.959

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

               Road Type:               Freeway
     Silt Loading Factor:                  CARB         0.015 g/m2
Precipitation Correction:                  CARB         P = 69 days     N = 365 days

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

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

       Pollutant Name      55 mph            65 mph
                PM2.5      0.001661        0.002085
                  TOG      0.028342        0.033812
           Diesel PM       0.000793        0.000973

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

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

       Pollutant Name   Emission Factor
                  TOG          1.667356

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.002089

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.017517

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.007520

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

CT-EMFAC2017 Emissions Factors for Santa Rosa Avenue

```
           File Name:   Sonoma (SF) - 2024 - Annual.EF
CT-EMFAC2017 Version:   1.0.2.27401
            Run Date:   7/19/2021 3:35:01 PM
                Area:   Sonoma (SF)
       Analysis Year:   2024
              Season:   Annual

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

Vehicle Category        VMT Fraction            Diesel VMT Fraction     Gas VMT Fraction
                        Across Category         Within Category         Within Category
         Truck 1             0.020                   0.581                   0.419
         Truck 2             0.023                   0.945                   0.039
       Non-Truck             0.957                   0.017                   0.959

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

               Road Type:       Major/Collector
     Silt Loading Factor:                 CARB        0.032 g/m2
Precipitation Correction:                 CARB        P = 69 days     N = 365 days

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

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

       Pollutant Name      40 mph
                PM2.5      0.001527
                  TOG      0.030603
           Diesel PM       0.000547

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

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

       Pollutant Name   Emission Factor
                  TOG          1.627244

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.002093

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.017410

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.015055

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

Roadway Traffic Emissions and Health Risk Calculations

3111 Santa Rosa Ave, Santa Rosa, CA - Off-Site Residential
Cumulative Operation - Highway 101
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_101	Highway 101 Northbound	NB	3	695.1	0.43	17.0	55.7	3.4	55	80,325
DPM_SB_101	Highway 101 Southbound	SB	3	691.1	0.43	17.0	55.7	3.4	55	80,325
									Total	160,650

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	55	65		
Emissions per Vehicle (g/VMT)	0.00079	0.000973		

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.86%	1495	1.74E-04	9	5.39%	4326	4.12E-04	17	6.48%	5206	4.95E-04
2	1.58%	1270	1.48E-04	10	5.07%	4075	3.88E-04	18	6.27%	5035	4.79E-04
3	1.52%	1218	1.42E-04	11	5.33%	4280	4.07E-04	19	5.34%	4290	5.01E-04
4	1.50%	1208	1.41E-04	12	5.60%	4501	4.28E-04	20	4.29%	3449	4.03E-04
5	1.72%	1382	1.61E-04	13	5.79%	4655	4.43E-04	21	3.74%	3004	3.51E-04
6	2.48%	1995	2.33E-04	14	5.89%	4734	4.50E-04	22	3.24%	2602	3.04E-04
7	3.86%	3098	2.95E-04	15	6.09%	4895	4.66E-04	23	2.73%	2195	2.56E-04
8	5.35%	4298	4.09E-04	16	6.63%	5322	5.06E-04	24	2.23%	1793	2.09E-04
								Total		80,325	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.69%	1356	1.57E-04	9	5.66%	4545	4.30E-04	17	6.33%	5084	4.81E-04
2	1.53%	1230	1.43E-04	10	5.13%	4117	3.89E-04	18	6.21%	4990	4.72E-04
3	1.52%	1221	1.42E-04	11	5.27%	4236	4.01E-04	19	5.07%	4071	4.73E-04
4	1.74%	1402	1.63E-04	12	5.47%	4391	4.15E-04	20	4.11%	3299	3.83E-04
5	2.36%	1893	2.20E-04	13	5.62%	4511	4.27E-04	21	3.53%	2839	3.30E-04
6	3.39%	2722	3.16E-04	14	5.64%	4528	4.28E-04	22	3.07%	2463	2.86E-04
7	4.34%	3483	3.29E-04	15	5.72%	4595	4.35E-04	23	2.53%	2036	2.36E-04
8	5.77%	4632	4.38E-04	16	6.26%	5030	4.76E-04	24	2.05%	1649	1.91E-04
								Total		80,325	

3111 Santa Rosa Ave, Santa Rosa, CA - Off-Site Residential
Cumulative Operation - Highway 101
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_101	Highway 101 Northbound	NB	3	695.1	0.43	17.0	56	1.3	55	80,325
PM2.5_SB_101	Highway 101 Southbound	SB	3	691.1	0.43	17.0	56	1.3	55	80,325
									Total	160,650

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	55	65		
Emissions per Vehicle (g/VMT)	0.001661	0.00209		

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.86%	1495	3.74E-04	9	5.39%	4326	8.62E-04	17	6.48%	5206	1.04E-03
2	1.58%	1270	3.18E-04	10	5.07%	4075	8.12E-04	18	6.27%	5035	1.00E-03
3	1.52%	1218	3.05E-04	11	5.33%	4280	8.53E-04	19	5.34%	4290	1.07E-03
4	1.50%	1208	3.02E-04	12	5.60%	4501	8.97E-04	20	4.29%	3449	8.63E-04
5	1.72%	1382	3.46E-04	13	5.79%	4655	9.28E-04	21	3.74%	3004	7.51E-04
6	2.48%	1995	4.99E-04	14	5.89%	4734	9.43E-04	22	3.24%	2602	6.51E-04
7	3.86%	3098	6.17E-04	15	6.09%	4895	9.76E-04	23	2.73%	2195	5.49E-04
8	5.35%	4298	8.56E-04	16	6.63%	5322	1.06E-03	24	2.23%	1793	4.48E-04
								Total		80,325	

2024 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.69%	1356	3.37E-04	9	5.66%	4545	9.01E-04	17	6.33%	5084	1.01E-03
2	1.53%	1230	3.06E-04	10	5.13%	4117	8.16E-04	18	6.21%	4990	9.89E-04
3	1.52%	1221	3.04E-04	11	5.27%	4236	8.39E-04	19	5.07%	4071	1.01E-03
4	1.74%	1402	3.49E-04	12	5.47%	4391	8.70E-04	20	4.11%	3299	8.21E-04
5	2.36%	1893	4.71E-04	13	5.62%	4511	8.94E-04	21	3.53%	2839	7.06E-04
6	3.39%	2722	6.77E-04	14	5.64%	4528	8.97E-04	22	3.07%	2463	6.12E-04
7	4.34%	3483	6.90E-04	15	5.72%	4595	9.10E-04	23	2.53%	2036	5.06E-04
8	5.77%	4632	9.18E-04	16	6.26%	5030	9.97E-04	24	2.05%	1649	4.10E-04
								Total		80,325	

3111 Santa Rosa Ave, Santa Rosa, CA - Off-Site Residential
Cumulative Operation - Highway 101
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_101	Highway 101 Northbound	NB	3	695.1	0.43	17.0	56	1.3	55	80,325
TEXH_SB_101	Highway 101 Southbound	SB	3	691.1	0.43	17.0	56	1.3	55	80,325
									Total	160,650

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	55	65		
Emissions per Vehicle (g/VMT)	0.02834	0.03381		

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.86%	1495	6.06E-03	9	5.39%	4326	1.47E-02	17	6.48%	5206	1.77E-02
2	1.58%	1270	5.15E-03	10	5.07%	4075	1.39E-02	18	6.27%	5035	1.71E-02
3	1.52%	1218	4.94E-03	11	5.33%	4280	1.46E-02	19	5.34%	4290	1.74E-02
4	1.50%	1208	4.90E-03	12	5.60%	4501	1.53E-02	20	4.29%	3449	1.40E-02
5	1.72%	1382	5.60E-03	13	5.79%	4655	1.58E-02	21	3.74%	3004	1.22E-02
6	2.48%	1995	8.09E-03	14	5.89%	4734	1.61E-02	22	3.24%	2602	1.06E-02
7	3.86%	3098	1.05E-02	15	6.09%	4895	1.66E-02	23	2.73%	2195	8.90E-03
8	5.35%	4298	1.46E-02	16	6.63%	5322	1.81E-02	24	2.23%	1793	7.27E-03
								Total		80,325	

2024 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.69%	1356	5.47E-03	9	5.66%	4545	1.54E-02	17	6.33%	5084	1.72E-02
2	1.53%	1230	4.96E-03	10	5.13%	4117	1.39E-02	18	6.21%	4990	1.69E-02
3	1.52%	1221	4.93E-03	11	5.27%	4236	1.43E-02	19	5.07%	4071	1.64E-02
4	1.74%	1402	5.65E-03	12	5.47%	4391	1.48E-02	20	4.11%	3299	1.33E-02
5	2.36%	1893	7.64E-03	13	5.62%	4511	1.53E-02	21	3.53%	2839	1.15E-02
6	3.39%	2722	1.10E-02	14	5.64%	4528	1.53E-02	22	3.07%	2463	9.93E-03
7	4.34%	3483	1.18E-02	15	5.72%	4595	1.55E-02	23	2.53%	2036	8.21E-03
8	5.77%	4632	1.57E-02	16	6.26%	5030	1.70E-02	24	2.05%	1649	6.65E-03
								Total		80,325	

3111 Santa Rosa Ave, Santa Rosa, CA - Off-Site Residential
Cumulative Operation - Highway 101
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_101	Highway 101 Northbound	NB	3	695.1	0.43	17.0	56	1.3	55	80,325
TEVAP_SB_101	Highway 101 Southbound	SB	3	691.1	0.43	17.0	56	1.3	55	80,325
									Total	160,650

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	55	65		
Emissions per Vehicle per Hour (g/hour)	1.66736	1.66736		
Emissions per Vehicle per Mile (g/VMT)	0.03032	0.02565		

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.86%	1495	4.60E-03	9	5.39%	4326	1.57E-02	17	6.48%	5206	1.89E-02
2	1.58%	1270	3.91E-03	10	5.07%	4075	1.48E-02	18	6.27%	5035	1.83E-02
3	1.52%	1218	3.75E-03	11	5.33%	4280	1.56E-02	19	5.34%	4290	1.32E-02
4	1.50%	1208	3.72E-03	12	5.60%	4501	1.64E-02	20	4.29%	3449	1.06E-02
5	1.72%	1382	4.25E-03	13	5.79%	4655	1.69E-02	21	3.74%	3004	9.25E-03
6	2.48%	1995	6.14E-03	14	5.89%	4734	1.72E-02	22	3.24%	2602	8.01E-03
7	3.86%	3098	1.13E-02	15	6.09%	4895	1.78E-02	23	2.73%	2195	6.76E-03
8	5.35%	4298	1.56E-02	16	6.63%	5322	1.94E-02	24	2.23%	1793	5.52E-03
								Total		80,325	

2024 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.69%	1356	4.15E-03	9	5.66%	4545	1.64E-02	17	6.33%	5084	1.84E-02
2	1.53%	1230	3.76E-03	10	5.13%	4117	1.49E-02	18	6.21%	4990	1.80E-02
3	1.52%	1221	3.74E-03	11	5.27%	4236	1.53E-02	19	5.07%	4071	1.25E-02
4	1.74%	1402	4.29E-03	12	5.47%	4391	1.59E-02	20	4.11%	3299	1.01E-02
5	2.36%	1893	5.79E-03	13	5.62%	4511	1.63E-02	21	3.53%	2839	8.69E-03
6	3.39%	2722	8.33E-03	14	5.64%	4528	1.64E-02	22	3.07%	2463	7.54E-03
7	4.34%	3483	1.26E-02	15	5.72%	4595	1.66E-02	23	2.53%	2036	6.23E-03
8	5.77%	4632	1.67E-02	16	6.26%	5030	1.82E-02	24	2.05%	1649	5.05E-03
								Total		80,325	

3111 Santa Rosa Ave, Santa Rosa, CA - Off-Site Residential
Cumulative Operation - Highway 101
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_101	Highway 101 Northbound	NB	3	695.1	0.43	17.0	56	1.3	55	80,325
FUG_SB_101	Highway 101 Southbound	SB	3	691.1	0.43	17.0	56	1.3	55	80,325
									Total	160,650

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	55	65		
Tire Wear - Emissions per Vehicle (g/VMT)	0.00209	0.00209		
Brake Wear - Emissions per Vehicle (g/VMT)	0.01752	0.01752		
Road Dust - Emissions per Vehicle (g/VMT)	0.00752	0.00752		
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02713	0.02713		

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.86%	1495	4.86E-03	9	5.39%	4326	1.41E-02	17	6.48%	5206	1.69E-02
2	1.58%	1270	4.13E-03	10	5.07%	4075	1.33E-02	18	6.27%	5035	1.64E-02
3	1.52%	1218	3.96E-03	11	5.33%	4280	1.39E-02	19	5.34%	4290	1.40E-02
4	1.50%	1208	3.93E-03	12	5.60%	4501	1.46E-02	20	4.29%	3449	1.12E-02
5	1.72%	1382	4.50E-03	13	5.79%	4655	1.51E-02	21	3.74%	3004	9.78E-03
6	2.48%	1995	6.49E-03	14	5.89%	4734	1.54E-02	22	3.24%	2602	8.47E-03
7	3.86%	3098	1.01E-02	15	6.09%	4895	1.59E-02	23	2.73%	2195	7.14E-03
8	5.35%	4298	1.40E-02	16	6.63%	5322	1.73E-02	24	2.23%	1793	5.83E-03
								Total		80,325	

2024 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.69%	1356	4.39E-03	9	5.66%	4545	1.47E-02	17	6.33%	5084	1.65E-02
2	1.53%	1230	3.98E-03	10	5.13%	4117	1.33E-02	18	6.21%	4990	1.61E-02
3	1.52%	1221	3.95E-03	11	5.27%	4236	1.37E-02	19	5.07%	4071	1.32E-02
4	1.74%	1402	4.54E-03	12	5.47%	4391	1.42E-02	20	4.11%	3299	1.07E-02
5	2.36%	1893	6.13E-03	13	5.62%	4511	1.46E-02	21	3.53%	2839	9.19E-03
6	3.39%	2722	8.81E-03	14	5.64%	4528	1.47E-02	22	3.07%	2463	7.97E-03
7	4.34%	3483	1.13E-02	15	5.72%	4595	1.49E-02	23	2.53%	2036	6.59E-03
8	5.77%	4632	1.50E-02	16	6.26%	5030	1.63E-02	24	2.05%	1649	5.34E-03
								Total		80,325	

3111 Santa Rosa Ave, Santa Rosa, CA - Off-Site Residential
Cumulative Operation - Santa Rosa Avenue
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_SAN	Santa Rosa Avenue Northbound	NB	2	709.5	0.44	13.3	43.7	3.4	40	11,915
DPM_SB_SAN	Santa Rosa Avenue Southbound	SB	2	709.5	0.44	13.3	43.7	3.4	40	11,915
									Total	23,830

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.00055			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_NB_SAN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	4.10%	488	3.27E-05	9	6.78%	808	5.41E-05	17	5.63%	671	4.49E-05
2	3.44%	410	2.75E-05	10	7.91%	942	6.31E-05	18	4.01%	478	3.20E-05
3	3.44%	410	2.75E-05	11	6.10%	727	4.87E-05	19	2.84%	339	2.27E-05
4	1.97%	234	1.57E-05	12	7.11%	847	5.67E-05	20	1.18%	141	9.46E-06
5	1.64%	195	1.31E-05	13	6.29%	749	5.02E-05	21	2.97%	354	2.37E-05
6	2.13%	254	1.70E-05	14	5.96%	710	4.75E-05	22	4.28%	510	3.42E-05
7	4.96%	590	3.96E-05	15	5.30%	632	4.23E-05	23	3.13%	373	2.50E-05
8	3.85%	458	3.07E-05	16	4.15%	495	3.32E-05	24	0.84%	100	6.69E-06
								Total		11,915	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_SAN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	4.10%	488	3.27E-05	9	6.78%	808	5.41E-05	17	5.63%	671	4.49E-05
2	3.44%	410	2.75E-05	10	7.91%	942	6.31E-05	18	4.01%	478	3.20E-05
3	3.44%	410	2.75E-05	11	6.10%	727	4.87E-05	19	2.84%	339	2.27E-05
4	1.97%	234	1.57E-05	12	7.11%	847	5.67E-05	20	1.18%	141	9.46E-06
5	1.64%	195	1.31E-05	13	6.29%	749	5.02E-05	21	2.97%	354	2.37E-05
6	2.13%	254	1.70E-05	14	5.96%	710	4.75E-05	22	4.28%	510	3.42E-05
7	4.96%	590	3.96E-05	15	5.30%	632	4.23E-05	23	3.13%	373	2.50E-05
8	3.85%	458	3.07E-05	16	4.15%	495	3.32E-05	24	0.84%	100	6.69E-06
								Total		11,915	

3111 Santa Rosa Ave, Santa Rosa, CA - Off-Site Residential
Cumulative Operation - Santa Rosa Avenue
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_EB_SAN	Santa Rosa Avenue Northbound	NB	2	709.5	0.44	13.3	44	1.3	40	11,915
PM2.5_WB_SAN	Santa Rosa Avenue Southbound	SB	2	709.5	0.44	13.3	44	1.3	40	11,915
									Total	23,830

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.001527			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.17%	140	2.61E-05	9	7.18%	855	1.60E-04	17	7.48%	891	1.67E-04
2	0.47%	56	1.04E-05	10	4.47%	533	9.96E-05	18	8.16%	972	1.82E-04
3	0.53%	63	1.18E-05	11	4.71%	562	1.05E-04	19	5.64%	672	1.26E-04
4	0.24%	29	5.44E-06	12	5.92%	705	1.32E-04	20	4.23%	504	9.42E-05
5	0.51%	61	1.13E-05	13	6.13%	730	1.37E-04	21	3.21%	382	7.15E-05
6	0.92%	110	2.05E-05	14	6.04%	720	1.35E-04	22	3.28%	391	7.30E-05
7	3.71%	442	8.27E-05	15	6.97%	830	1.55E-04	23	2.45%	292	5.47E-05
8	7.62%	907	1.70E-04	16	7.12%	848	1.59E-04	24	1.85%	220	4.12E-05
								Total		11,915	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.17%	140	2.61E-05	9	7.18%	855	1.60E-04	17	7.48%	891	1.67E-04
2	0.47%	56	1.04E-05	10	4.47%	533	9.96E-05	18	8.16%	972	1.82E-04
3	0.53%	63	1.18E-05	11	4.71%	562	1.05E-04	19	5.64%	672	1.26E-04
4	0.24%	29	5.44E-06	12	5.92%	705	1.32E-04	20	4.23%	504	9.42E-05
5	0.51%	61	1.13E-05	13	6.13%	730	1.37E-04	21	3.21%	382	7.15E-05
6	0.92%	110	2.05E-05	14	6.04%	720	1.35E-04	22	3.28%	391	7.30E-05
7	3.71%	442	8.27E-05	15	6.97%	830	1.55E-04	23	2.45%	292	5.47E-05
8	7.62%	907	1.70E-04	16	7.12%	848	1.59E-04	24	1.85%	220	4.12E-05
								Total		11,915	

3111 Santa Rosa Ave, Santa Rosa, CA - Off-Site Residential
Cumulative Operation - Santa Rosa Avenue
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_EB_SAN	Santa Rosa Avenue Northbound	NB	2	709.5	0.44	13.3	44	1.3	40	11,915
TEXH_WB_SAN	Santa Rosa Avenue Southbound	SB	2	709.5	0.44	13.3	44	1.3	40	11,915
									Total	23,830

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.03060			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_SAN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.17%	140	5.23E-04	9	7.18%	855	3.20E-03	17	7.48%	891	3.34E-03
2	0.47%	56	2.09E-04	10	4.47%	533	2.00E-03	18	8.16%	972	3.64E-03
3	0.53%	63	2.37E-04	11	4.71%	562	2.11E-03	19	5.64%	672	2.52E-03
4	0.24%	29	1.09E-04	12	5.92%	705	2.64E-03	20	4.23%	504	1.89E-03
5	0.51%	61	2.27E-04	13	6.13%	730	2.74E-03	21	3.21%	382	1.43E-03
6	0.92%	110	4.11E-04	14	6.04%	720	2.70E-03	22	3.28%	391	1.46E-03
7	3.71%	442	1.66E-03	15	6.97%	830	3.11E-03	23	2.45%	292	1.10E-03
8	7.62%	907	3.40E-03	16	7.12%	848	3.18E-03	24	1.85%	220	8.25E-04
								Total		11,915	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.17%	140	5.23E-04	9	7.18%	855	3.20E-03	17	7.48%	891	3.34E-03
2	0.47%	56	2.09E-04	10	4.47%	533	2.00E-03	18	8.16%	972	3.64E-03
3	0.53%	63	2.37E-04	11	4.71%	562	2.11E-03	19	5.64%	672	2.52E-03
4	0.24%	29	1.09E-04	12	5.92%	705	2.64E-03	20	4.23%	504	1.89E-03
5	0.51%	61	2.27E-04	13	6.13%	730	2.74E-03	21	3.21%	382	1.43E-03
6	0.92%	110	4.11E-04	14	6.04%	720	2.70E-03	22	3.28%	391	1.46E-03
7	3.71%	442	1.66E-03	15	6.97%	830	3.11E-03	23	2.45%	292	1.10E-03
8	7.62%	907	3.40E-03	16	7.12%	848	3.18E-03	24	1.85%	220	8.25E-04
								Total		11,915	

3111 Santa Rosa Ave, Santa Rosa, CA - Off-Site Residential
Cumulative Operation - Santa Rosa Avenue
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_EB_SAN	Santa Rosa Avenue Northbound	NB	2	709.5	0.44	13.3	44	1.3	40	11,915
TEVAP_WB_SAN	Santa Rosa Avenue Southbound	SB	2	709.5	0.44	13.3	44	1.3	40	11,915
									Total	23,830

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle per Hour (g/hour)	1.62724			
Emissions per Vehicle per Mile (g/VMT)	0.04068			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_SAN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.17%	140	6.95E-04	9	7.18%	855	4.26E-03	17	7.48%	891	4.44E-03
2	0.47%	56	2.77E-04	10	4.47%	533	2.65E-03	18	8.16%	972	4.84E-03
3	0.53%	63	3.15E-04	11	4.71%	562	2.80E-03	19	5.64%	672	3.35E-03
4	0.24%	29	1.45E-04	12	5.92%	705	3.51E-03	20	4.23%	504	2.51E-03
5	0.51%	61	3.02E-04	13	6.13%	730	3.64E-03	21	3.21%	382	1.90E-03
6	0.92%	110	5.46E-04	14	6.04%	720	3.58E-03	22	3.28%	391	1.95E-03
7	3.71%	442	2.20E-03	15	6.97%	830	4.14E-03	23	2.45%	292	1.46E-03
8	7.62%	907	4.52E-03	16	7.12%	848	4.23E-03	24	1.85%	220	1.10E-03
								Total		11,915	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.17%	140	6.95E-04	9	7.18%	855	4.26E-03	17	7.48%	891	4.44E-03
2	0.47%	56	2.77E-04	10	4.47%	533	2.65E-03	18	8.16%	972	4.84E-03
3	0.53%	63	3.15E-04	11	4.71%	562	2.80E-03	19	5.64%	672	3.35E-03
4	0.24%	29	1.45E-04	12	5.92%	705	3.51E-03	20	4.23%	504	2.51E-03
5	0.51%	61	3.02E-04	13	6.13%	730	3.64E-03	21	3.21%	382	1.90E-03
6	0.92%	110	5.46E-04	14	6.04%	720	3.58E-03	22	3.28%	391	1.95E-03
7	3.71%	442	2.20E-03	15	6.97%	830	4.14E-03	23	2.45%	292	1.46E-03
8	7.62%	907	4.52E-03	16	7.12%	848	4.23E-03	24	1.85%	220	1.10E-03
								Total		11,915	

3111 Santa Rosa Ave, Santa Rosa, CA - Off-Site Residential
Cumulative Operation - Santa Rosa Avenue
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_EB_SAN	Santa Rosa Avenue Northbound	NB	2	709.5	0.44	13.3	44	1.3	40	11,915
FUG_WB_SAN	Santa Rosa Avenue Southbound	SB	2	709.5	0.44	13.3	44	1.3	40	11,915
									Total	23,830

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00209			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01741			
Road Dust - Emissions per Vehicle (g/VMT)	0.01506			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03456			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.17%	140	5.91E-04	9	7.18%	855	3.62E-03	17	7.48%	891	3.77E-03
2	0.47%	56	2.36E-04	10	4.47%	533	2.25E-03	18	8.16%	972	4.11E-03
3	0.53%	63	2.67E-04	11	4.71%	562	2.38E-03	19	5.64%	672	2.84E-03
4	0.24%	29	1.23E-04	12	5.92%	705	2.99E-03	20	4.23%	504	2.13E-03
5	0.51%	61	2.57E-04	13	6.13%	730	3.09E-03	21	3.21%	382	1.62E-03
6	0.92%	110	4.64E-04	14	6.04%	720	3.05E-03	22	3.28%	391	1.65E-03
7	3.71%	442	1.87E-03	15	6.97%	830	3.51E-03	23	2.45%	292	1.24E-03
8	7.62%	907	3.84E-03	16	7.12%	848	3.59E-03	24	1.85%	220	9.32E-04
								Total		11,915	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.17%	140	5.91E-04	9	7.18%	855	3.62E-03	17	7.48%	891	3.77E-03
2	0.47%	56	2.36E-04	10	4.47%	533	2.25E-03	18	8.16%	972	4.11E-03
3	0.53%	63	2.67E-04	11	4.71%	562	2.38E-03	19	5.64%	672	2.84E-03
4	0.24%	29	1.23E-04	12	5.92%	705	2.99E-03	20	4.23%	504	2.13E-03
5	0.51%	61	2.57E-04	13	6.13%	730	3.09E-03	21	3.21%	382	1.62E-03
6	0.92%	110	4.64E-04	14	6.04%	720	3.05E-03	22	3.28%	391	1.65E-03
7	3.71%	442	1.87E-03	15	6.97%	830	3.51E-03	23	2.45%	292	1.24E-03
8	7.62%	907	3.84E-03	16	7.12%	848	3.59E-03	24	1.85%	220	9.32E-04
								Total		11,915	

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2022
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	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	0.0101	0.2734	0.2102

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	0.2082	0.1902	0.0180

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic Cancer Risk
Impacts at Construction Residential MEI - 1.5 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	0.0101	0.2734	0.2102	0.137	0.021	0.0010	0.16
1	1	0 - 1	2022	10	0.0101	0.2734	0.2102	1.657	0.256	0.0116	1.93
2	1	1 - 2	2023	10	0.0101	0.2734	0.2102	1.657	0.256	0.0116	1.93
3	1	2 - 3	2024	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
4	1	3 - 4	2025	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
5	1	4 - 5	2026	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
6	1	5 - 6	2027	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
7	1	6 - 7	2028	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
8	1	7 - 8	2029	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
9	1	8 - 9	2030	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
10	1	9 - 10	2031	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
11	1	10 - 11	2032	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
12	1	11 - 12	2033	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
13	1	12 - 13	2034	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
14	1	13 - 14	2035	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
15	1	14 - 15	2036	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
16	1	15 - 16	2037	3	0.0101	0.2734	0.2102	0.261	0.040	0.0018	0.30
17	1	16-17	2038	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
18	1	17-18	2039	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
19	1	18-19	2040	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
20	1	19-20	2041	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
21	1	20-21	2042	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
22	1	21-22	2043	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
23	1	22-23	2044	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
24	1	23-24	2045	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
25	1	24-25	2046	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
26	1	25-26	2047	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
27	1	26-27	2048	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
28	1	27-28	2049	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
29	1	28-29	2050	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
30	1	29-30	2051	1	0.0101	0.2734	0.2102	0.029	0.004	0.0002	0.03
Total Increased Cancer Risk								7.51	1.162	0.053	**8.72**

* Third trimester of pregnancy

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00202	0.19	0.21

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - Without MERV13 Filtration
On-Site Receptors (1.5 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	84
Receptor Height	1.5 meter
Receptor Distances	7 meter grid spacing

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	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	0.0190	0.7040	0.6202

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	0.6493	0.6067	0.0426

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - Without MERV13 Filtration
On-Site Receptors (4.5 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	84
Receptor Height	4.5 meter
Receptor Distances	7 meter grid spacing

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0180	0.6572	0.5787

Construction School MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.6060	0.5662	0.0397

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - Without MERV13 Filtration
On-Site Receptors (7.6 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	84
Receptor Height	7.6 meter
Receptor Distances	7 meter grid spacing

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0150	0.5533	0.4899

Construction School MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.5115	0.4781	0.0334

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - With MERV13 Filtration
On-Site Receptors (1.5 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	84
Receptor Height	1.5 meter
Receptor Distances	7 meter grid spacing

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	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	0.0057	0.7040	0.6202

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	0.1948	0.1820	0.0128

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - With MERV13 Filtration
On-Site Receptors (4.5 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	84
Receptor Height	4.5 meter
Receptor Distances	7 meter grid spacing

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0054	0.6572	0.5787

Construction School MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.1818	0.1699	0.0119

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - With MERV13 Filtration
On-Site Receptors (7.6 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	84
Receptor Height	7.6 meter
Receptor Distances	7 meter grid spacing

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0045	0.5533	0.4899

Construction School MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.1534	0.1434	0.0100

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic Cancer Risk
Impacts at On-Site 1st Floor Receptors - 1.5 meter receptor height
30 Year Residential Exposure - Without MERV13 Filtration

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	0.0190	0.7040	0.6202	0.259	0.055	0.0028	0.32
1	1	0 - 1	2024	10	0.0190	0.7040	0.6202	3.126	0.660	0.0343	3.82
2	1	1 - 2	2025	10	0.0190	0.7040	0.6202	3.126	0.660	0.0343	3.82
3	1	2 - 3	2026	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
4	1	3 - 4	2027	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
5	1	4 - 5	2028	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
6	1	5 - 6	2029	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
7	1	6 - 7	2030	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
8	1	7 - 8	2031	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
9	1	8 - 9	2032	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
10	1	9 - 10	2033	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
11	1	10 - 11	2034	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
12	1	11 - 12	2035	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
13	1	12 - 13	2036	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
14	1	13 - 14	2037	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
15	1	14 - 15	2038	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
16	1	15 - 16	2039	3	0.0190	0.7040	0.6202	0.492	0.104	0.0054	0.60
17	1	16-17	2040	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
18	1	17-18	2041	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
19	1	18-19	2042	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
20	1	19-20	2043	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
21	1	20-21	2044	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
22	1	21-22	2045	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
23	1	22-23	2046	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
24	1	23-24	2047	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
25	1	24-25	2048	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
26	1	25-26	2049	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
27	1	26-27	2050	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
28	1	27-28	2051	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
29	1	28-29	2052	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
30	1	29-30	2053	1	0.0190	0.7040	0.6202	0.055	0.012	0.0006	0.07
Total Increased Cancer Risk								14.16	2.991	0.155	**17.31**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00381	0.61	0.65

* Third trimester of pregnancy

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic Cancer Risk
Impacts at On-Site 2nd Floor Receptors - 4.5 meter receptor height
30 Year Residential Exposure - Without MERV13 Filtration

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	0.0180	0.6572	0.5787	0.244	0.051	0.0026	0.30
1	1	0 - 1	2024	10	0.0180	0.6572	0.5787	2.952	0.616	0.0320	3.60
2	1	1 - 2	2025	10	0.0180	0.6572	0.5787	2.952	0.616	0.0320	3.60
3	1	2 - 3	2024	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
4	1	3 - 4	2025	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
5	1	4 - 5	2026	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
6	1	5 - 6	2027	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
7	1	6 - 7	2028	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
8	1	7 - 8	2029	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
9	1	8 - 9	2030	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
10	1	9 - 10	2031	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
11	1	10 - 11	2032	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
12	1	11 - 12	2033	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
13	1	12 - 13	2034	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
14	1	13 - 14	2035	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
15	1	14 - 15	2036	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
16	1	15 - 16	2037	3	0.0180	0.6572	0.5787	0.465	0.097	0.0050	0.57
17	1	16-17	2038	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
18	1	17-18	2039	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
19	1	18-19	2040	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
20	1	19-20	2041	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
21	1	20-21	2042	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
22	1	21-22	2043	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
23	1	22-23	2044	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
24	1	23-24	2045	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
25	1	24-25	2046	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
26	1	25-26	2047	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
27	1	26-27	2048	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
28	1	27-28	2049	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
29	1	28-29	2050	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
30	1	29-30	2051	1	0.0180	0.6572	0.5787	0.052	0.011	0.0006	0.06
Total Increased Cancer Risk								13.37	2.793	0.145	**16.31**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00359	0.57	0.61

* Third trimester of pregnancy

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic Cancer Risk
Impacts at On-Site 2nd Floor Receptors - 7.6 meter receptor height
30 Year Residential Exposure - Without MERV13 Filtration

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*	2024	10	0.0150	0.5533	0.4899	0.204	0.043	0.0022	0.25
1	1	0 - 1	2024	10	0.0150	0.5533	0.4899	2.469	0.519	0.0271	3.01
2	1	1 - 2	2025	10	0.0150	0.5533	0.4899	2.469	0.519	0.0271	3.01
3	1	2 - 3	2026	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
4	1	3 - 4	2027	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
5	1	4 - 5	2028	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
6	1	5 - 6	2029	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
7	1	6 - 7	2030	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
8	1	7 - 8	2031	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
9	1	8 - 9	2032	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
10	1	9 - 10	2033	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
11	1	10 - 11	2034	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
12	1	11 - 12	2035	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
13	1	12 - 13	2036	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
14	1	13 - 14	2037	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
15	1	14 - 15	2038	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
16	1	15 - 16	2039	3	0.0150	0.5533	0.4899	0.389	0.082	0.0043	0.47
17	1	16-17	2040	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
18	1	17-18	2041	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
19	1	18-19	2042	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
20	1	19-20	2043	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
21	1	20-21	2044	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
22	1	21-22	2045	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
23	1	22-23	2046	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
24	1	23-24	2047	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
25	1	24-25	2048	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
26	1	25-26	2049	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
27	1	26-27	2050	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
28	1	27-28	2051	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
29	1	28-29	2052	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
30	1	29-30	2053	1	0.0150	0.5533	0.4899	0.043	0.009	0.0005	0.05
Total Increased Cancer Risk								11.19	2.351	0.123	**13.66**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00301	0.48	0.51

* Third trimester of pregnancy

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic Cancer Risk
Impacts at On-Site 1st Floor Receptors - 1.5 meter receptor height
30 Year Residential Exposure - With MERV13 Filtration

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*	2024	10	0.0057	0.7040	0.6202	0.078	0.055	0.0028	0.14
1	1	0 - 1	2024	10	0.0057	0.7040	0.6202	0.938	0.660	0.0343	1.63
2	1	1 - 2	2025	10	0.0057	0.7040	0.6202	0.938	0.660	0.0343	1.63
3	1	2 - 3	2026	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
4	1	3 - 4	2027	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
5	1	4 - 5	2028	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
6	1	5 - 6	2029	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
7	1	6 - 7	2030	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
8	1	7 - 8	2031	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
9	1	8 - 9	2032	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
10	1	9 - 10	2033	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
11	1	10 - 11	2034	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
12	1	11 - 12	2035	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
13	1	12 - 13	2036	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
14	1	13 - 14	2037	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
15	1	14 - 15	2038	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
16	1	15 - 16	2039	3	0.0057	0.7040	0.6202	0.148	0.104	0.0054	0.26
17	1	16-17	2040	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
18	1	17-18	2041	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
19	1	18-19	2042	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
20	1	19-20	2043	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
21	1	20-21	2044	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
22	1	21-22	2045	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
23	1	22-23	2046	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
24	1	23-24	2047	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
25	1	24-25	2048	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
26	1	25-26	2049	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
27	1	26-27	2050	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
28	1	27-28	2051	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
29	1	28-29	2052	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
30	1	29-30	2053	1	0.0057	0.7040	0.6202	0.016	0.012	0.0006	0.03
Total Increased Cancer Risk								4.25	2.991	0.155	**7.40**

* Third trimester of pregnancy

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00114	0.18	0.19

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic Cancer Risk
Impacts at On-Site 2nd Floor Receptors - 4.5 meter receptor height
30 Year Residential Exposure - With MERV13 Filtration

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*	2024	10	0.0054	0.6572	0.5787	0.073	0.051	0.0026	0.13
1	1	0 - 1	2024	10	0.0054	0.6572	0.5787	0.885	0.616	0.0320	1.53
2	1	1 - 2	2025	10	0.0054	0.6572	0.5787	0.885	0.616	0.0320	1.53
3	1	2 - 3	2024	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
4	1	3 - 4	2025	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
5	1	4 - 5	2026	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
6	1	5 - 6	2027	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
7	1	6 - 7	2028	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
8	1	7 - 8	2029	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
9	1	8 - 9	2030	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
10	1	9 - 10	2031	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
11	1	10 - 11	2032	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
12	1	11 - 12	2033	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
13	1	12 - 13	2034	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
14	1	13 - 14	2035	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
15	1	14 - 15	2036	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
16	1	15 - 16	2037	3	0.0054	0.6572	0.5787	0.139	0.097	0.0050	0.24
17	1	16-17	2038	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
18	1	17-18	2039	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
19	1	18-19	2040	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
20	1	19-20	2041	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
21	1	20-21	2042	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
22	1	21-22	2043	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
23	1	22-23	2044	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
24	1	23-24	2045	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
25	1	24-25	2046	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
26	1	25-26	2047	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
27	1	26-27	2048	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
28	1	27-28	2049	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
29	1	28-29	2050	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
30	1	29-30	2051	1	0.0054	0.6572	0.5787	0.015	0.011	0.0006	0.03
Total Increased Cancer Risk								4.01	2.793	0.145	**6.95**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00108	0.17	0.18

* Third trimester of pregnancy

3111 Santa Rosa Ave, Santa Rosa, CA - Highway 101 Traffic Cancer Risk
Impacts at On-Site 2nd Floor Receptors - 7.6 meter receptor height
30 Year Residential Exposure - With MERV13 Filtration

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*	2024	10	0.0045	0.5533	0.4899	0.061	0.043	0.0022	0.11
1	1	0 - 1	2024	10	0.0045	0.5533	0.4899	0.741	0.519	0.0271	1.29
2	1	1 - 2	2025	10	0.0045	0.5533	0.4899	0.741	0.519	0.0271	1.29
3	1	2 - 3	2024	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
4	1	3 - 4	2025	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
5	1	4 - 5	2026	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
6	1	5 - 6	2027	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
7	1	6 - 7	2028	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
8	1	7 - 8	2029	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
9	1	8 - 9	2030	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
10	1	9 - 10	2031	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
11	1	10 - 11	2032	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
12	1	11 - 12	2033	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
13	1	12 - 13	2034	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
14	1	13 - 14	2035	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
15	1	14 - 15	2036	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
16	1	15 - 16	2037	3	0.0045	0.5533	0.4899	0.117	0.082	0.0043	0.20
17	1	16-17	2038	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
18	1	17-18	2039	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
19	1	18-19	2040	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
20	1	19-20	2041	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
21	1	20-21	2042	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
22	1	21-22	2043	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
23	1	22-23	2044	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
24	1	23-24	2045	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
25	1	24-25	2046	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
26	1	25-26	2047	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
27	1	26-27	2048	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
28	1	27-28	2049	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
29	1	28-29	2050	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
30	1	29-30	2051	1	0.0045	0.5533	0.4899	0.013	0.009	0.0005	0.02
Total Increased Cancer Risk								3.36	2.351	0.123	**5.83**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00090	0.14	0.15

* Third trimester of pregnancy

3111 Santa Rosa Ave, Santa Rosa, CA - Santa Rosa Ave Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - Without MERV13 Filtration
On-Site Receptors (1.5 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	84
Receptor Height	1.5 meter
Receptor Distances	7 meter grid spacing

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0056	0.3644	0.4839

Construction School MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.4296	0.4114	0.0182

3111 Santa Rosa Ave, Santa Rosa, CA - Santa Rosa Ave Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - Without MERV13 Filtration
On-Site Receptors (4.5 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	84
Receptor Height	4.5 meter
Receptor Distances	7 meter grid spacing

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0048	0.2674	0.3550

Construction School MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.3152	0.3018	0.0133

3111 Santa Rosa Ave, Santa Rosa, CA - Santa Rosa Ave Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - Without MERV13 Filtration
On-Site Receptors (7.6 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	84
Receptor Height	7.6 meter
Receptor Distances	7 meter grid spacing

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0032	0.1518	0.2016

Construction School MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.1790	0.1714	0.0076

3111 Santa Rosa Ave, Santa Rosa, CA - Santa Rosa Ave Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - With MERV13 Filtration
On-Site Receptors (1.5 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	54
Receptor Height	1.5 meter
Receptor Distances	7 meter grid spacing

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0017	0.3644	0.4839

Construction School MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.1289	0.1234	0.0055

3111 Santa Rosa Ave, Santa Rosa, CA - Santa Rosa Ave Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - With MERV13 Filtration
On-Site Receptors (4.5 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	84
Receptor Height	4.5 meter
Receptor Distances	7 meter grid spacing

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0014	0.2674	0.3550

Construction School MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0946	0.0906	0.0040

3111 Santa Rosa Ave, Santa Rosa, CA - Santa Rosa Ave Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - With MERV13 Filtration
On-Site Receptors (7.6 meter receptor height)

Emission Year	2024
Receptor Information	Maximum On-Site Receptor
Number of Receptors	84
Receptor Height	7.6 meter
Receptor Distances	7 meter grid spacing

Meteorological Conditions

BAAQMD Sonoma Co. Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0010	0.1518	0.2016

Construction School MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0537	0.0514	0.0023

3111 Santa Rosa Ave, Santa Rosa, CA - Santa Rosa Avenue Traffic Cancer Risk
Impacts at On-Site 1st Floor Receptors - 1.5 meter receptor height
30 Year Residential Exposure - Without MERV13 Filtration

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	0.0056	0.3644	0.4839	0.076	0.028	0.0022	0.11
1	1	0 - 1	2024	10	0.0056	0.3644	0.4839	0.916	0.342	0.0267	1.28
2	1	1 - 2	2025	10	0.0056	0.3644	0.4839	0.916	0.342	0.0267	1.28
3	1	2 - 3	2026	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
4	1	3 - 4	2027	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
5	1	4 - 5	2028	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
6	1	5 - 6	2029	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
7	1	6 - 7	2030	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
8	1	7 - 8	2031	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
9	1	8 - 9	2032	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
10	1	9 - 10	2033	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
11	1	10 - 11	2034	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
12	1	11 - 12	2035	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
13	1	12 - 13	2036	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
14	1	13 - 14	2037	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
15	1	14 - 15	2038	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
16	1	15 - 16	2039	3	0.0056	0.3644	0.4839	0.144	0.054	0.0042	0.20
17	1	16-17	2040	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
18	1	17-18	2041	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
19	1	18-19	2042	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
20	1	19-20	2043	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
21	1	20-21	2044	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
22	1	21-22	2045	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
23	1	22-23	2046	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
24	1	23-24	2047	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
25	1	24-25	2048	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
26	1	25-26	2049	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
27	1	26-27	2050	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
28	1	27-28	2051	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
29	1	28-29	2052	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
30	1	29-30	2053	1	0.0056	0.3644	0.4839	0.016	0.006	0.0005	0.02
Total Increased Cancer Risk								4.15	1.548	0.121	**5.82**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.001	0.41	0.43

* Third trimester of pregnancy

3111 Santa Rosa Ave, Santa Rosa, CA - Santa Rosa Avenue Traffic Cancer Risk
Impacts at On-Site 2nd Floor Receptors - 4.5 meter receptor height
30 Year Residential Exposure - Without MERV13 Filtration

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*	2024	10	0.0048	0.2674	0.3550	0.065	0.021	0.0016	0.09
1	1	0 - 1	2024	10	0.0048	0.2674	0.3550	0.788	0.251	0.0196	1.06
2	1	1 - 2	2025	10	0.0048	0.2674	0.3550	0.788	0.251	0.0196	1.06
3	1	2 - 3	2025	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
4	1	3 - 4	2026	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
5	1	4 - 5	2027	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
6	1	5 - 6	2028	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
7	1	6 - 7	2029	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
8	1	7 - 8	2030	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
9	1	8 - 9	2031	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
10	1	9 - 10	2032	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
11	1	10 - 11	2033	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
12	1	11 - 12	2034	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
13	1	12 - 13	2035	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
14	1	13 - 14	2036	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
15	1	14 - 15	2037	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
16	1	15 - 16	2038	3	0.0048	0.2674	0.3550	0.124	0.039	0.0031	0.17
17	1	16-17	2039	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
18	1	17-18	2040	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
19	1	18-19	2041	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
20	1	19-20	2042	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
21	1	20-21	2043	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
22	1	21-22	2044	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
23	1	22-23	2045	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
24	1	23-24	2046	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
25	1	24-25	2047	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
26	1	25-26	2048	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
27	1	26-27	2049	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
28	1	27-28	2050	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
29	1	28-29	2051	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
30	1	29-30	2052	1	0.0048	0.2674	0.3550	0.014	0.004	0.0003	0.02
Total Increased Cancer Risk								3.57	1.136	0.089	**4.80**

* Third trimester of pregnancy

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.001	0.30	0.32

3111 Santa Rosa Ave, Santa Rosa, CA - Santa Rosa Avenue Traffic Cancer Risk
Impacts at On-Site 2nd Floor Receptors - 7.6 meter receptor height
30 Year Residential Exposure - Without MERV13 Filtration

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	0.0032	0.1518	0.2016	0.043	0.012	0.0009	0.06
1	1	0 - 1	2024	10	0.0032	0.1518	0.2016	0.521	0.142	0.0111	0.67
2	1	1 - 2	2025	10	0.0032	0.1518	0.2016	0.521	0.142	0.0111	0.67
3	1	2 - 3	2026	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
4	1	3 - 4	2027	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
5	1	4 - 5	2028	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
6	1	5 - 6	2029	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
7	1	6 - 7	2030	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
8	1	7 - 8	2031	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
9	1	8 - 9	2032	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
10	1	9 - 10	2033	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
11	1	10 - 11	2034	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
12	1	11 - 12	2035	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
13	1	12 - 13	2036	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
14	1	13 - 14	2037	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
15	1	14 - 15	2038	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
16	1	15 - 16	2039	3	0.0032	0.1518	0.2016	0.082	0.022	0.0018	0.11
17	1	16-17	2040	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
18	1	17-18	2041	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
19	1	18-19	2042	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
20	1	19-20	2043	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
21	1	20-21	2044	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
22	1	21-22	2045	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
23	1	22-23	2046	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
24	1	23-24	2047	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
25	1	24-25	2048	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
26	1	25-26	2049	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
27	1	26-27	2050	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
28	1	27-28	2051	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
29	1	28-29	2052	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
30	1	29-30	2053	1	0.0032	0.1518	0.2016	0.009	0.002	0.0002	0.01
Total Increased Cancer Risk								2.36	0.645	0.050	**3.05**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.001	0.17	0.18

* Third trimester of pregnancy

3111 Santa Rosa Ave, Santa Rosa, CA - Santa Rosa Avenue Traffic Cancer Risk
Impacts at On-Site 1st Floor Receptors - 1.5 meter receptor height
30 Year Residential Exposure - With MERV13 Filtration

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	0.0017	0.3644	0.4839	0.023	0.028	0.0022	0.05
1	1	0 - 1	2024	10	0.0017	0.3644	0.4839	0.275	0.342	0.0267	0.64
2	1	1 - 2	2025	10	0.0017	0.3644	0.4839	0.275	0.342	0.0267	0.64
3	1	2 - 3	2026	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
4	1	3 - 4	2027	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
5	1	4 - 5	2028	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
6	1	5 - 6	2029	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
7	1	6 - 7	2030	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
8	1	7 - 8	2031	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
9	1	8 - 9	2032	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
10	1	9 - 10	2033	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
11	1	10 - 11	2034	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
12	1	11 - 12	2035	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
13	1	12 - 13	2036	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
14	1	13 - 14	2037	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
15	1	14 - 15	2038	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
16	1	15 - 16	2039	3	0.0017	0.3644	0.4839	0.043	0.054	0.0042	0.10
17	1	16-17	2040	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
18	1	17-18	2041	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
19	1	18-19	2042	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
20	1	19-20	2043	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
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22	1	21-22	2045	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
23	1	22-23	2046	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
24	1	23-24	2047	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
25	1	24-25	2048	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
26	1	25-26	2049	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
27	1	26-27	2050	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
28	1	27-28	2051	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
29	1	28-29	2052	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
30	1	29-30	2053	1	0.0017	0.3644	0.4839	0.005	0.006	0.0005	0.01
Total Increased Cancer Risk								1.25	1.548	0.121	**2.92**

* Third trimester of pregnancy

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.000	0.12	0.13

3111 Santa Rosa Ave, Santa Rosa, CA - Santa Rosa Avenue Traffic Cancer Risk
Impacts at On-Site 2nd Floor Receptors - 4.5 meter receptor height
30 Year Residential Exposure - With MERV13 Filtration

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	0.0014	0.2674	0.3550	0.020	0.021	0.0016	0.04
1	1	0 - 1	2024	10	0.0014	0.2674	0.3550	0.237	0.251	0.0196	0.51
2	1	1 - 2	2025	10	0.0014	0.2674	0.3550	0.237	0.251	0.0196	0.51
3	1	2 - 3	2026	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
4	1	3 - 4	2027	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
5	1	4 - 5	2028	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
6	1	5 - 6	2029	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
7	1	6 - 7	2030	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
8	1	7 - 8	2031	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
9	1	8 - 9	2032	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
10	1	9 - 10	2033	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
11	1	10 - 11	2034	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
12	1	11 - 12	2035	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
13	1	12 - 13	2036	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
14	1	13 - 14	2037	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
15	1	14 - 15	2038	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
16	1	15 - 16	2039	3	0.0014	0.2674	0.3550	0.037	0.039	0.0031	0.08
17	1	16-17	2040	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
18	1	17-18	2041	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
19	1	18-19	2042	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
20	1	19-20	2043	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
21	1	20-21	2044	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
22	1	21-22	2045	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
23	1	22-23	2046	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
24	1	23-24	2047	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
25	1	24-25	2048	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
26	1	25-26	2049	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
27	1	26-27	2050	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
28	1	27-28	2051	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
29	1	28-29	2052	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
30	1	29-30	2053	1	0.0014	0.2674	0.3550	0.004	0.004	0.0003	0.01
Total Increased Cancer Risk								1.07	1.136	0.089	**2.30**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.000	0.09	0.09

* Third trimester of pregnancy

3111 Santa Rosa Ave, Santa Rosa, CA - Santa Rosa Avenue Traffic Cancer Risk
Impacts at On-Site 2nd Floor Receptors - 7.6 meter receptor height
30 Year Residential Exposure - With MERV13 Filtration

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*	2024	10	0.0010	0.1518	0.2016	0.013	0.012	0.0009	0.03
1	1	0 - 1	2024	10	0.0010	0.1518	0.2016	0.156	0.142	0.0111	0.31
2	1	1 - 2	2025	10	0.0010	0.1518	0.2016	0.156	0.142	0.0111	0.31
3	1	2 - 3	2026	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
4	1	3 - 4	2027	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
5	1	4 - 5	2028	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
6	1	5 - 6	2029	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
7	1	6 - 7	2030	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
8	1	7 - 8	2031	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
9	1	8 - 9	2032	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
10	1	9 - 10	2033	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
11	1	10 - 11	2034	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
12	1	11 - 12	2035	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
13	1	12 - 13	2036	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
14	1	13 - 14	2037	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
15	1	14 - 15	2038	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
16	1	15 - 16	2039	3	0.0010	0.1518	0.2016	0.025	0.022	0.0018	0.05
17	1	16-17	2040	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
18	1	17-18	2041	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
19	1	18-19	2042	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
20	1	19-20	2043	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
21	1	20-21	2044	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
22	1	21-22	2045	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
23	1	22-23	2046	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
24	1	23-24	2047	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
25	1	24-25	2048	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
26	1	25-26	2049	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
27	1	26-27	2050	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
28	1	27-28	2051	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
29	1	28-29	2052	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
30	1	29-30	2053	1	0.0010	0.1518	0.2016	0.003	0.002	0.0002	0.01
Total Increased Cancer Risk								0.71	0.645	0.050	**1.40**

* Third trimester of pregnancy

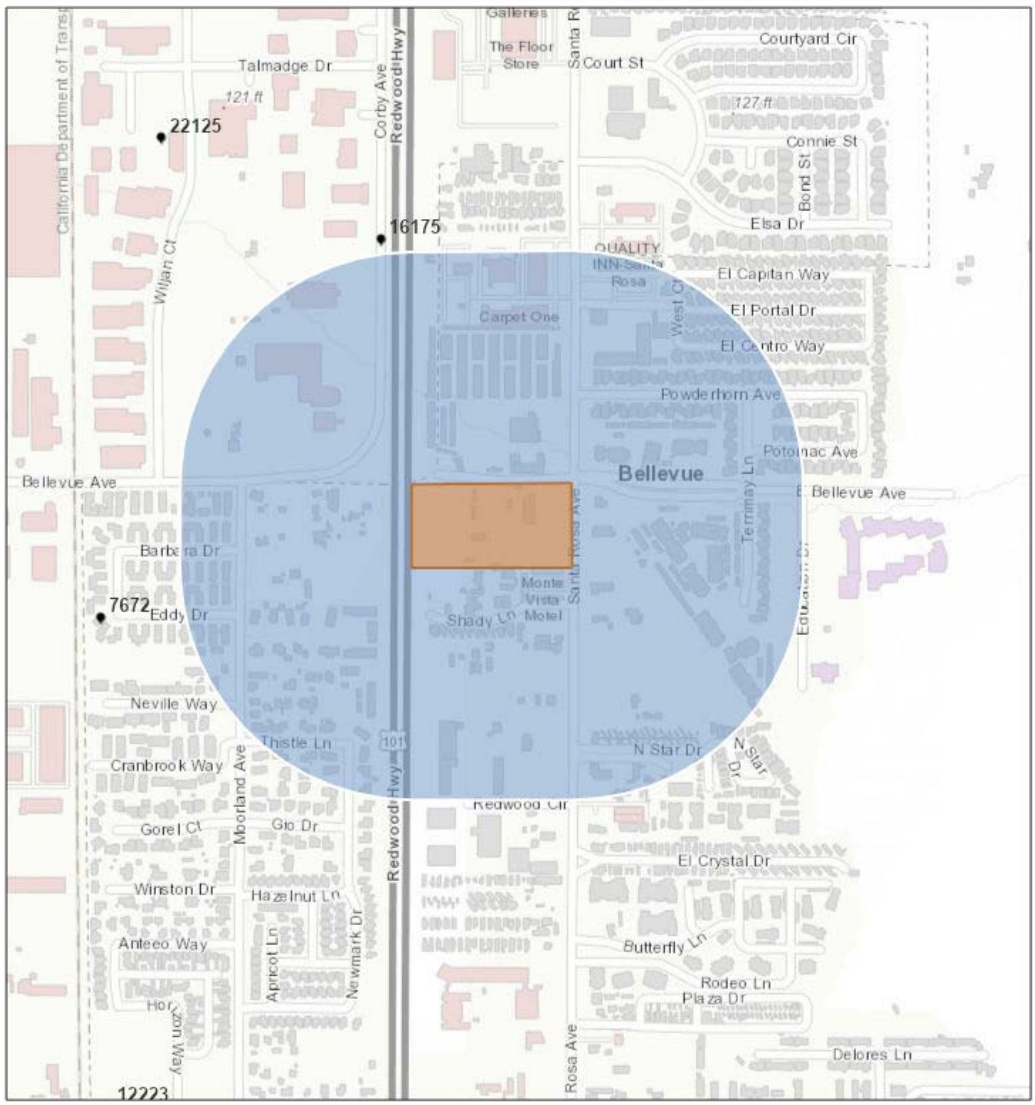
Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.000	0.05	0.05

Stationary Source Risk & Hazards Screening Report

Area of Interest (AOI) Information

Area : 5,495,801.85 ft²

Jul 7 2021 14:16:31 Eastern Daylight Time



Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Facilities 2018	0	N/A	N/A

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: Santa Rosa Climate Action Plan New Development Checklist

APPENDIX E: CAP NEW DEVELOPMENT CHECKLIST

To ensure new development projects are compliant with the City's Climate Action Plan, the following checklist has been developed. This checklist should be filled out for each new project, subject to discretionary review, to allow new development to find a less than significant impact for greenhouse gas emissions in the environmental review process.

#	Description	Compliance			
		Complies	Does Not Comply	N/A	See Discussion
1.1.1	Comply with CALGreen Tier 1 standards*				
1.1.3	After 2020, all new development will utilize zero net electricity*				
1.3.1	Install real-time energy monitors to track energy use*				
1.4.2	Comply with the City's tree preservation ordinance*				
1.4.3	Provide public & private trees in compliance with the Zoning Code*				
1.5	Install new sidewalks and paving with high solar reflectivity materials*				
2.1.3	Pre-wire and pre-plumb for solar thermal or PV systems				
3.1.2	Support implementation of station plans and corridor plans				
3.2.1	Provide on-site services such as ATMs or dry cleaning to site users				
3.2.2	Improve non-vehicular network to promote walking, biking				
3.2.3	Support mixed-use, higher-density development near services				
3.3.1	Provide affordable housing near transit				
3.5.1	Unbundle parking from property cost				
3.6.1	Install calming features to improve ped/bike experience				
4.1.1	Implement the Bicycle and Pedestrian Master Plan				
4.1.2	Install bicycle parking consistent with regulations*				
4.1.3	Provide bicycle safety training to residents, employees, motorists				
4.2.2	Provide safe spaces to wait for bus arrival				

NEW DEVELOPMENT CHECKLIST

#	Description	Compliance			
		Complies	Does Not Comply	N/A	See Discussion
4.3.2	Work with large employers to provide rideshare programs				
4.3.3	Consider expanding employee programs promoting transit use				
4.3.4	Provide awards for employee use of alternative commute options				
4.3.5	Encourage new employers of 50+ to provide subsidized transit passes*				
4.3.7	Provide space for additional park-and-ride lots				
4.5.1	Include facilities for employees that promote telecommuting				
5.1.2	Install electric vehicle charging equipment				
5.2.1	Provide alternative fuels at new refueling stations*				
6.1.3	Increase diversion of construction waste*				
7.1.1	Reduce potable water use for outdoor landscaping*				
7.1.3	Use water meters which track real-time water use*				
7.3.2	Meet on-site meter separation requirements in locations with current or future recycled water capabilities*				
8.1.3	Establish community gardens and urban farms				
9.1.2	Provide outdoor electrical outlets for charging lawn equipment				
9.1.3	Install low water use landscapes*				
9.2.1	Minimize construction equipment idling time to 5 minutes or less*				
9.2.2	Maintain construction equipment per manufacturer's specs*				
9.2.3	Limit GHG construction equipment emissions by using electrified equipment or alternative fuels*				

**To be in compliance with the CAP, all measures denoted with an asterisk are required in all new development projects unless otherwise specified. If a project cannot meet one or more of the mandatory requirements, substitutions may be made from other measures listed at the discretion of the Community Development Director.*

DISCUSSION (PLEASE LIST POLICY #)