THE VERANDA AT INDIAN SPRINGS AIR QUALITY AND GREENHOUSE GAS EMISSIONS ASSESSMENT

Calistoga, California

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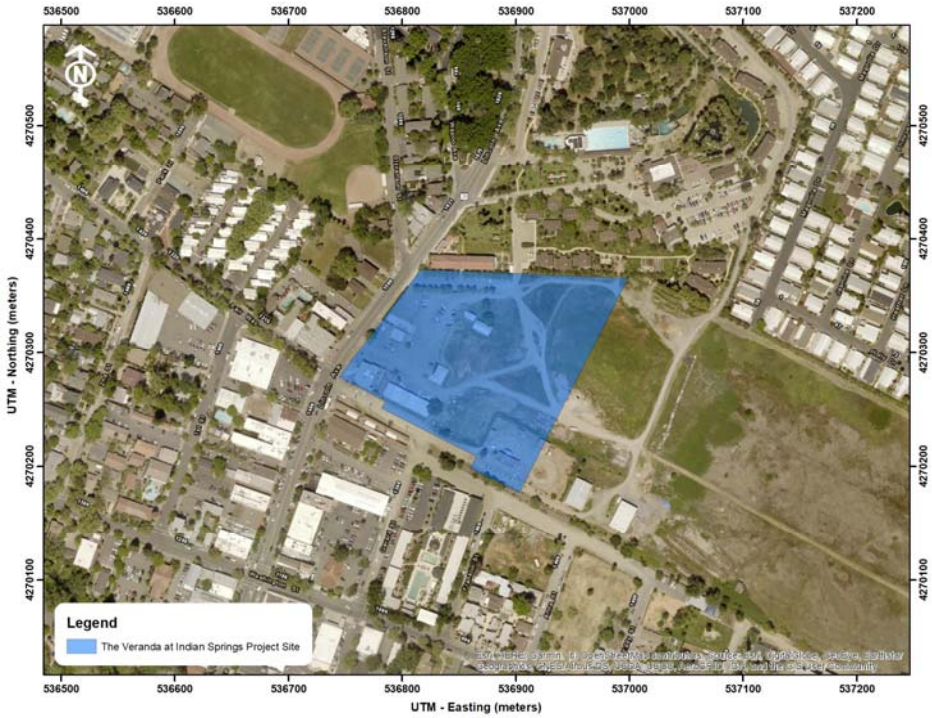
INTRODUCTION

The purpose of this report is to address air quality and greenhouse gas (GHG) impacts associated with the proposed hotel at 1522/1510/1506/1502/1504 Lincoln Avenue in Calistoga, California. The air quality impacts would be associated with the demolition of the existing uses at the site, construction of the new buildings and infrastructure, and operation of the project. Air pollutants and GHG emissions associated with construction and operation of the project were predicted using models. In addition, the potential project community risk impacts and the impact form the existing toxic air contaminant (TAC) sources affecting the nearby 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 proposed project is an expansion to the Indian Springs Calistoga resort, which is adjacent to the project site. The project would include 96 hotel rooms, 2,608 square feet (sf) of retail, 2,677 sf of mercantile marketplace, 3,437 sf of restaurant/bar space, and 4,217 sf of rooftop longue. The project would also provide 233 parking spaces. The project also proposes off-site improvements including an emergency vehicle access road connecting the Calistoga Springs mobile home park to the Fair Way Extension, a new street connection between the Fair Way Extension and Gerard Street, and a public plaza in the City-owned parking lot behind the Calistoga Train Deport. Figure 1 shows the project site and the surrounding project area.

Figure 1. Project Site and the Surrounding Area



[1] Bay Area Quality Management District, 2017. *California Environmental Quality Act Air Quality Guidelines*. May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

SETTING

The project site is in the City of Calistoga in Napa County and within 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 (O_3), respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High O_3 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 O_3 levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce O_3 levels. The highest O_3 levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High O_3 levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

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

Toxic Air Contaminants

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

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

Regulatory Agencies

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has recently published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.

Regulatory Setting

Federal Regulations

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

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

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

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

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

State Regulations

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

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

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

Bay Area Air Quality Management District (BAAQMD)

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

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;

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

enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

The BAAQMD California Environmental Quality Act (*CEQA) Air Quality Guidelines*[4] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. *Attachment 1* includes detailed community risk modeling methodology.

City of Calistoga General Plan

The following objectives and policies contained in the City's General Plan[5] are applicable to air quality and the proposed project:

> Objective LU 3.2: Ensure that new development complements Calistoga's small town rural character and minimizes impacts on the environment.
>
> - *Policy P3.2-2*: The use of "green construction" and land development techniques shall be encouraged as a means to reduce the environmental impacts of construction activity.
>
> Objective CIR-1.3: Coordinate the provision of circulation facilities with new development.
>
> - *Policy P1.3-1*: New development shall be designed to the extent possible with streets that continue the city's existing grid pattern, which allows through traffic and provides multiple connections to arterial streets.
> - *Policy P1.3-2*: New development shall provide sidewalks as needed to close gaps in the city's active transportation network. These gap closures may include off-site locations if the closure improves pedestrian connectivity from the new development to schools or other activity centers.
> - *Policy P1.3-3*: New development shall provide bicycle improvements called for in the Active Transportation Plan.

[4] Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.
[5] City of Calistoga, 2003, updated 2014 and 2015. *City of Calistoga General Plan.*

Objective OSC-6.1: Minimize air pollution emissions.

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- *Policy P6.1-1*: The City should support efforts to reduce vehicular emissions in the Calistoga Planning area by reducing congestion and dependence on automobile related forms of transportation.

- *Policy P6.1-2*: Growth and development types that can inhibit air quality goals should be monitored and controlled, and the approval of development should be conditional on the mitigation of significant adverse impacts to air quality.

- *Policy P6.1-3*: The City shall support the Bay Area Air Quality Management District in the implementation of reasonable and feasible new regulations related to the improvement of air quality throughout the Napa Valley.

- *Policy P6.1-5*: The City shall minimize emissions from construction activities by implementing all feasible, cost effective measures to control dust and PM_{10}, as defined by BAAQMD. These measures include clean-burning fuels and tuning engines to minimize pollution.

Objective OSC-7.1: Minimize Calistoga's contribution to impacts on the global environment such as dependence on fossil fuels, consumption of non-renewable resources and discharge of toxins and pollutants.

- *Policy P7.1-1*: The City shall promote the conservation of non-renewable energy resources and encourage the use of solar energy.

- *Policy P7.1-3*: The City shall promote decreased reliance on motor vehicle travel through effective land use policies, improved public transit and facilities to accommodate bicycle and pedestrian modes of travel.

- *Policy P7.1-4*: New building construction to minimize consumption of energy resources shall be encouraged through adoption of energy-efficient building codes and regulations.

- *Policy P7.1-5*: The City shall encourage new development to minimize impacts on the local environment.

Sensitive Receptors

Some groups of people are more affected by air pollution than others. The State has identified the following people who are most likely to be affected by air pollution: children under 14, 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. The closest sensitive receptors are single family residences west of the project site, across Lincoln Avenue and a mobile home park northeast of the project site. Additionally, Calistoga State Preschool, Palisades High School, and Calistoga Junior-Senior High School are all within 1,000 feet of the project site. This project would not introduce new permanent sensitive receptors within the project area.

Significance Thresholds

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

Table 1. BAAQMD Air Quality Significance Thresholds

Criteria Air Pollutant	**Construction Thresholds**	**Operational Thresholds**	
	Average Daily Emissions (lbs./day)	**Average Daily Emissions (lbs./day)**	**Annual Average Emissions (tons/year)**
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1,000-foot zone of influence)**	
Excess Cancer Risk	>10 per one million	>100 per one million	
Hazard Index	>1.0	>10.0	
Incremental annual $PM_{2.5}$	>0.3 µg/m^3	>0.8 µg/m^3	
Greenhouse Gas Emissions			
Land Use Projects – direct and indirect emissions		Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons annually or 4.6 metric tons per capita (for 2020) *	

Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases. *BAAQMD does not have a recommended post-2020 GHG threshold. The adjusted thresholds are explained in more detail in the GHG discussion.

AIR QUALITY IMPACTS AND MITIGATION MEASURES

Impact AIR-1: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

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

Emissions Modeling

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from construction and operation of the site assuming full build-out of the project. The project land use types and size, and anticipated construction schedule were input to CalEEMod. Operational emissions were modeled separately for two runs that included existing uses and the proposed project. The model output from CalEEMod along with construction inputs are included as *Attachment 2*.

Construction Period Emissions

Equipment Emissions

CalEEMod was used to provide emission estimates for on-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 proposed project land uses were input into CalEEMod as described in Table 2.

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Building Floor Area (sf)
Hotel	112.17	1000sqft	121,165
Quality Restaurant	3.44	1000sqft	3,437
Retail	5.29	1000sqft	5,285
Parking Lot	233	Spaces	
Notes: Project acreage equals approximately 7 acres			

A construction build-out scenario, including equipment list and phases, was based on CalEEMod defaults. Construction was assumed to start in January 2021. However, construction trip and hauling information was based information provided by the project applicant. Traffic generated by construction, which included worker trips, vendor deliveries and material hauling trip were

computed separately using the CARB EMFAC2017 model (discussed below). All other construction inputs were based on the CalEEMod model.

Construction Traffic Emissions

The latest version of the CalEEMod model is based on the older version of the CARB EMission FACtor (EMFAC) 2014 motor vehicle emission factor model. This model has been superseded by the EMFAC2017 model; however, CalEEMod has not been updated to include EMFAC2017. Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the estimate of demolition material to be exported, soil material imported and/or exported to the site, and the estimate of cement and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily rate by the number of days in that phase. Haul trips for demolition were estimated from the provided demolition tonnage by assuming each truck could carry 10 tons per load. The number of concrete and asphalt round haul trips were provided for the project and converted to total trips by multiplying by two.

The traffic information was combined with EMFAC2017 motor vehicle emissions factors. The latest version of the model made available by CARB is EMFAC2017[6]. EMFAC2017 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod default assumptions, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trucks, 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, 6.6 miles for vendor trips and 20 miles for hauling (demolition material export and soil import/export). Since CalEEMod does not address cement or asphalt trucks, these were treated as vendor travel distances. Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. Onroad emissions for 2021 and 2022 were used in these calculations. Table 3 provides the traffic inputs that were combined with the EMFAC2017 emission database to compute vehicle emissions.

[6] See CARB's EMFAC2017 Web Database at https://www.arb.ca.gov/emfac/2017/, accessed May 1, 2018

Table 3. Construction Traffic Data Used for EMFAC2017 Model Runs

CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Daily Worker Rate[1]	Daily Vendor Rate[1]	Total Haul	
Vehicle mix[1]	70.5% LDA 6.9% LDT1 22.6% LDT2	40% MHDT 60% HHDT	100% HDDT	
Trip Length (miles)	10.8	6.6	20.0 Demo 6.6 Cement/Asphalt	Truck Idle Time = 5 minutes
Demolition	18	-	129	28,400 sf of existing buildings[2]
Site Preparation	20	-	-	
Grading	13	-	1,750	7,000 CY Export 7,000 CY Import
Trenching/Foundation	8	-	-	-
Architectural Coating	18	-	-	-
Building Construction	89	35	700	700 Total Trips
Paving/Landscaping	20	-	200	200 Total Trips

Notes:
[1] Based on 2021 EMFAC2017 VMT-based fleet mix for Napa County.
[2] Based on estimate made using Google Earth measurements.

Summary of Computed Construction Period Emissions

Average daily emissions were computed by dividing the total construction emissions by the number of construction workdays. The estimated default construction schedule assumes that the project would be built out over a period of approximately 15 months beginning in January 2021, or an estimated 321 construction workdays, assuming 5 construction days per week. 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 project emissions would not exceed the BAAQMD significance thresholds.

Table 4. Project Construction Period Emissions

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total construction emissions (tons)	1.5 tons	3.4 tons	0.2 tons	0.2 tons
Average daily emissions (pounds/day)[1]	**9.5 lbs.**	**21.5 lbs.**	**1.2 lbs.[2]**	**1.0 lb.[2]**
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

[1]Assumes 320 workdays. [2]Difference in average daily emissions due to rounding

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 (which is consistent with the City of Calistoga's*

General Plan Policy P6.1-5) *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 practicable. Building pads shall be laid as soon as practicable 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 included above would be consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines. Mitigation measure AQ-1 would ensure that construction related air quality impacts are reduced to *less than significant* levels.

Operational Period Emissions

The CalEEMod model was used to compute operational air emissions from the project. These emissions would be generated primarily from traffic generated to serve future employees, vendors and customers. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from these types of uses. CalEEMod computed emissions from operation of the proposed project assuming full build-out.

Land Uses

The same land uses described in Table 2 were used in the operational period emissions model.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest the project could possibly be constructed and begin fully operating would be late March 2022. Therefore, and analysis year of 2023 was selected to estimate operational emissions. Emissions associated with build-out later than 2023 would be lower.

EMFAC2017 Adjustments

The vehicle emission factors and fleet mix used in CalEEMod are based on EMFAC2014, which is an older CARB emission inventory for on-road and off-road mobile sources. Since the release of CalEEMod Version 2016.3.2, new emission factors have been produced by CARB. EMFAC2017 became available for use in March 2018 and approved by the EPA in August 2019. It includes the latest data on California's car and truck fleets and travel activity. Additionally, CARB has recently released EMFAC off-model adjustment factors to account for the Safer Affordable Efficient (SAFE) Vehicle Rule Part one (See *Attachment 3*).[7] The SAFE vehicle Rule Part One revoked California's authority to set its own GHG emission standards and set zero emission vehicle mandates in California. As a result of this ruling, mobile criteria pollutant emissions would increase. Therefore, the CalEEMod vehicle emission factors and fleet mix were updated with the emission rates and fleet mix from EMFAC2017, which were adjusted with the CARB EMFAC off-model adjustment factors. On-road emission rates from 2023 were used to compute updated emission rates and fleet mix. More details about the updates in emissions calculation methodologies and data are available in the EMFAC2017 Technical Support Document.[8]

Trip Generation Rates

Default trip lengths and trip types specified by CalEEMod were used. However, CalEEMod allows

[7] 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
[8] See CARB 2018: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac

the user to enter specific vehicle trip generation rates. Therefore, the project-specific daily trip generation rates provided by the traffic consultant were used in the model.[9]

The rate for "Hotel" (8.36 daily trips per room) were applied to the rooms and, while it is common for hotels to have accessory space, the accessory uses proposed for this project would be open to the public and more expansive than a typical hotel. Therefore, specific trip generation rates were applied for the "Quality Restaurant" space (83.84 daily trips per 1,000 sf) and the "Specialty Retail" (44.32 daily trips per 1,000 sf) spaces. Daily trip generation rate for these spaces were reduced by 19% to account for the internal trip capture that would occur as hotel guests use the accessory spaces at the property. The Saturday and Sunday trip rates were assumed to be the weekday rate adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips to the default weekday rate. The default trip lengths and trip types specified by CalEEMod were used.

Energy

CalEEMod defaults for energy use were used, which include the 2016 Title 24 Building Standards. GHG emissions modeling includes those indirect emissions from electricity consumption. The electricity produced emission rate was modified in CalEEMod. CalEEMod has a default emission factor of 641.3 pounds of CO_2 per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. PG&E published in 2019 emissions rates for 2010 through 2017, which showed the emission rate for delivered electricity had been reduced to 210 pounds CO2 per megawatt of electricity delivered in the year 2017.[10] This intensity factor was used in the model.

Other Inputs

Default model assumptions for emissions associated with solid waste generation. Water/wastewater use were changed to 100% aerobic conditions to represent wastewater treatment plant conditions.

Existing Land Uses

The current site is vacant with some single-story structures. It was assumed that the existing land uses are not active, so an existing use model was not computed.

[9] W-Trans, 2020. *Traffic Impact Study Assumptions for The Veranda at Indian Springs Memorandum*. February.
[10] PG&E, 2019. *Corporate Responsibility and Sustainability Report*. Web: http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf

Summary of Computed Operational Period Emissions

Annual emissions were predicted using CalEEMod and daily emissions were estimating assuming 365 days of operation. Table 5 shows average daily construction 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 and impacts would be *less than significant*.

Table 5. Project Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2023 Project Operational Emissions (*tons/year*)	1.5 tons	1.2 tons	0.8 tons	0.2 tons
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	*No*	*No*	*No*	*No*
2023 Project Operational Emissions (*pounds/day*)[1]	8.4 lbs.	6.7 lbs.	4.4 lbs.	1.3 lbs.
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	*No*	*No*	*No*	*No*

Notes: [1] Assumes 365-day operation.

Impact AIR-2: Expose sensitive receptors to substantial pollutant concentrations?

Project impacts related to increased community risk would occur by introducing a new sources of TAC emissions with the potential to adversely affect existing sensitive receptors in the project vicinity. This project would introduce new sources of TACs during construction (i.e. on-site construction and truck hauling emissions) and operation (i.e. project traffic). However, the traffic generated by the project would consist of mostly light-duty vehicles that are not a source of substantial TACs or $PM_{2.5}$.

However, project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. There are also several sources of existing TACs and localized air pollutants in the vicinity of the project. Therefore, project impacts to existing sensitive receptors were addressed for temporary construction activities. The impact of the existing sources of TAC was also assessed in terms of the cumulative risk that includes the project contribution.

Community risk impacts were addressed by predicting increased lifetime cancer risk, the increase in annual $PM_{2.5}$ concentrations and computing the Hazard Index (HI) for non-cancer health risks. This involved the modeling of TAC and $PM_{2.5}$ emissions, dispersion modeling and cancer risk computations. The methodology for computing community risks impacts is contained in *Attachment 1*.

Community Risks from Project Construction

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. Although it was concluded in the previous sections (see Table 4) that construction exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations, construction exhaust emissions may still pose health risks for sensitive receptors such as surrounding residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. 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 $PM_{2.5}$.[11]

Construction Emissions

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages of 0.1582 tons (316 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. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.0864 tons (173 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was also used to predict concentrations of DPM and $PM_{2.5}$ concentrations at existing 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.[12] The AERMOD modeling utilized two area sources to represent the on-site construction emissions, one for exhaust emissions and one for fugitive dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 20 feet (6 meters) was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 7 feet (2 meters) was used for the area source. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Construction emissions were modeled as occurring daily between 7:00 a.m. to 4:00 p.m., when the majority of construction would occur.

The modeling used a 5-year meteorological data set (2009-2013) from the Sonoma County Airport prepared for use with the AERMOD model by CARB. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2021-2022 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptor locations. Receptor heights of 5 feet (1.5 meters) were used to represent the breathing heights of residents in single-story residences and a nearby high school, while a receptor height 3 feet (1 meter) was used for children attending a nearby preschool.

The 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 small children to cancer causing TACs. Infant and adult exposures were assumed to occur at all residences during the entire construction period, while child exposure

[11] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.
[12] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

was assumed at the nearby schools. *Attachment 3* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

Summary of Construction TAC Risks and Hazards

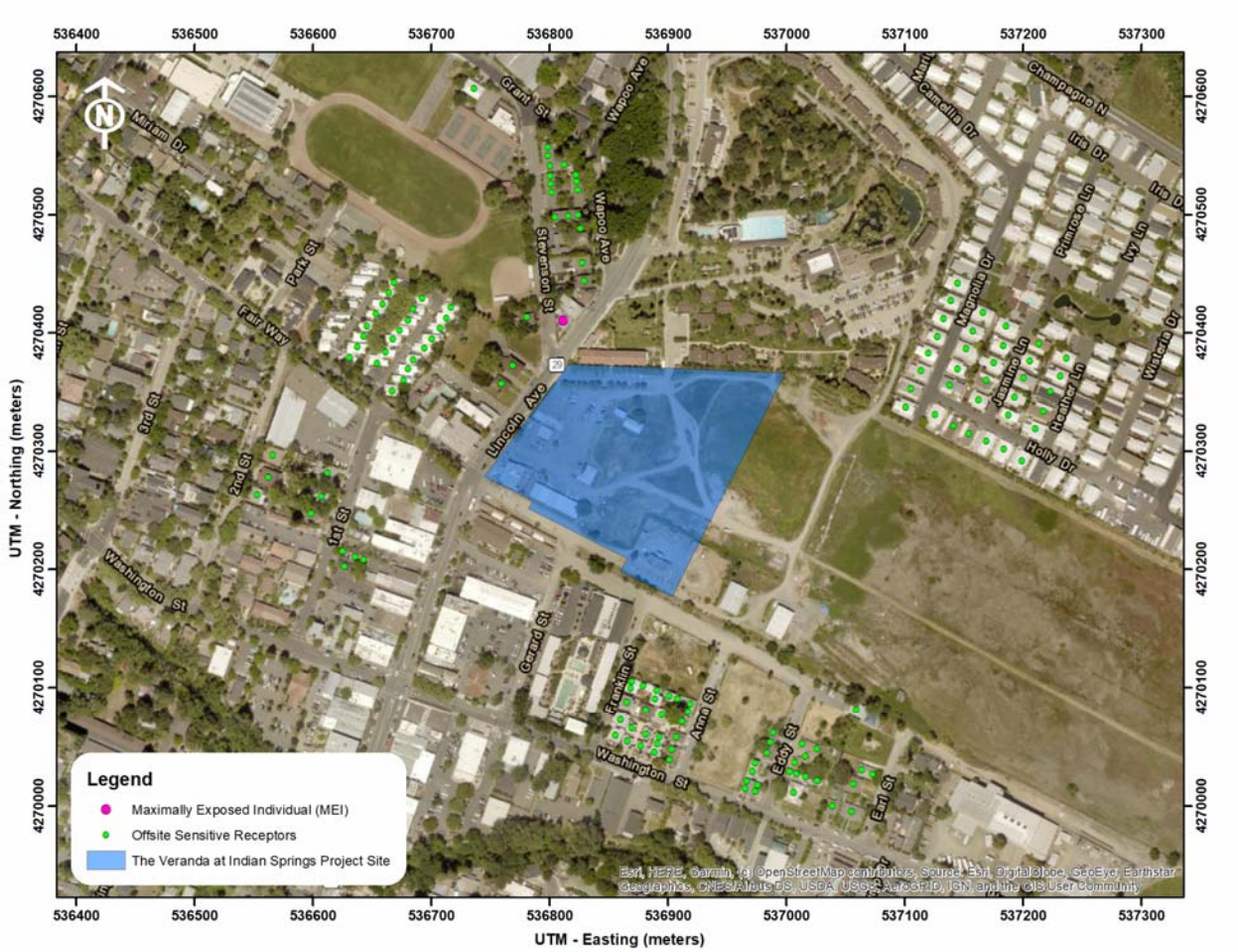
Figure 2 shows the locations of the maximum-modeled DPM and $PM_{2.5}$ concentrations from construction activities. The maximum concentrations for both TACs occurred on at a single-family residence north of the project site at the corner of Stevenson Street and Lincoln Avenue. The maximum increased cancer risk at the location of the maximally exposed individual (MEI) was calculated using the annual modeled DPM concentration and using BAAQMD recommended methods for calculation health risks. The increased cancer risk and annual $PM_{2.5}$ concentration would exceed the BAAQMD single-source thresholds for community risks. The HI value, unmitigated or mitigated, would not exceed the BAAQMD single-source threshold. Table 6 lists the community risks from construction at the MEI. *Mitigation Measure AQ-2 would reduce these risks and hazards to a level below the exceedance thresholds. Therefore, impacts would be less than significant.*

Additionally, construction risks and hazards were calculated for student exposure at the Calistoga State Preschool (1432 Eddy Street), at Palisades High School (1506 Grant Street) and at Calistoga Junior Senior High School (1608 Lake Street). At the preschool, the predicted increased cancer risk would be 1.2 per million, the annual $PM_{2.5}$ concentration would be 0.04 $\mu g/m^3$, and the HI value would be less than 0.01. At the high schools, the predicted increased cancer risk would be 1.3 per million, and the annual $PM_{2.5}$ concentration would be 0.04, and the HI value would be 0.01. These risks and hazards are below the BAAQMD single-source thresholds, and construction TAC emissions would not be an exceedance at either school.

Table 6. Construction Risk Impacts at the Offsite Residential MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Construction	Unmitigated	37.4 (infant)	0.32	0.04
	Mitigated	5.5 (infant)	0.07	0.01
BAAQMD Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
	Exceed Threshold?			
	Unmitigated	***Yes***	***Yes***	*No*
	Mitigated	*No*	*No*	*No*

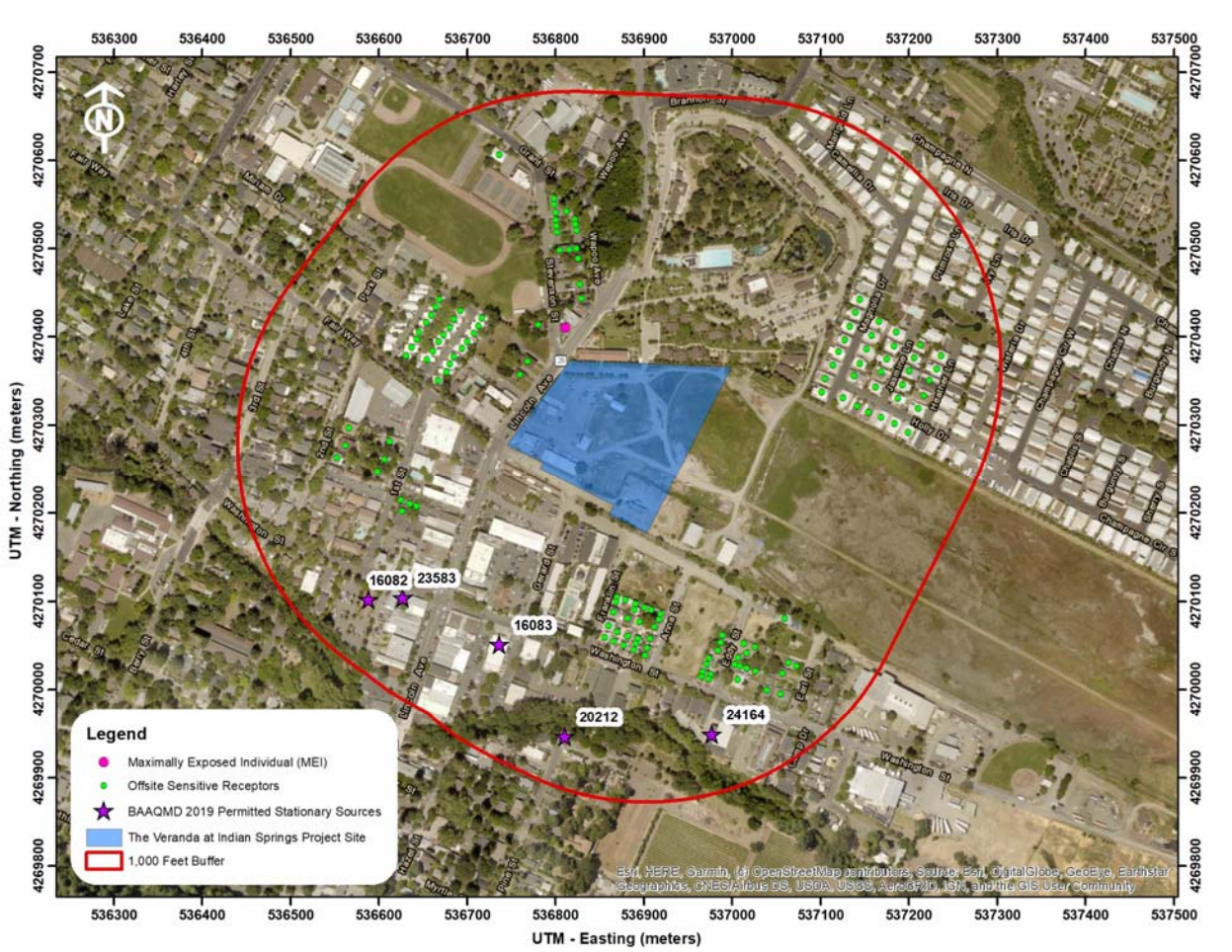
Figure 2. Project Construction Site and Locations of Off-Site Sensitive Receptors and Maximum TAC Impacts



Cumulative Community Risks from All TAC Sources at the 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 freeways or highways, busy surface streets that have an average daily traffic (ADT) volume that exceeds 10,000 vehicle, and stationary sources identified by BAAQMD. A review of the project area found that traffic on all nearby local roadways would have an ADT of less than 10,000 daily vehicles. A review of BAAQMD's stationary source Google Earth map tool identified five stationary sources with the potential to affect the MEI. Figure 3 shows the location of the sources affecting the MEI. Community risk impacts from these sources upon the MEI reported in Table 7. Details of the modeling and community risk calculations are included in *Attachment 5.*

Figure 3. Project Site and Nearby TAC and $PM_{2.5}$ Sources



Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2018* GIS website[13]. This mapping tool identifies the location of nearby stationary sources and their estimated risk and hazard impacts. Five sources were identified using this tool with three of the sources having a diesel engine generator and the other sources being coffee roasters. A Stationary Source Information Form (SSIF) containing the identified. The screening level risks and hazards for all diesel generators sources were adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. The risks and hazards from the coffee roaster sources were not adjusted for distance.

Summary of Cumulative Risks at the MEI

Table 7 reports both the project and cumulative community risk impacts. The project's community risk caused by project construction and operation activities would not exceed the single-source thresholds. Additionally, the combined annual increased cancer risk, maximum $PM_{2.5}$ concentration, and hazard risk values would not exceed the cumulative threshold. Therefore, the project would not contribute to a cumulative risk impact and impacts would be *less than significant*.

Table 7. Cumulative Community Risk Impacts from All TAC Sources at the MEI

Source	Maximum Cancer Risk (per million)	$PM_{2.5}$ concentration ($\mu g/m^3$)	Hazard Index
Project Impacts			
Project Construction Unmitigated	37.4 (infant)	0.32	0.04
Mitigated	5.5 (infant)	0.07	0.01
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?			
Unmitigated	***Yes***	***Yes***	*No*
Mitigated	*No*	*No*	*No*
Cumulative Sources			
City of Calistoga - Police Department (Plant #16082, Diesel Generator), MEI over 1,000 feet	0.1	-	-
City of Calistoga - Fire Department (Plant #16083, Diesel Generator), MEI over 1,000 feet	0.2	<0.01	-
City of Calistoga (Plant #20212, Diesel Generator)	<0.1	-	-
Yo el Rey Roasting (Plant #23583, Coffee Roaster)	-	0.01	-
Calistoga Coffee Company LLC (Plant #24164, Coffee Roaster)	-	-	-
Combined Sources			
Unmitigated	37.8	<0.34	<0.04
Mitigated	5.9	0.09	0.01
BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Exceed Threshold?			
Unmitigated/Mitigated	*No/No*	*No/No*	*No/No*

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

Mitigation Measure AQ-2: **Selection of equipment during construction to minimize emissions. Such equipment selection would include the following:**

The project shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average 75-percent reduction in DPM exhaust emissions or greater. One feasible plan to achieve this reduction would include the following:

1. All diesel-powered off-road equipment, larger than 25 horsepower, operating on the site for more than two days continuously shall, at a minimum, meet U.S. EPA particulate matter emissions standards for Tier 4 engines or, alternatively, Tier 3 engines that include CARB-certified Level 3 Diesel Particulate Filters (DPF),[14] Note that engines that are electrically powered or uses non-diesel fuels would meet this requirement.

Effectiveness of Mitigation Measure AQ-2

Project construction activities were analyzed with the assumption of equipment with Tier 4 interim engines. With implementation of this mitigation, the computed maximum increased lifetime residential cancer risk from construction, assuming infant exposure, would be 5.5 in one million or less, the maximum annual $PM_{2.5}$ concentration would be 0.07 $\mu g/m^3$, and the Hazard Index would be 0.01. As a result, impacts would be reduced to a level below the BAAQMD single-source thresholds with respect to community risk caused by construction activities.

[14] See http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

GREENHOUSE GAS EMISSIONS

Setting

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

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

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

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

Recent Regulatory Actions

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

AB 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, California Energy Commission (CEC), California Public Utilities Commission

(CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

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

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.

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

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

SB 350 Renewable Portfolio Standards

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

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

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

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

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

Regulatory Agency – Local Policy

City of Calistoga Climate Action Plan

In 2014, the City adopted its Climate Action Plan.[15] As part of the plan, the City developed a GHG emissions reduction plan that provides mitigation measures for four areas: Transportation, Energy Efficiency and Renewable Energy, Carbon Sequestration, and Community Engagement and Advocacy. Some of the mitigation measures support citizen efforts to reduce their GHG emissions by providing information on energy and water savings. Other strategies utilize regulations to influence the actions of Calistoga's residents and businesses. Where possible, the City will reduce emissions within its direct control through choices made in its budget and operations. The Goals, Objectives, and Measures applicable to this project include:

> *Goal: Minimize personal vehicle use by providing alternative transportation modes.*
>
> Objective T-5 under this goal is to minimize personal vehicle usage by visitors to the community through Measure T-5 A; encourage local visitor accommodations to provide bicycles and shuttle service to guests, and to promote the use of the Calistoga Shuttle. This will be included in the projects TDM plan.
>
> *Goal: Minimize traffic congestion to reduce fuel use and the generation of emissions.*
>
> Objective T-9 under this goal is to optimize fuel efficiency in the local transportation system.
> One of the measures used to accomplish this (Measure T-9 C), established an anti-idling policy.
>
> *Goal: Reduce energy demand through conservation and efficiency.*
>
> The City's plan establishes several measures to maximize energy and water conservation and support efforts to utilize renewable energy. This includes the use of geothermal energy and heat-exchange technology for pools and spas, as planned for the project.

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2017, total gross nationwide GHG emissions were 6,457 MMT. These emissions were lower than peak levels of 7,370 MMT that were emitted in 2008. Relative to 1990 levels, these emissions were CARB updates the statewide GHG emission inventory on an annual basis where the latest inventory includes 2000 through 2017 emissions[16]. 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

[15]Available at: http://www.ci.calistoga.ca.us/home/showdocument?id=24005. Accessed on April 24, 2020.
[16] CARB. 2019. *2019 Edition, California Greenhouse Gas Emission Inventory: 2000 – 2017*. Available at https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf accessed on Nov. 26, 2019.

of 14.1 MT per person to 10.7 MT per person in 2017. The most recent Bay Area emission inventory was completed for the year 2011, where emissions were 87 MMT [17]. As a point of comparison, statewide emissions were about 444 MMT in 2011.

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. The goal of AB 32 was to reduce statewide GHG emissions to 1990 levels by 2020. CARB reports in their latest emission inventory, which is year 2017, emissions were 424 million metric tons[18]. This level is 7 million metric tons below the 2020 goal of 431 million metric tons. Therefore, the AB 32 goal is being met. Development of the project would occur beyond 2020, so a threshold that addresses a future target is appropriate.

A bright-line metric ton threshold was linearly interpolated for the year 2023 (i.e. opening year). The 2023 thresholds were interpolated using the BAAQMD 2020 recommended GHG thresholds of 1,100 MT CO_2e/year and the 2030 bright-line thresholds of 660 MT CO_2e/year. The 2030 bright-line threshold is a 40 percent reduction of the year 2020 1,100 MT CO_2e/year threshold. The 2023 linearly interpolated threshold would be 968 MT CO_2e per year. Note that this "threshold" is not published by any agency as a threshold or guidance.

[17] BAAQMD. 2015. *Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011*. January. Available at http://www.baaqmd.gov/~/media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf accessed Nov. 26, 2019.
[18] CARB. 2019. *California Greenhouse Gas Emissions for 2000 to 2017 Trends of Emissions and Other Indicators.* Available at https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf

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. An analysis of project-level GHG emissions was conducted using the BAAQMD CEQA Air Quality Guidelines. Emissions for the proposed project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines.

CalEEMod Modeling

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input into the model, as described previously for computing criteria air pollutant emissions.

Energy – Natural Gas

Natural gas consumption is based on the applicants estimate using historical natural gas consumption rates. The applicant estimates that the project would consume 40 percent less natural gas than the existing complex, which currently consumes 80,940 therms per year. The project applicant estimates the proposed project would use 48,563 therms or 4,856,300 kilo-British thermal (kBTU) units of natural gas per year.[19] The CalEEMod model estimated that the proposed project would use 5,697,040 kBTU, which is approximately 15 percent higher than the project-specific estimate. To account for this difference, the natural gas intensity factors for the hotel land uses were decreased by 15 percent. The lower estimate is the result of greater energy efficiency and use of the geothermal heating for water.

Traffic

According to the traffic projections, summer months typically generate 15 percent greater traffic than winter months and the projections used reflect summer conditions. To adjust for annual conditions, computed emissions using summer traffic conditions were reduced by 7.5 percent.

Service Population Emissions

The project service population efficiency rate is based on the number of future residents and/or employees. Since this project proposes a small number of employees, per capita emissions were not calculated.

[19] Email Correspondence with Daniel Merchant, 22 May 2020.

Construction GHG Emissions

GHG emissions associated with mitigated construction were computed to be 595 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

This analysis predicts the GHG emissions from the proposed project and compares them to a service population threshold that is based on the BAAQMD CEQA Guidelines, adjusted for the latest Statewide GHG reduction goals for 2030. The CalEEMod model, along with the project vehicle trip generation rates and other traffic assumptions, were used to estimate annual emissions associated with operation of the fully developed site under the proposed project.

As shown in Table 8, annual GHG emissions resulting from the proposed project are predicted to be 1,120 MT of CO_2e for the opening operation year of 2023. The proposed project's GHG emissions would exceed the thresholds of 968 MT of CO_2e per year, respectively. *Mitigation Measure GHG-1 would reduce the GHG emissions to a less-than-significant level.*

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

Source Category	Proposed Project in 2023
Area	<1
Energy Consumption	368
Mobile	716
Solid Waste Generation	31
Water Usage	5
Metric Ton Total	**1,120**
Linearly Interpolated Significance Threshold	*968 MT of CO_2e in 2023*
Exceed?	***Yes***

Mitigated Operational GHG Emissions

Since the project exceeds the linearly interpolated 2023 bright line threshold, a refined GHG analysis was completed that includes several sustainability measures that would reduce operational GHG emissions. The following measures were included in the mitigated GHG analysis:

1. The project shall install solar panels that generate 685,000 kilowatt-hours per year of on-site electricity.

2. The project shall provide in town housing using existing developer owned property for 25 percent of the employees and make bicycles readily available to employees. This would result in a 9 percent reduction.

3. Electricity shall be provided by Marin Clean Energy (MCE), which is a not-for-profit public electricity provider. MCE's participation rate is 86 percent over its service area.[20] MCE's service area includes Napa County.[21] MCE provided a 2017 CO_2 intensity factor of 109 lbs CO_2/MWh. This rate was used in the CalEEMod model.

4. A 20 percent waste reduction shall be achieved by instituting recycling and composting services.

5. Install outdoor drought-tolerant irrigation systems for landscape maintenance.

Table 9 lists the mitigated GHG emissions for 2023. The 2023 mitigated GHG emissions would be under the 968 MT of CO_2e interpolated threshold. Since the 2023 emissions do not exceed the linearly interpolated 2023 threshold, the project has a *less-than-significant* impact with respect to GHG emissions.

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

Source Category	Proposed Project in 2023
Area	<1
Energy Consumption	285
Mobile	646
Solid Waste Generation	25
Water Usage	4
Metric Ton Total with Mitigation	**960**
Linearly Interpolated Significance Threshold	*968 MT of CO_2e in 2023*
Exceeds with Mitigation?	***No***

Mitigation Measure GHG-1: *Develop and Implement a GHG Reduction Strategy*

Prior to development of the project, a GHG reduction strategy shall be developed and approved by the City. The project's operational GHG emissions must be at a level below the linearly interpolated BAAQMD 2023 threshold. Elements of this plan may include, but are not limited, to the following:

- Purchase partially or fully carbon-free generated electricity from Marin Clean Energy. This provider provides electricity that is sourced from either 60 percent renewable sources (Light Green program) or 100 percent renewable sources (Deep Green program);

- Install efficient space and water heating systems that also comply with the City of Calistoga's CAP conservation and efficiency goals. The objectives and measures that would be applicable are as follows:

    - Objective EE-1: Maximize energy and water conservation associated

[20] Email Correspondence with Rebecca Boyles, Marin Clean Energy. 2 August 2019. Web: https://www.mcecleanenergy.org/wp-content/uploads/2019/03/MCE_2017_Emission_Factor_Certification_Template.pdf
[21] See https://www.mcecleanenergy.org/

        - Measure EE-1 B: Discourage the use of decorative exterior lighting
    - Objective EE-2: Conserve water to minimize the energy needed for water treatment and transmission
        - Measure EE-2 A: Enforce the State's water-efficient landscape standards for new and rehabilitated landscaping.
        - Measure EE-2 B: Promote the use of reclaimed water generated by the local wastewater treatment plant.
    - Objective EE-3: Support local efforts to utilize renewable energy.
        - Measure EE-3 A: Support the use of geothermal energy and heat-exchange technology

- Include recycling, composting, and reusable material measures, as well donate excess material to charities, to meet the 20 percent recycling and composting reduction;

- Construct onsite or fund off-site carbon sequestration projects (such as a forestry or wetlands projects for which inventory and reporting protocols have been adopted). If the project develops an off-site project, it must be registered with the Climate Action Reserve or otherwise approved by the BAAQMD in order to be used to offset Project emissions;

- Purchase of carbon credits to offset Project annual emissions. Carbon offset credits must be verified and registered with The Climate Registry, the Climate Action Reserve, or another source approved by the California Air Resources Board or BAAQMD. The preference for offset carbon credit purchases include those that can be achieved as follows: 1) within the City; 2) within the San Francisco Bay Area Air Basin; 3) within the State of California; then 4) elsewhere in the United States. Provisions of evidence of payments, and funding of an escrow-type account or endowment fund would be overseen by the City of Calistoga.

Effectiveness of Mitigation Measure GHG-1

A GHG reduction strategy would require the project to identify measures to reduce its GHG emissions. The measures include but are not limited to the ones described in *Mitigation Measure GHG-1* and included in the mitigated analysis. With implementation of this mitigation, the operational GHG emissions would be reduced to *less-than-significant*.

Supporting Documentation

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

Attachment 2 includes the CalEEMod output for project construction and operational criteria air pollutant. The operational output for existing uses and 2023 project uses are also included in this attachment. Also included are any modeling assumptions.

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

Attachment 4 is the health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction and operation. The 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 screening community risk calculations from sources affecting the MEI. Due to the large size of the BAAQMD health risk calculators, these files were not included but are available upon request and would be provided in digital format.

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[22] 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.[23] 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.[24] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

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

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day) or liters per kilogram of body weight per 8-hour period for the case of worker or school child exposures. As recommended by the BAAQMD for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile 8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of

[22] 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.
[23] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[24] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD. For school children a 9-year exposure period is recommended by the BAAQMD.

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

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

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

Where:

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

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

Where:

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

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

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

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

* 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 Inputs and Outputs

Table 1 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Hotel	96 rooms	8.36	803	0.47	45	27	18	0.60	58	29	29
Quality Restaurant[1]	3.437 ksf	83.84	288	0.73	3	2	1	7.80	27	18	9
Specialty Retail[2]	5.285 ksf	44.32	234	0.96	5	3	2	2.71	14	6	8
Sub-total			1,325		53	32	21		99	53	46
Potential Internally Captured Trips*			522		8	5	3		41	24	17
Internal Capture (generator)		*-19%*	*-99*	*-11%*	*-1*	*-1*	*0*	*-26%*	*-11*	*-5*	*-6*
Internal Capture (attractor)			*-99*		*-1*	*0*	*-1*		*-11*	*-6*	*-5*
Net New Trips			**1,127**		**51**	**31**	**20**		**77**	**42**	**35**

Note: ksf = 1,000 square feet; * Sum of trips for the restaurant and retail space or hotel trips, whichever is less;
[1] Restaurant and Bar;
[2] Mercantile Marketplace and Retail Space

20-029 Veranda at Indian Springs_AQ-TAC-GHG

Napa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	233.00	Space	0.00	93,200.00	0
Hotel	96.00	Room	7.06	112,165.00	0
Quality Restaurant	3.44	1000sqft	0.00	3,437.00	0
Strip Mall	5.29	1000sqft	0.00	5,285.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Operational year from assumed construction schedule. CO2 intensity from PG&E websit calendar year 2017

Land Use - Total lot acrage is 7.06. The user defined retail will be specialty retail (ITE LU 243) with 44.32 daily trips per 1000sqft. Total sqft = 104,840+11,666+4,381-3,437-5,285 = 112,165

Construction Phase - Default CalEEMod schedule

Off-road Equipment - Default construction equipment

Off-road Equipment - Default construction equipment

Off-road Equipment - Default construction equipment

Off-road Equipment - Default construction equipment

Off-road Equipment - Default construction equipment

Off-road Equipment - Default construction equipment

Off-road Equipment - Equipment assumed from construction data sheet. CalEEMod Default phase durations used.

Trips and VMT - Per Construction data sheet; 350 RT for concrete = 700 trips, 100 RT for asphalt = 200 trips. Concrete and asphalt trip length assumed to be 7.3 mile (No Trips)

Demolition - Estimated using Google Earth.

Grading - Per construction data sheet.

Vehicle Trips - Strip Mall is “Specialty Retail” (ITE 9th Edition LU 234) per traffic study. Hotel rate updated to 8.36 per traffic study. Rate for Restaurant and retail includes 19% trip capture estimate. CalEEMod trip ratios used to calc Sat and Sun trip rates

Vehicle Emission Factors - EMFAC2017 EFs for Napa Co. 2023

Vehicle Emission Factors -

Vehicle Emission Factors -

Energy Use - The natural gas based on project data is 48,563 therms/year --> approximatley 15% lower than CalEEMod estimate. reduce natural gas intensity by 15%

Water And Wastewater - Assume all WW treated by municipl WWTF

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

Stationary Sources - Emergency Generators and Fire Pumps -

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tblVehicleEF	LDT2	330.47	319.84
tblVehicleEF	LDT2	78.50	70.34
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.13	0.32
tblVehicleEF	LDT2	1.6670e-003	1.4090e-003
tblVehicleEF	LDT2	2.3640e-003	1.8440e-003
tblVehicleEF	LDT2	1.5330e-003	1.2970e-003
tblVehicleEF	LDT2	2.1740e-003	1.6950e-003
tblVehicleEF	LDT2	0.04	0.07
tblVehicleEF	LDT2	0.13	0.15
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.01	0.02
tblVehicleEF	LDT2	0.07	0.53
tblVehicleEF	LDT2	0.11	0.37
tblVehicleEF	LDT2	3.3100e-003	0.01
tblVehicleEF	LDT2	8.1500e-004	7.8000e-005
tblVehicleEF	LDT2	0.04	0.07
tblVehicleEF	LDT2	0.13	0.15
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.07	0.53
tblVehicleEF	LDT2	0.12	0.40
tblVehicleEF	LHD1	4.7830e-003	4.3820e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.02	0.02

tblVehicleEF	LHD1	0.14	0.17
tblVehicleEF	LHD1	1.47	1.24
tblVehicleEF	LHD1	2.76	1.04
tblVehicleEF	LHD1	9.40	9.52
tblVehicleEF	LHD1	690.21	779.22
tblVehicleEF	LHD1	27.95	10.11
tblVehicleEF	LHD1	0.10	0.09
tblVehicleEF	LHD1	2.26	1.62
tblVehicleEF	LHD1	0.96	0.30
tblVehicleEF	LHD1	1.0950e-003	1.0660e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.0090e-003	2.7100e-004
tblVehicleEF	LHD1	1.0480e-003	1.0200e-003
tblVehicleEF	LHD1	2.5700e-003	2.5280e-003
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	9.2700e-004	2.4900e-004
tblVehicleEF	LHD1	2.6540e-003	2.2730e-003
tblVehicleEF	LHD1	0.11	0.09
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.2030e-003	1.0230e-003
tblVehicleEF	LHD1	0.17	0.14
tblVehicleEF	LHD1	0.40	0.75
tblVehicleEF	LHD1	0.27	0.08
tblVehicleEF	LHD1	9.3000e-005	9.2000e-005
tblVehicleEF	LHD1	6.7620e-003	7.5790e-003
tblVehicleEF	LHD1	3.3100e-004	1.0000e-004
tblVehicleEF	LHD1	2.6540e-003	2.2730e-003
tblVehicleEF	LHD1	0.11	0.09
tblVehicleEF	LHD1	0.02	0.03

tblVehicleEF	LHD1	1.2030e-003	1.0230e-003
tblVehicleEF	LHD1	0.21	0.18
tblVehicleEF	LHD1	0.40	0.75
tblVehicleEF	LHD1	0.30	0.09
tblVehicleEF	LHD2	3.3050e-003	2.7530e-003
tblVehicleEF	LHD2	9.7640e-003	8.9990e-003
tblVehicleEF	LHD2	8.2270e-003	8.9830e-003
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.76	0.88
tblVehicleEF	LHD2	1.22	0.57
tblVehicleEF	LHD2	14.50	15.02
tblVehicleEF	LHD2	717.05	770.10
tblVehicleEF	LHD2	22.80	6.67
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	1.43	1.65
tblVehicleEF	LHD2	0.53	0.18
tblVehicleEF	LHD2	1.3220e-003	1.5370e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.9300e-004	1.2300e-004
tblVehicleEF	LHD2	1.2650e-003	1.4700e-003
tblVehicleEF	LHD2	2.7050e-003	2.7400e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.6100e-004	1.1300e-004
tblVehicleEF	LHD2	9.0300e-004	1.0770e-003
tblVehicleEF	LHD2	0.04	0.05
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	4.5200e-004	5.0800e-004
tblVehicleEF	LHD2	0.13	0.14
tblVehicleEF	LHD2	0.09	0.32

tblVehicleEF	LHD2	0.11	0.05
tblVehicleEF	LHD2	1.4100e-004	1.4300e-004
tblVehicleEF	LHD2	6.9680e-003	7.4140e-003
tblVehicleEF	LHD2	2.5000e-004	6.6000e-005
tblVehicleEF	LHD2	9.0300e-004	1.0770e-003
tblVehicleEF	LHD2	0.04	0.05
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.5200e-004	5.0800e-004
tblVehicleEF	LHD2	0.15	0.17
tblVehicleEF	LHD2	0.09	0.32
tblVehicleEF	LHD2	0.12	0.05
tblVehicleEF	MCY	0.44	0.33
tblVehicleEF	MCY	0.17	0.27
tblVehicleEF	MCY	20.12	20.46
tblVehicleEF	MCY	10.45	9.27
tblVehicleEF	MCY	167.67	209.85
tblVehicleEF	MCY	46.91	63.42
tblVehicleEF	MCY	1.17	1.18
tblVehicleEF	MCY	0.33	0.28
tblVehicleEF	MCY	2.0500e-003	1.9600e-003
tblVehicleEF	MCY	4.3420e-003	3.3360e-003
tblVehicleEF	MCY	1.9200e-003	1.8360e-003
tblVehicleEF	MCY	4.1030e-003	3.1480e-003
tblVehicleEF	MCY	0.89	1.79
tblVehicleEF	MCY	0.83	0.82
tblVehicleEF	MCY	0.43	0.87
tblVehicleEF	MCY	2.27	2.29
tblVehicleEF	MCY	0.66	2.38
tblVehicleEF	MCY	2.36	2.09
tblVehicleEF	MCY	2.0710e-003	2.0770e-003

tblVehicleEF	MCY	7.1000e-004	6.2800e-004
tblVehicleEF	MCY	0.89	1.79
tblVehicleEF	MCY	0.83	0.82
tblVehicleEF	MCY	0.43	0.87
tblVehicleEF	MCY	2.79	2.81
tblVehicleEF	MCY	0.66	2.38
tblVehicleEF	MCY	2.57	2.27
tblVehicleEF	MDV	0.01	4.6390e-003
tblVehicleEF	MDV	0.02	0.10
tblVehicleEF	MDV	1.21	0.99
tblVehicleEF	MDV	3.65	3.59
tblVehicleEF	MDV	455.63	395.09
tblVehicleEF	MDV	106.78	86.60
tblVehicleEF	MDV	0.16	0.11
tblVehicleEF	MDV	0.32	0.40
tblVehicleEF	MDV	1.8020e-003	1.5370e-003
tblVehicleEF	MDV	2.5850e-003	1.9760e-003
tblVehicleEF	MDV	1.6620e-003	1.4200e-003
tblVehicleEF	MDV	2.3770e-003	1.8170e-003
tblVehicleEF	MDV	0.07	0.08
tblVehicleEF	MDV	0.22	0.18
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.12	0.58
tblVehicleEF	MDV	0.28	0.49
tblVehicleEF	MDV	4.5640e-003	3.9050e-003
tblVehicleEF	MDV	1.1320e-003	8.5700e-004
tblVehicleEF	MDV	0.07	0.08
tblVehicleEF	MDV	0.22	0.18
tblVehicleEF	MDV	0.06	0.07

tblVehicleEF	MDV	0.04	0.03
tblVehicleEF	MDV	0.12	0.58
tblVehicleEF	MDV	0.31	0.53
tblVehicleEF	MH	0.03	0.01
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	2.39	1.25
tblVehicleEF	MH	6.25	2.22
tblVehicleEF	MH	1,230.46	1,577.98
tblVehicleEF	MH	60.30	19.22
tblVehicleEF	MH	1.59	1.69
tblVehicleEF	MH	0.93	0.26
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.1490e-003	2.5700e-004
tblVehicleEF	MH	3.2110e-003	3.2740e-003
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.0560e-003	2.3600e-004
tblVehicleEF	MH	0.89	0.71
tblVehicleEF	MH	0.08	0.07
tblVehicleEF	MH	0.30	0.24
tblVehicleEF	MH	0.11	0.08
tblVehicleEF	MH	0.02	1.46
tblVehicleEF	MH	0.36	0.10
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	7.1200e-004	1.9000e-004
tblVehicleEF	MH	0.89	0.71
tblVehicleEF	MH	0.08	0.07
tblVehicleEF	MH	0.30	0.24
tblVehicleEF	MH	0.15	0.11
tblVehicleEF	MH	0.02	1.46

tblVehicleEF	MH	0.40	0.11
tblVehicleEF	MHD	0.02	2.7920e-003
tblVehicleEF	MHD	5.8140e-003	2.6970e-003
tblVehicleEF	MHD	0.07	8.7320e-003
tblVehicleEF	MHD	0.30	0.40
tblVehicleEF	MHD	0.44	0.36
tblVehicleEF	MHD	6.38	1.13
tblVehicleEF	MHD	163.93	89.38
tblVehicleEF	MHD	1,193.86	1,097.63
tblVehicleEF	MHD	47.90	7.91
tblVehicleEF	MHD	0.49	0.55
tblVehicleEF	MHD	1.23	1.60
tblVehicleEF	MHD	12.90	1.82
tblVehicleEF	MHD	2.2800e-004	5.9700e-004
tblVehicleEF	MHD	3.4490e-003	7.7470e-003
tblVehicleEF	MHD	8.6600e-004	1.1600e-004
tblVehicleEF	MHD	2.1800e-004	5.7100e-004
tblVehicleEF	MHD	3.2940e-003	7.4060e-003
tblVehicleEF	MHD	7.9600e-004	1.0700e-004
tblVehicleEF	MHD	9.4400e-004	4.7700e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	4.3300e-004	2.1400e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.02	0.14
tblVehicleEF	MHD	0.37	0.05
tblVehicleEF	MHD	1.5740e-003	8.4700e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	5.9100e-004	7.8000e-005
tblVehicleEF	MHD	9.4400e-004	4.7700e-004

tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	4.3300e-004	2.1400e-004
tblVehicleEF	MHD	0.06	0.03
tblVehicleEF	MHD	0.02	0.14
tblVehicleEF	MHD	0.41	0.05
tblVehicleEF	OBUS	0.01	7.2750e-003
tblVehicleEF	OBUS	6.8480e-003	5.0960e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.60
tblVehicleEF	OBUS	0.51	0.58
tblVehicleEF	OBUS	5.64	1.96
tblVehicleEF	OBUS	196.95	96.34
tblVehicleEF	OBUS	1,313.33	1,398.56
tblVehicleEF	OBUS	59.53	15.89
tblVehicleEF	OBUS	0.46	0.39
tblVehicleEF	OBUS	1.13	1.39
tblVehicleEF	OBUS	5.13	1.08
tblVehicleEF	OBUS	4.2000e-005	1.2700e-004
tblVehicleEF	OBUS	3.1000e-003	7.0080e-003
tblVehicleEF	OBUS	6.6000e-004	1.4100e-004
tblVehicleEF	OBUS	4.0000e-005	1.2200e-004
tblVehicleEF	OBUS	2.9550e-003	6.6910e-003
tblVehicleEF	OBUS	6.0700e-004	1.2900e-004
tblVehicleEF	OBUS	1.1750e-003	1.0530e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.04	0.05
tblVehicleEF	OBUS	5.0000e-004	4.4500e-004
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.02	0.19

tblVehicleEF	OBUS	0.34	0.09
tblVehicleEF	OBUS	1.8890e-003	9.1500e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	6.9400e-004	1.5700e-004
tblVehicleEF	OBUS	1.1750e-003	1.0530e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	5.0000e-004	4.4500e-004
tblVehicleEF	OBUS	0.07	0.04
tblVehicleEF	OBUS	0.02	0.19
tblVehicleEF	OBUS	0.38	0.10
tblVehicleEF	SBUS	0.83	0.01
tblVehicleEF	SBUS	0.01	5.0670e-003
tblVehicleEF	SBUS	0.08	9.8900e-004
tblVehicleEF	SBUS	5.00	0.82
tblVehicleEF	SBUS	0.86	0.29
tblVehicleEF	SBUS	6.18	0.14
tblVehicleEF	SBUS	1,286.40	337.30
tblVehicleEF	SBUS	1,132.53	1,133.82
tblVehicleEF	SBUS	32.53	0.85
tblVehicleEF	SBUS	11.39	3.99
tblVehicleEF	SBUS	4.35	6.43
tblVehicleEF	SBUS	15.82	0.62
tblVehicleEF	SBUS	0.01	3.8510e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.04
tblVehicleEF	SBUS	4.6800e-004	9.0000e-006
tblVehicleEF	SBUS	0.01	3.6840e-003
tblVehicleEF	SBUS	2.7540e-003	2.9100e-003
tblVehicleEF	SBUS	0.02	0.04

tblVehicleEF	SBUS	4.3000e-004	8.0000e-006
tblVehicleEF	SBUS	1.6420e-003	7.6000e-005
tblVehicleEF	SBUS	0.02	6.5200e-004
tblVehicleEF	SBUS	0.59	0.07
tblVehicleEF	SBUS	7.3900e-004	3.2000e-005
tblVehicleEF	SBUS	0.12	0.10
tblVehicleEF	SBUS	7.7100e-003	4.8200e-003
tblVehicleEF	SBUS	0.29	5.3100e-003
tblVehicleEF	SBUS	0.01	3.1920e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	4.3100e-004	8.0000e-006
tblVehicleEF	SBUS	1.6420e-003	7.6000e-005
tblVehicleEF	SBUS	0.02	6.5200e-004
tblVehicleEF	SBUS	0.84	0.10
tblVehicleEF	SBUS	7.3900e-004	3.2000e-005
tblVehicleEF	SBUS	0.14	0.12
tblVehicleEF	SBUS	7.7100e-003	4.8200e-003
tblVehicleEF	SBUS	0.32	5.8140e-003
tblVehicleEF	UBUS	0.25	1.06
tblVehicleEF	UBUS	0.08	0.07
tblVehicleEF	UBUS	4.11	7.56
tblVehicleEF	UBUS	12.95	4.11
tblVehicleEF	UBUS	1,938.09	1,707.82
tblVehicleEF	UBUS	177.77	46.80
tblVehicleEF	UBUS	6.60	0.41
tblVehicleEF	UBUS	10.54	0.52
tblVehicleEF	UBUS	0.43	0.11
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.13	2.2660e-003
tblVehicleEF	UBUS	1.1680e-003	1.8200e-004

tblVehicleEF	UBUS	0.18	0.05
tblVehicleEF	UBUS	3.0000e-003	3.7960e-003
tblVehicleEF	UBUS	0.12	2.1510e-003
tblVehicleEF	UBUS	1.0740e-003	1.6800e-004
tblVehicleEF	UBUS	4.9310e-003	3.9450e-003
tblVehicleEF	UBUS	0.09	0.06
tblVehicleEF	UBUS	2.6490e-003	2.3500e-003
tblVehicleEF	UBUS	0.51	0.02
tblVehicleEF	UBUS	0.02	0.41
tblVehicleEF	UBUS	1.06	0.29
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	2.0130e-003	4.6300e-004
tblVehicleEF	UBUS	4.9310e-003	3.9450e-003
tblVehicleEF	UBUS	0.09	0.06
tblVehicleEF	UBUS	2.6490e-003	2.3500e-003
tblVehicleEF	UBUS	0.80	1.10
tblVehicleEF	UBUS	0.02	0.41
tblVehicleEF	UBUS	1.16	0.32
tblVehicleTrips	ST_TR	8.19	8.39
tblVehicleTrips	ST_TR	94.36	71.12
tblVehicleTrips	ST_TR	42.04	34.10
tblVehicleTrips	SU_TR	5.95	6.09
tblVehicleTrips	SU_TR	72.16	54.38
tblVehicleTrips	SU_TR	20.43	16.57
tblVehicleTrips	WD_TR	8.17	8.36
tblVehicleTrips	WD_TR	89.95	67.79
tblVehicleTrips	WD_TR	44.32	35.95
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	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

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2787	2.6438	2.2840	3.8000e-003	0.1720	0.1406	0.3126	0.0858	0.1316	0.2173	0.0000	328.4171	328.4171	0.0847	0.0000	330.5348
2022	0.6791	0.2737	0.3194	5.1000e-004	0.0000	0.0142	0.0142	0.0000	0.0133	0.0133	0.0000	44.5947	44.5947	0.0119	0.0000	44.8927
Maximum	**0.6791**	**2.6438**	**2.2840**	**3.8000e-003**	**0.1720**	**0.1406**	**0.3126**	**0.0858**	**0.1316**	**0.2173**	**0.0000**	**328.4171**	**328.4171**	**0.0847**	**0.0000**	**330.5348**

Mitigated Construction

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

2021	0.0721	1.4873	2.4997	3.8000e-003	0.0774	0.0105	0.0879	0.0193	0.0105	0.0298	0.0000	328.4167	328.4167	0.0847	0.0000	330.5344
2022	0.6588	0.2147	0.3611	5.1000e-004	0.0000	1.2200e-003	1.2200e-003	0.0000	1.2200e-003	1.2200e-003	0.0000	44.5947	44.5947	0.0119	0.0000	44.8926
Maximum	**0.6588**	**1.4873**	**2.4997**	**3.8000e-003**	**0.0774**	**0.0105**	**0.0879**	**0.0193**	**0.0105**	**0.0298**	**0.0000**	**328.4167**	**328.4167**	**0.0847**	**0.0000**	**330.5344**

	ROG	NOx	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	**23.69**	**41.67**	**-9.89**	**0.00**	**55.00**	**92.45**	**72.74**	**77.50**	**91.93**	**86.56**	**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	**1-1-2021**	**3-31-2021**	1.0210	0.4336
2	**4-1-2021**	**6-30-2021**	0.6283	0.3720
3	**7-1-2021**	**9-30-2021**	0.6352	0.3761
4	**10-1-2021**	**12-31-2021**	0.6352	0.3761
5	**1-1-2022**	**3-31-2022**	0.9552	0.8750
		Highest	1.0210	0.8750

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	0.5434	3.0000e-005	3.1000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.43E-03
Energy	0.0267	0.2427	0.2039	1.4600e-003		0.0185	0.0185		0.0185	0.0185	0.0000	364.8624	364.8624	0.0190	7.7200e-003	367.6367
Mobile	0.9594	0.9418	5.8226	7.9300e-003	0.7779	7.8600e-003	0.7857	0.2083	7.3800e-003	0.2156	0.0000	772.0933	772.0933	0.0851	0.0000	774.2216
Waste						0.0000	0.0000		0.0000	0.0000	12.4332	0.0000	12.4332	0.7348	0.0000	30.8027
Water						0.0000	0.0000		0.0000	0.0000	1.3696	2.1878	3.5574	5.0200e-003	3.0400e-003	4.5891

Total	**1.5295**	**1.1846**	**6.0296**	**9.3900e-003**	**0.7779**	**0.0263**	**0.8042**	**0.2083**	**0.0258**	**0.2341**	**13.8028**	**1,139.1495**	**1,152.9524**	**0.8439**	**0.0108**	**1,177.2565**

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	0.5434	3.0000e-005	3.1000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4300e-003
Energy	0.0267	0.2427	0.2039	1.4600e-003		0.0185	0.0185		0.0185	0.0185	0.0000	364.8624	364.8624	0.0190	7.7200e-003	367.6367
Mobile	0.9594	0.9418	5.8226	7.9300e-003	0.7779	7.8600e-003	0.7857	0.2083	7.3800e-003	0.2156	0.0000	772.0933	772.0933	0.0851	0.0000	774.2216
Waste						0.0000	0.0000		0.0000	0.0000	12.4332	0.0000	12.4332	0.7348	0.0000	30.8027
Water						0.0000	0.0000		0.0000	0.0000	1.3696	2.1878	3.5574	5.0200e-003	3.0400e-003	4.5891
Total	**1.5295**	**1.1846**	**6.0296**	**9.3900e-003**	**0.7779**	**0.0263**	**0.8042**	**0.2083**	**0.0258**	**0.2341**	**13.8028**	**1,139.1495**	**1,152.9524**	**0.8439**	**0.0108**	**1,177.2565**

	ROG	NOx	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	1/1/2021	1/28/2021	5	20	
2	Site Preparation	Site Preparation	1/29/2021	2/11/2021	5	10	
3	Grading	Grading	2/12/2021	3/11/2021	5	20	
4	Trenching/Foundation	Trenching	2/12/2021	3/11/2021	5	20	Overlap with Grading
5	Building Construction	Building Construction	3/12/2021	1/27/2022	5	230	

6	Paving	Paving	1/28/2022	2/24/2022	5	20	
7	Architectural Coating	Architectural Coating	2/25/2022	3/24/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 181,331; Non-Residential Outdoor: 60,444; 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
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/Foundation	Excavators	1	8.00	158	0.38
Trenching/Foundation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Trenching/Foundation	2	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0146	0.0000	0.0146	2.2100e-003	0.0000	2.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**	**0.0146**	**0.0155**	**0.0301**	**2.2100e-003**	**0.0144**	**0.0166**	**0.0000**	**34.0008**	**34.0008**	**9.5700e-003**	**0.0000**	**34.2400**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.5800e-003	0.0000	6.5800e-003	5.0000e-004	0.0000	5.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	34.0007	34.0007	9.5700e-003	0.0000	34.2400
Total	**5.8400e-003**	**0.1356**	**0.2467**	**3.9000e-004**	**6.5800e-003**	**6.2000e-004**	**7.2000e-003**	**5.0000e-004**	**6.2000e-004**	**1.1200e-003**	**0.0000**	**34.0007**	**34.0007**	**9.5700e-003**	**0.0000**	**34.2400**

Mitigated Construction Off-Site

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

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

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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					0.0407	0.0000	0.0407	0.0112	0.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4800e-003	0.0608	0.1148	1.9000e-004		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	**3.4800e-003**	**0.0608**	**0.1148**	**1.9000e-004**	**0.0407**	**3.1000e-004**	**0.0410**	**0.0112**	**3.1000e-004**	**0.0115**	**0.0000**	**16.7178**	**16.7178**	**5.4100e-003**	**0.0000**	**16.8530**

Mitigated Construction Off-Site

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

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	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					0.0670	0.0000	0.0670	0.0339	0.0000	0.0339	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0229	0.2474	0.1586	3.0000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2644
Total	**0.0229**	**0.2474**	**0.1586**	**3.0000e-004**	**0.0670**	**0.0116**	**0.0786**	**0.0339**	**0.0107**	**0.0446**	**0.0000**	**26.0537**	**26.0537**	**8.4300e-003**	**0.0000**	**26.2644**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

Fugitive Dust					0.0302	0.0000	0.0302	7.6300e-003	0.0000	7.6300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2000e-003	0.1033	0.1899	3.0000e-004		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2643
Total	**5.2000e-003**	**0.1033**	**0.1899**	**3.0000e-004**	**0.0302**	**4.8000e-004**	**0.0306**	**7.6300e-003**	**4.8000e-004**	**8.1100e-003**	**0.0000**	**26.0537**	**26.0537**	**8.4300e-003**	**0.0000**	**26.2643**

Mitigated Construction Off-Site

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

3.5 Trenching/Foundation - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3300e-003	0.0363	0.0626	8.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	7.2674	7.2674	2.3500e-003	0.0000	7.3261
Total	**1.3300e-003**	**0.0363**	**0.0626**	**8.0000e-005**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**7.2674**	**7.2674**	**2.3500e-003**	**0.0000**	**7.3261**

Mitigated Construction Off-Site

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

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

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2006	1.8391	1.7487	2.8400e-003		0.1011	0.1011		0.0951	0.0951	0.0000	244.3773	244.3773	0.0590	0.0000	245.8513
Total	**0.2006**	**1.8391**	**1.7487**	**2.8400e-003**		**0.1011**	**0.1011**		**0.0951**	**0.0951**	**0.0000**	**244.3773**	**244.3773**	**0.0590**	**0.0000**	**245.8513**

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0563	1.1512	1.8857	2.8400e-003		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	244.3770	244.3770	0.0590	0.0000	245.8510
Total	**0.0563**	**1.1512**	**1.8857**	**2.8400e-003**		**8.9300e-003**	**8.9300e-003**		**8.9300e-003**	**8.9300e-003**	**0.0000**	**244.3770**	**244.3770**	**0.0590**	**0.0000**	**245.8510**

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 - 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	0.0162	0.1484	0.1555	2.6000e-004		7.6900e-003	7.6900e-003		7.2300e-003	7.2300e-003	0.0000	22.0139	22.0139	5.2700e-003	0.0000	22.1458
Total	**0.0162**	**0.1484**	**0.1555**	**2.6000e-004**		**7.6900e-003**	**7.6900e-003**		**7.2300e-003**	**7.2300e-003**	**0.0000**	**22.0139**	**22.0139**	**5.2700e-003**	**0.0000**	**22.1458**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

Off-Road	5.0700e-003	0.1037	0.1698	2.6000e-004		8.0000e-004	8.0000e-004		8.0000e-004	8.0000e-004	0.0000	22.0139	22.0139	5.2700e-003	0.0000	22.1457
Total	**5.0700e-003**	**0.1037**	**0.1698**	**2.6000e-004**		**8.0000e-004**	**8.0000e-004**		**8.0000e-004**	**8.0000e-004**	**0.0000**	**22.0139**	**22.0139**	**5.2700e-003**	**0.0000**	**22.1457**

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 - 2022

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.3400e-003	0.1004	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.3400e-003**	**0.1004**	**0.1730**	**2.3000e-004**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**20.0275**	**20.0275**	**6.4800e-003**	**0.0000**	**20.1895**

Mitigated Construction Off-Site

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

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

3.8 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6498					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.6518**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6498					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4000e-004	0.0106	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.6503**	**0.0106**	**0.0183**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9594	0.9418	5.8226	7.9300e-003	0.7779	7.8600e-003	0.7857	0.2083	7.3800e-003	0.2156	0.0000	772.0933	772.0933	0.0851	0.0000	774.2216
Unmitigated	0.9594	0.9418	5.8226	7.9300e-003	0.7779	7.8600e-003	0.7857	0.2083	7.3800e-003	0.2156	0.0000	772.0933	772.0933	0.0851	0.0000	774.2216

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	802.56	805.44	584.64	1,550,757	1,550,757
Parking Lot	0.00	0.00	0.00		
Quality Restaurant	233.20	244.65	187.07	271,018	271,018
Strip Mall	190.18	180.39	87.66	277,909	277,909
Total	1,225.93	1,230.48	859.36	2,099,684	2,099,684

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	14.70	6.60	6.60	19.40	61.60	19.00	58	38	4
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Quality Restaurant	14.70	6.60	6.60	12.00	69.00	19.00	38	18	44
Strip Mall	14.70	6.60	6.60	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.530589	0.049522	0.159707	0.113711	0.028026	0.006987	0.017442	0.028575	0.002772	0.001522	0.058629	0.001580	0.000939

Parking Lot	0.530589	0.049522	0.159707	0.113711	0.028026	0.006987	0.017442	0.028575	0.002772	0.001522	0.058629	0.001580	0.000939
Quality Restaurant	0.530589	0.049522	0.159707	0.113711	0.028026	0.006987	0.017442	0.028575	0.002772	0.001522	0.058629	0.001580	0.000939
Strip Mall	0.530589	0.049522	0.159707	0.113711	0.028026	0.006987	0.017442	0.028575	0.002772	0.001522	0.058629	0.001580	0.000939

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	100.6146	100.6146	0.0139	2.8700e-003	101.8186
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	100.6146	100.6146	0.0139	2.8700e-003	101.8186
NaturalGas Mitigated	0.0267	0.2427	0.2039	1.4600e-003		0.0185	0.0185		0.0185	0.0185	0.0000	264.2478	264.2478	5.0600e-003	4.8400e-003	265.8181
NaturalGas Unmitigated	0.0267	0.2427	0.2039	1.4600e-003		0.0185	0.0185		0.0185	0.0185	0.0000	264.2478	264.2478	5.0600e-003	4.8400e-003	265.8181

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					
Hotel	4.22481e+006	0.0228	0.2071	0.1740	1.2400e-003		0.0157	0.0157		0.0157	0.0157	0.0000	225.4518	225.4518	4.3200e-003	4.1300e-003	226.7915

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
Quality Restaurant	714484	3.8500e-003	0.0350	0.0294	2.1000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	38.1276	38.1276	7.3000e-004	7.0000e-004	38.3541
Strip Mall	12525.5	7.0000e-005	6.1000e-004	5.2000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6684	0.6684	1.0000e-005	1.0000e-005	0.6724
Total		**0.0267**	**0.2427**	**0.2039**	**1.4500e-003**		**0.0185**	**0.0185**		**0.0185**	**0.0185**	**0.0000**	**264.2478**	**264.2478**	**5.0600e-003**	**4.8400e-003**	**265.8181**

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					
Hotel	4.22481e+006	0.0228	0.2071	0.1740	1.2400e-003		0.0157	0.0157		0.0157	0.0157	0.0000	225.4518	225.4518	4.3200e-003	4.1300e-003	226.7915
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
Quality Restaurant	714484	3.8500e-003	0.0350	0.0294	2.1000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	38.1276	38.1276	7.3000e-004	7.0000e-004	38.3541
Strip Mall	12525.5	7.0000e-005	6.1000e-004	5.2000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6684	0.6684	1.0000e-005	1.0000e-005	0.6724
Total		**0.0267**	**0.2427**	**0.2039**	**1.4500e-003**		**0.0185**	**0.0185**		**0.0185**	**0.0185**	**0.0000**	**264.2478**	**264.2478**	**5.0600e-003**	**4.8400e-003**	**265.8181**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	854697	81.4137	0.0112	2.3300e-003	82.3879
Parking Lot	32620	3.1072	4.3000e-004	9.0000e-005	3.1444

Quality Restaurant	112459	10.7122	1.4800e-003	3.1000e-004	10.8404
Strip Mall	56496.6	5.3816	7.4000e-004	1.5000e-004	5.4460
Total		**100.6146**	**0.0139**	**2.8800e-003**	**101.8186**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	854697	81.4137	0.0112	2.3300e-003	82.3879
Parking Lot	32620	3.1072	4.3000e-004	9.0000e-005	3.1444
Quality Restaurant	112459	10.7122	1.4800e-003	3.1000e-004	10.8404
Strip Mall	56496.6	5.3816	7.4000e-004	1.5000e-004	5.4460
Total		**100.6146**	**0.0139**	**2.8800e-003**	**101.8186**

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	0.5434	3.0000e-005	3.1000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4300e-003
Unmitigated	0.5434	3.0000e-005	3.1000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0650					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4782					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.9000e-004	3.0000e-005	3.1000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4300e-003
Total	**0.5434**	**3.0000e-005**	**3.1000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.0300e-003**	**6.0300e-003**	**2.0000e-005**	**0.0000**	**6.4300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0650					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4782					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.9000e-004	3.0000e-005	3.1000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4300e-003
Total	**0.5434**	**3.0000e-005**	**3.1000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.0300e-003**	**6.0300e-003**	**2.0000e-005**	**0.0000**	**6.4300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.5574	5.0200e-003	3.0400e-003	4.5891
Unmitigated	3.5574	5.0200e-003	3.0400e-003	4.5891

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	2.43521 / 0.270579	2.2070	3.1500e-003	1.9100e-003	2.8555
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	1.04416 / 0.0666483	0.9298	1.3500e-003	8.2000e-004	1.2077
Strip Mall	0.391844 / 0.240162	0.4207	5.2000e-004	3.1000e-004	0.5258
Total		**3.5574**	**5.0200e-003**	**3.0400e-003**	**4.5891**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	2.43521 / 0.270579	2.2070	3.1500e-003	1.9100e-003	2.8555
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	1.04416 / 0.0666483	0.9298	1.3500e-003	8.2000e-004	1.2077
Strip Mall	0.391844 / 0.240162	0.4207	5.2000e-004	3.1000e-004	0.5258
Total		**3.5574**	**5.0200e-003**	**3.0400e-003**	**4.5891**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.4332	0.7348	0.0000	30.8027
Unmitigated	12.4332	0.7348	0.0000	30.8027

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	52.56	10.6692	0.6305	0.0000	26.4325
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	3.14	0.6374	0.0377	0.0000	1.5791
Strip Mall	5.55	1.1266	0.0666	0.0000	2.7911
Total		**12.4332**	**0.7348**	**0.0000**	**30.8027**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	52.56	10.6692	0.6305	0.0000	26.4325
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	3.14	0.6374	0.0377	0.0000	1.5791
Strip Mall	5.55	1.1266	0.0666	0.0000	2.7911
Total		**12.4332**	**0.7348**	**0.0000**	**30.8027**

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

20-029 Veranda at Indian Springs_GHG 2023 - Energy Rev - Napa County, Annual

20-029 Veranda at Indian Springs_GHG 2023 - Mitigated

Napa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	233.00	Space	0.00	93,200.00	0
Hotel	96.00	Room	7.06	112,165.00	0
Quality Restaurant	3.44	1000sqft	0.00	3,437.00	0
Strip Mall	5.29	1000sqft	0.00	5,285.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	109	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - MCE provides energy to Calistoga. Assuming the aggregate 2017 rate of 109

Land Use - Total lot acrage is 7.06. The user defined retail will be specialty retail (ITE LU 243) with 44.32 daily trips per 1000sqft. Total sqft = 104,840+11,666+4,381-3,437-5,285 = 112,165

Construction Phase - Default CalEEMod schedule

Off-road Equipment - Default construction equipment

Off-road Equipment - Default construction equipment

Off-road Equipment - Default construction equipment

Off-road Equipment - Default construction equipment

Off-road Equipment - Default construction equipment

Off-road Equipment - Default construction equipment

Off-road Equipment - Equipment assumed from construction data sheet. CalEEMod Default phase durations used.

Trips and VMT - Per Construction data sheet; 350 RT for concrete = 700 trips, 100 RT for asphalt = 200 trips. Concrete and asphalt trip length assumed to be 7.3 mile (No Trips)

Demolition - Estimated using Google Earth.

Grading - Per construction data sheet.

Vehicle Trips - Strip Mall is “Specialty Retail” (ITE 9th Edition LU 234) per traffic study. Hotel rate updated to 8.36 per traffic study. Rate for Restaurant and retail includes 19% trip capture estimate. CalEEMod trip ratios used to calc Sat and Sun trip rates

Vehicle Emission Factors - EMFAC2017 EFs for Napa Co. 2023

Vehicle Emission Factors -

Vehicle Emission Factors -

Energy Use - The natural gas based on project data is 48,563 therms/year --> approximatley 15% lower than CalEEMod estimate. reduce natural gas intensity by 15%

Water And Wastewater - Assume all WW treated by municipl WWTF

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

Energy Mitigation - Solar power = 685,000 kWh/year

Waste Mitigation - 20% reduction in waste

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
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tblEnergyUse	T24NG	39.56	33.63
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tblFleetMix	HHD	0.04	0.03
tblFleetMix	HHD	0.04	0.03
tblFleetMix	HHD	0.04	0.03
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tblFleetMix	LDT1	0.04	0.05

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tblFleetMix	LHD1	0.02	0.03
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tblFleetMix	MHD	0.02	0.02

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tblFleetMix	UBUS	1.7610e-003	1.5220e-003
tblFleetMix	UBUS	1.7610e-003	1.5220e-003
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tblGrading	MaterialImported	0.00	7,000.00
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tblLandUse	LandUseSquareFeet	3,440.00	3,437.00
tblLandUse	LandUseSquareFeet	5,290.00	5,285.00
tblLandUse	LotAcreage	2.10	0.00
tblLandUse	LotAcreage	3.20	7.06
tblLandUse	LotAcreage	0.08	0.00
tblLandUse	LotAcreage	0.12	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	109
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	129.00	0.00
tblTripsAndVMT	HaulingTripNumber	1,750.00	0.00
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tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00

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tblVehicleEF	LDA	0.03	0.22
tblVehicleEF	LDA	0.07	0.24

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tblVehicleEF	LDA	0.10	0.11
tblVehicleEF	LDA	0.02	0.03
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tblVehicleEF	LDT1	1.19	1.15
tblVehicleEF	LDT1	3.39	2.63
tblVehicleEF	LDT1	295.66	297.47
tblVehicleEF	LDT1	70.40	65.44
tblVehicleEF	LDT1	0.12	0.10
tblVehicleEF	LDT1	0.18	0.30
tblVehicleEF	LDT1	2.3590e-003	1.8760e-003
tblVehicleEF	LDT1	3.4560e-003	2.6050e-003
tblVehicleEF	LDT1	2.1720e-003	1.7270e-003
tblVehicleEF	LDT1	3.1780e-003	2.3950e-003
tblVehicleEF	LDT1	0.11	0.11
tblVehicleEF	LDT1	0.30	0.24
tblVehicleEF	LDT1	0.07	0.08
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.19	0.87
tblVehicleEF	LDT1	0.23	0.43
tblVehicleEF	LDT1	2.9710e-003	2.6770e-003
tblVehicleEF	LDT1	7.6400e-004	0.00
tblVehicleEF	LDT1	0.11	0.11
tblVehicleEF	LDT1	0.30	0.24

tblVehicleEF	LDT1	0.07	0.08
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.19	0.87
tblVehicleEF	LDT1	0.25	0.47
tblVehicleEF	LDT2	5.2830e-003	3.7190e-003
tblVehicleEF	LDT2	8.2890e-003	0.08
tblVehicleEF	LDT2	0.72	0.87
tblVehicleEF	LDT2	1.76	3.01
tblVehicleEF	LDT2	330.47	319.84
tblVehicleEF	LDT2	78.50	70.34
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.13	0.32
tblVehicleEF	LDT2	1.6670e-003	1.4090e-003
tblVehicleEF	LDT2	2.3640e-003	1.8440e-003
tblVehicleEF	LDT2	1.5330e-003	1.2970e-003
tblVehicleEF	LDT2	2.1740e-003	1.6950e-003
tblVehicleEF	LDT2	0.04	0.07
tblVehicleEF	LDT2	0.13	0.15
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.01	0.02
tblVehicleEF	LDT2	0.07	0.53
tblVehicleEF	LDT2	0.11	0.37
tblVehicleEF	LDT2	3.3100e-003	0.01
tblVehicleEF	LDT2	8.1500e-004	7.8000e-005
tblVehicleEF	LDT2	0.04	0.07
tblVehicleEF	LDT2	0.13	0.15
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.07	0.53
tblVehicleEF	LDT2	0.12	0.40

tblVehicleEF	LHD1	4.7830e-003	4.3820e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	0.14	0.17
tblVehicleEF	LHD1	1.47	1.24
tblVehicleEF	LHD1	2.76	1.04
tblVehicleEF	LHD1	9.40	9.52
tblVehicleEF	LHD1	690.21	779.22
tblVehicleEF	LHD1	27.95	10.11
tblVehicleEF	LHD1	0.10	0.09
tblVehicleEF	LHD1	2.26	1.62
tblVehicleEF	LHD1	0.96	0.30
tblVehicleEF	LHD1	1.0950e-003	1.0660e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.0090e-003	2.7100e-004
tblVehicleEF	LHD1	1.0480e-003	1.0200e-003
tblVehicleEF	LHD1	2.5700e-003	2.5280e-003
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	9.2700e-004	2.4900e-004
tblVehicleEF	LHD1	2.6540e-003	2.2730e-003
tblVehicleEF	LHD1	0.11	0.09
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.2030e-003	1.0230e-003
tblVehicleEF	LHD1	0.17	0.14
tblVehicleEF	LHD1	0.40	0.75
tblVehicleEF	LHD1	0.27	0.08
tblVehicleEF	LHD1	9.3000e-005	9.2000e-005
tblVehicleEF	LHD1	6.7620e-003	7.5790e-003
tblVehicleEF	LHD1	3.3100e-004	1.0000e-004

tblVehicleEF	LHD1	2.6540e-003	2.2730e-003
tblVehicleEF	LHD1	0.11	0.09
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	1.2030e-003	1.0230e-003
tblVehicleEF	LHD1	0.21	0.18
tblVehicleEF	LHD1	0.40	0.75
tblVehicleEF	LHD1	0.30	0.09
tblVehicleEF	LHD2	3.3050e-003	2.7530e-003
tblVehicleEF	LHD2	9.7640e-003	8.9990e-003
tblVehicleEF	LHD2	8.2270e-003	8.9830e-003
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.76	0.88
tblVehicleEF	LHD2	1.22	0.57
tblVehicleEF	LHD2	14.50	15.02
tblVehicleEF	LHD2	717.05	770.10
tblVehicleEF	LHD2	22.80	6.67
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	1.43	1.65
tblVehicleEF	LHD2	0.53	0.18
tblVehicleEF	LHD2	1.3220e-003	1.5370e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.9300e-004	1.2300e-004
tblVehicleEF	LHD2	1.2650e-003	1.4700e-003
tblVehicleEF	LHD2	2.7050e-003	2.7400e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.6100e-004	1.1300e-004
tblVehicleEF	LHD2	9.0300e-004	1.0770e-003
tblVehicleEF	LHD2	0.04	0.05
tblVehicleEF	LHD2	0.01	0.02

tblVehicleEF	LHD2	4.5200e-004	5.0800e-004
tblVehicleEF	LHD2	0.13	0.14
tblVehicleEF	LHD2	0.09	0.32
tblVehicleEF	LHD2	0.11	0.05
tblVehicleEF	LHD2	1.4100e-004	1.4300e-004
tblVehicleEF	LHD2	6.9680e-003	7.4140e-003
tblVehicleEF	LHD2	2.5000e-004	6.6000e-005
tblVehicleEF	LHD2	9.0300e-004	1.0770e-003
tblVehicleEF	LHD2	0.04	0.05
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.5200e-004	5.0800e-004
tblVehicleEF	LHD2	0.15	0.17
tblVehicleEF	LHD2	0.09	0.32
tblVehicleEF	LHD2	0.12	0.05
tblVehicleEF	MCY	0.44	0.33
tblVehicleEF	MCY	0.17	0.27
tblVehicleEF	MCY	20.12	20.46
tblVehicleEF	MCY	10.45	9.27
tblVehicleEF	MCY	167.67	209.85
tblVehicleEF	MCY	46.91	63.42
tblVehicleEF	MCY	1.17	1.18
tblVehicleEF	MCY	0.33	0.28
tblVehicleEF	MCY	2.0500e-003	1.9600e-003
tblVehicleEF	MCY	4.3420e-003	3.3360e-003
tblVehicleEF	MCY	1.9200e-003	1.8360e-003
tblVehicleEF	MCY	4.1030e-003	3.1480e-003
tblVehicleEF	MCY	0.89	1.79
tblVehicleEF	MCY	0.83	0.82
tblVehicleEF	MCY	0.43	0.87
tblVehicleEF	MCY	2.27	2.29

tblVehicleEF	MCY	0.66	2.38
tblVehicleEF	MCY	2.36	2.09
tblVehicleEF	MCY	2.0710e-003	2.0770e-003
tblVehicleEF	MCY	7.1000e-004	6.2800e-004
tblVehicleEF	MCY	0.89	1.79
tblVehicleEF	MCY	0.83	0.82
tblVehicleEF	MCY	0.43	0.87
tblVehicleEF	MCY	2.79	2.81
tblVehicleEF	MCY	0.66	2.38
tblVehicleEF	MCY	2.57	2.27
tblVehicleEF	MDV	0.01	4.6390e-003
tblVehicleEF	MDV	0.02	0.10
tblVehicleEF	MDV	1.21	0.99
tblVehicleEF	MDV	3.65	3.59
tblVehicleEF	MDV	455.63	395.09
tblVehicleEF	MDV	106.78	86.60
tblVehicleEF	MDV	0.16	0.11
tblVehicleEF	MDV	0.32	0.40
tblVehicleEF	MDV	1.8020e-003	1.5370e-003
tblVehicleEF	MDV	2.5850e-003	1.9760e-003
tblVehicleEF	MDV	1.6620e-003	1.4200e-003
tblVehicleEF	MDV	2.3770e-003	1.8170e-003
tblVehicleEF	MDV	0.07	0.08
tblVehicleEF	MDV	0.22	0.18
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.12	0.58
tblVehicleEF	MDV	0.28	0.49
tblVehicleEF	MDV	4.5640e-003	3.9050e-003
tblVehicleEF	MDV	1.1320e-003	8.5700e-004

tblVehicleEF	MDV	0.07	0.08
tblVehicleEF	MDV	0.22	0.18
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.04	0.03
tblVehicleEF	MDV	0.12	0.58
tblVehicleEF	MDV	0.31	0.53
tblVehicleEF	MH	0.03	0.01
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	2.39	1.25
tblVehicleEF	MH	6.25	2.22
tblVehicleEF	MH	1,230.46	1,577.98
tblVehicleEF	MH	60.30	19.22
tblVehicleEF	MH	1.59	1.69
tblVehicleEF	MH	0.93	0.26
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.1490e-003	2.5700e-004
tblVehicleEF	MH	3.2110e-003	3.2740e-003
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.0560e-003	2.3600e-004
tblVehicleEF	MH	0.89	0.71
tblVehicleEF	MH	0.08	0.07
tblVehicleEF	MH	0.30	0.24
tblVehicleEF	MH	0.11	0.08
tblVehicleEF	MH	0.02	1.46
tblVehicleEF	MH	0.36	0.10
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	7.1200e-004	1.9000e-004
tblVehicleEF	MH	0.89	0.71
tblVehicleEF	MH	0.08	0.07

tblVehicleEF	MH	0.30	0.24
tblVehicleEF	MH	0.15	0.11
tblVehicleEF	MH	0.02	1.46
tblVehicleEF	MH	0.40	0.11
tblVehicleEF	MHD	0.02	2.7920e-003
tblVehicleEF	MHD	5.8140e-003	2.6970e-003
tblVehicleEF	MHD	0.07	8.7320e-003
tblVehicleEF	MHD	0.30	0.40
tblVehicleEF	MHD	0.44	0.36
tblVehicleEF	MHD	6.38	1.13
tblVehicleEF	MHD	163.93	89.38
tblVehicleEF	MHD	1,193.86	1,097.63
tblVehicleEF	MHD	47.90	7.91
tblVehicleEF	MHD	0.49	0.55
tblVehicleEF	MHD	1.23	1.60
tblVehicleEF	MHD	12.90	1.82
tblVehicleEF	MHD	2.2800e-004	5.9700e-004
tblVehicleEF	MHD	3.4490e-003	7.7470e-003
tblVehicleEF	MHD	8.6600e-004	1.1600e-004
tblVehicleEF	MHD	2.1800e-004	5.7100e-004
tblVehicleEF	MHD	3.2940e-003	7.4060e-003
tblVehicleEF	MHD	7.9600e-004	1.0700e-004
tblVehicleEF	MHD	9.4400e-004	4.7700e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	4.3300e-004	2.1400e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.02	0.14
tblVehicleEF	MHD	0.37	0.05
tblVehicleEF	MHD	1.5740e-003	8.4700e-004

tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	5.9100e-004	7.8000e-005
tblVehicleEF	MHD	9.4400e-004	4.7700e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	4.3300e-004	2.1400e-004
tblVehicleEF	MHD	0.06	0.03
tblVehicleEF	MHD	0.02	0.14
tblVehicleEF	MHD	0.41	0.05
tblVehicleEF	OBUS	0.01	7.2750e-003
tblVehicleEF	OBUS	6.8480e-003	5.0960e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.60
tblVehicleEF	OBUS	0.51	0.58
tblVehicleEF	OBUS	5.64	1.96
tblVehicleEF	OBUS	196.95	96.34
tblVehicleEF	OBUS	1,313.33	1,398.56
tblVehicleEF	OBUS	59.53	15.89
tblVehicleEF	OBUS	0.46	0.39
tblVehicleEF	OBUS	1.13	1.39
tblVehicleEF	OBUS	5.13	1.08
tblVehicleEF	OBUS	4.2000e-005	1.2700e-004
tblVehicleEF	OBUS	3.1000e-003	7.0080e-003
tblVehicleEF	OBUS	6.6000e-004	1.4100e-004
tblVehicleEF	OBUS	4.0000e-005	1.2200e-004
tblVehicleEF	OBUS	2.9550e-003	6.6910e-003
tblVehicleEF	OBUS	6.0700e-004	1.2900e-004
tblVehicleEF	OBUS	1.1750e-003	1.0530e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.04	0.05

tblVehicleEF	OBUS	5.0000e-004	4.4500e-004
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.02	0.19
tblVehicleEF	OBUS	0.34	0.09
tblVehicleEF	OBUS	1.8890e-003	9.1500e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	6.9400e-004	1.5700e-004
tblVehicleEF	OBUS	1.1750e-003	1.0530e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	5.0000e-004	4.4500e-004
tblVehicleEF	OBUS	0.07	0.04
tblVehicleEF	OBUS	0.02	0.19
tblVehicleEF	OBUS	0.38	0.10
tblVehicleEF	SBUS	0.83	0.01
tblVehicleEF	SBUS	0.01	5.0670e-003
tblVehicleEF	SBUS	0.08	9.8900e-004
tblVehicleEF	SBUS	5.00	0.82
tblVehicleEF	SBUS	0.86	0.29
tblVehicleEF	SBUS	6.18	0.14
tblVehicleEF	SBUS	1,286.40	337.30
tblVehicleEF	SBUS	1,132.53	1,133.82
tblVehicleEF	SBUS	32.53	0.85
tblVehicleEF	SBUS	11.39	3.99
tblVehicleEF	SBUS	4.35	6.43
tblVehicleEF	SBUS	15.82	0.62
tblVehicleEF	SBUS	0.01	3.8510e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.04
tblVehicleEF	SBUS	4.6800e-004	9.0000e-006

tblVehicleEF	SBUS	0.01	3.6840e-003
tblVehicleEF	SBUS	2.7540e-003	2.9100e-003
tblVehicleEF	SBUS	0.02	0.04
tblVehicleEF	SBUS	4.3000e-004	8.0000e-006
tblVehicleEF	SBUS	1.6420e-003	7.6000e-005
tblVehicleEF	SBUS	0.02	6.5200e-004
tblVehicleEF	SBUS	0.59	0.07
tblVehicleEF	SBUS	7.3900e-004	3.2000e-005
tblVehicleEF	SBUS	0.12	0.10
tblVehicleEF	SBUS	7.7100e-003	4.8200e-003
tblVehicleEF	SBUS	0.29	5.3100e-003
tblVehicleEF	SBUS	0.01	3.1920e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	4.3100e-004	8.0000e-006
tblVehicleEF	SBUS	1.6420e-003	7.6000e-005
tblVehicleEF	SBUS	0.02	6.5200e-004
tblVehicleEF	SBUS	0.84	0.10
tblVehicleEF	SBUS	7.3900e-004	3.2000e-005
tblVehicleEF	SBUS	0.14	0.12
tblVehicleEF	SBUS	7.7100e-003	4.8200e-003
tblVehicleEF	SBUS	0.32	5.8140e-003
tblVehicleEF	UBUS	0.25	1.06
tblVehicleEF	UBUS	0.08	0.07
tblVehicleEF	UBUS	4.11	7.56
tblVehicleEF	UBUS	12.95	4.11
tblVehicleEF	UBUS	1,938.09	1,707.82
tblVehicleEF	UBUS	177.77	46.80
tblVehicleEF	UBUS	6.60	0.41
tblVehicleEF	UBUS	10.54	0.52
tblVehicleEF	UBUS	0.43	0.11

tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.13	2.2660e-003
tblVehicleEF	UBUS	1.1680e-003	1.8200e-004
tblVehicleEF	UBUS	0.18	0.05
tblVehicleEF	UBUS	3.0000e-003	3.7960e-003
tblVehicleEF	UBUS	0.12	2.1510e-003
tblVehicleEF	UBUS	1.0740e-003	1.6800e-004
tblVehicleEF	UBUS	4.9310e-003	3.9450e-003
tblVehicleEF	UBUS	0.09	0.06
tblVehicleEF	UBUS	2.6490e-003	2.3500e-003
tblVehicleEF	UBUS	0.51	0.02
tblVehicleEF	UBUS	0.02	0.41
tblVehicleEF	UBUS	1.06	0.29
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	2.0130e-003	4.6300e-004
tblVehicleEF	UBUS	4.9310e-003	3.9450e-003
tblVehicleEF	UBUS	0.09	0.06
tblVehicleEF	UBUS	2.6490e-003	2.3500e-003
tblVehicleEF	UBUS	0.80	1.10
tblVehicleEF	UBUS	0.02	0.41
tblVehicleEF	UBUS	1.16	0.32
tblVehicleTrips	ST_TR	8.19	8.39
tblVehicleTrips	ST_TR	94.36	71.12
tblVehicleTrips	ST_TR	42.04	34.10
tblVehicleTrips	SU_TR	5.95	6.09
tblVehicleTrips	SU_TR	72.16	54.38
tblVehicleTrips	SU_TR	20.43	16.57
tblVehicleTrips	WD_TR	8.17	8.36
tblVehicleTrips	WD_TR	89.95	67.79
tblVehicleTrips	WD_TR	44.32	35.95

tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	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

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	0.5434	3.00E-05	3.10E-03	0		1.00E-05	1.00E-05		1.00E-05	1.00E-05	0	6.03E-03	6.03E-03	2.00E-05	0	6.43E-03
Energy	0.0267	0.2428	0.2039	1.46E-03		0.0185	0.0185		0.0185	0.0185	0	316.4955	316.4955	0.019	7.72E-03	319.2699
Mobile	0.9594	0.9418	5.8225	7.93E-03	0.7779	7.86E-03	0.7857	0.2083	7.38E-03	0.2156	0	772.0968	772.0968	0.0851	0	774.2251
Waste						0	0		0	0	12.4332	0	12.4332	0.7348	0	30.8027
Water						0	0		0	0	1.3696	1.1356	2.5052	5.02E-03	3.04E-03	3.5369
Total	**1.5295**	**1.1846**	**6.0296**	**9.39E-03**	**0.7779**	**0.0263**	**0.8042**	**0.2083**	**0.0258**	**0.2341**	**13.8028**	**1,089.73**	**1,103.54**	**0.8439**	**0.0108**	**1,127.84**

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	0.5434	3.0000e-005	3.1000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.43E-03
Energy	0.0267	0.2428	0.2039	1.4600e-003		0.0185	0.0185		0.0185	0.0185	0.0000	282.6280	282.6280	9.9500e-003	5.8600e-003	284.6216
Mobile	0.9594	0.9418	5.8225	7.9300e-003	0.7779	7.8600e-003	0.7857	0.2083	7.3800e-003	0.2156	0.0000	772.0968	772.0968	0.0851	0.0000	774.2251
Waste						0.0000	0.0000		0.0000	0.0000	9.9466	0.0000	9.9466	0.5878	0.0000	24.6422
Water						0.0000	0.0000		0.0000	0.0000	1.3696	1.1356	2.5052	5.0200e-003	3.0400e-003	3.5369
Total	**1.5295**	**1.1846**	**6.0296**	**9.3900e-003**	**0.7779**	**0.0263**	**0.8042**	**0.2083**	**0.0258**	**0.2341**	**11.3162**	**1,055.8664**	**1,067.1826**	**0.6879**	**8.9000e-003**	**1,087.0322**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**18.02**	**3.11**	**3.29**	**18.48**	**17.29**	**3.62**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

Mitigated	0.9594	0.9418	5.8225	7.9300e-003	0.7779	7.8600e-003	0.7857	0.2083	7.3800e-003	0.2156	0.0000	772.0968	772.0968	0.0851	0.0000	774.2251
Unmitigated	0.9594	0.9418	5.8225	7.9300e-003	0.7779	7.8600e-003	0.7857	0.2083	7.3800e-003	0.2156	0.0000	772.0968	772.0968	0.0851	0.0000	774.2251

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	802.56	805.44	584.64	1,550,757	1,550,757
Parking Lot	0.00	0.00	0.00		
Quality Restaurant	233.20	244.65	187.07	271,018	271,018
Strip Mall	190.18	180.39	87.66	277,909	277,909
Total	1,225.93	1,230.48	859.36	2,099,684	2,099,684

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	14.70	6.60	6.60	19.40	61.60	19.00	58	38	4
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Quality Restaurant	14.70	6.60	6.60	12.00	69.00	19.00	38	18	44
Strip Mall	14.70	6.60	6.60	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.530589	0.049522	0.159707	0.113711	0.028026	0.006987	0.017442	0.028575	0.002772	0.001522	0.058629	0.001580	0.000939
Parking Lot	0.530589	0.049522	0.159707	0.113711	0.028026	0.006987	0.017442	0.028575	0.002772	0.001522	0.058629	0.001580	0.000939
Quality Restaurant	0.530589	0.049522	0.159707	0.113711	0.028026	0.006987	0.017442	0.028575	0.002772	0.001522	0.058629	0.001580	0.000939
Strip Mall	0.530589	0.049522	0.159707	0.113711	0.028026	0.006987	0.017442	0.028575	0.002772	0.001522	0.058629	0.001580	0.000939

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	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	18.3563	18.3563	4.8800e-003	1.0100e-003	18.7795
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	52.2238	52.2238	0.0139	2.8700e-003	53.4278
NaturalGas Mitigated	0.0267	0.2428	0.2039	1.4600e-003		0.0185	0.0185		0.0185	0.0185	0.0000	264.2717	264.2717	5.0700e-003	4.8400e-003	265.8421
NaturalGas Unmitigated	0.0267	0.2428	0.2039	1.4600e-003		0.0185	0.0185		0.0185	0.0185	0.0000	264.2717	264.2717	5.0700e-003	4.8400e-003	265.8421

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					
Hotel	4.22526e+006	0.0228	0.2071	0.1740	1.2400e-003		0.0157	0.0157		0.0157	0.0157	0.0000	225.4757	225.4757	4.3200e-003	4.1300e-003	226.8156
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
Quality Restaurant	714484	3.8500e-003	0.0350	0.0294	2.1000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	38.1276	38.1276	7.3000e-004	7.0000e-004	38.3541
Strip Mall	12525.5	7.0000e-005	6.1000e-004	5.2000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6684	0.6684	1.0000e-005	1.0000e-005	0.6724
Total		**0.0267**	**0.2428**	**0.2039**	**1.4500e-003**		**0.0185**	**0.0185**		**0.0185**	**0.0185**	**0.0000**	**264.2717**	**264.2717**	**5.0600e-003**	**4.8400e-003**	**265.8421**

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					
Hotel	4.22526e+006	0.0228	0.2071	0.1740	1.2400e-003		0.0157	0.0157		0.0157	0.0157	0.0000	225.4757	225.4757	4.3200e-003	4.1300e-003	226.8156
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
Quality Restaurant	714484	3.8500e-003	0.0350	0.0294	2.1000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	38.1276	38.1276	7.3000e-004	7.0000e-004	38.3541
Strip Mall	12525.5	7.0000e-005	6.1000e-004	5.2000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6684	0.6684	1.0000e-005	1.0000e-005	0.6724
Total		**0.0267**	**0.2428**	**0.2039**	**1.4500e-003**		**0.0185**	**0.0185**		**0.0185**	**0.0185**	**0.0000**	**264.2717**	**264.2717**	**5.0600e-003**	**4.8400e-003**	**265.8421**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	854697	42.2576	0.0112	2.3300e-003	43.2318
Parking Lot	32620	1.6128	4.3000e-004	9.0000e-005	1.6500
Quality Restaurant	112459	5.5601	1.4800e-003	3.1000e-004	5.6883
Strip Mall	56496.6	2.7933	7.4000e-004	1.5000e-004	2.8577
Total		**52.2238**	**0.0139**	**2.8800e-003**	**53.4278**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	683447	33.7907	8.9900e-003	1.8600e-003	34.5698
Parking Lot	-138630	-6.8541	-0.0018	-0.0004	-7.0121
Quality Restaurant	-58791.4	-2.9067	-0.0008	-0.0002	-2.9738
Strip Mall	-114753	-5.6736	-0.0015	-0.0003	-5.8044
Total		**18.3563**	**4.8900e-003**	**1.0100e-003**	**18.7795**

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	0.5434	3.0000e-005	3.1000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4300e-003
Unmitigated	0.5434	3.0000e-005	3.1000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0650					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4782					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.9000e-004	3.0000e-005	3.1000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4300e-003
Total	**0.5434**	**3.0000e-005**	**3.1000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.0300e-003**	**6.0300e-003**	**2.0000e-005**	**0.0000**	**6.4300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0650					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4782					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.9000e-004	3.0000e-005	3.1000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4300e-003
Total	**0.5434**	**3.0000e-005**	**3.1000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.0300e-003**	**6.0300e-003**	**2.0000e-005**	**0.0000**	**6.4300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.5052	5.0200e-003	3.0400e-003	3.5369
Unmitigated	2.5052	5.0200e-003	3.0400e-003	3.5369

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	2.43521 / 0.270579	1.5599	3.1500e-003	1.9100e-003	2.2085
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	1.04416 / 0.0666483	0.6603	1.3500e-003	8.2000e-004	0.9382
Strip Mall	0.391844 / 0.240162	0.2850	5.2000e-004	3.1000e-004	0.3902
Total		**2.5052**	**5.0200e-003**	**3.0400e-003**	**3.5369**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	2.43521 / 0.270579	1.5599	3.1500e-003	1.9100e-003	2.2085
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	1.04416 / 0.0666483	0.6603	1.3500e-003	8.2000e-004	0.9382
Strip Mall	0.391844 / 0.240162	0.2850	5.2000e-004	3.1000e-004	0.3902
Total		**2.5052**	**5.0200e-003**	**3.0400e-003**	**3.5369**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9.9466	0.5878	0.0000	24.6422
Unmitigated	12.4332	0.7348	0.0000	30.8027

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	52.56	10.6692	0.6305	0.0000	26.4325
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	3.14	0.6374	0.0377	0.0000	1.5791
Strip Mall	5.55	1.1266	0.0666	0.0000	2.7911
Total		**12.4332**	**0.7348**	**0.0000**	**30.8027**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	42.048	8.5354	0.5044	0.0000	21.1460
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	2.512	0.5099	0.0301	0.0000	1.2633
Strip Mall	4.44	0.9013	0.0533	0.0000	2.2329
Total		**9.9466**	**0.5878**	**0.0000**	**24.6422**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 3: EMFAC2017 Calculations

Summary of Construction Traffic Emissions (EMFAC2017)

Pollutants YEAR	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
					Tons						*Metric Tons*
Criteria Pollutants											
2021	0.4522	0.4465	0.3368	0.0019	0.0046	0.0254	0.0300	0.0046	0.0136	0.0182	179.6384
2022	0.0925	0.0857	0.0687	0.0004	0.0010	0.0051	0.0061	0.0010	0.0024	0.0035	39.7241
Toxic Air Contaminants (1 Mile Trip Length)											
2021	0.4361	0.1062	0.1175	0.0003	0.0005	0.0028	0.0033	0.0005	0.0016	0.0020	25.6939
2022	0.0902	0.0227	0.0260	0.0001	0.0001	0.0006	0.0007	0.0001	0.0003	0.0004	5.7611

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	129	10.8	6.6	20	LD_Mix	HDT_Mix	HHDT	3240	0	2580
Site Preparation	18	0	180	0	0	10.8	6.6	20	LD_Mix	HDT_Mix	HHDT	1944	0	0
Grading	15	0	300	0	1750	10.8	6.6	20	LD_Mix	HDT_Mix	HHDT	3240	0	35000
Trenching	5	0	100	0	0	10.8	6.6	20	LD_Mix	HDT_Mix	HHDT	1080	0	0
Building Construction	89	35	20470	8050	700	10.8	6.6	20	LD_Mix	HDT_Mix	HHDT	221076	53130	14000
Paving	15	0	300	0	200	10.8	6.6	20	LD_Mix	HDT_Mix	HHDT	3240	0	4000
Architectural Coating	18	0	360	0	0	10.8	6.6	20	LD_Mix	HDT_Mix	HHDT	3888	0	0

Number of Days Per Year					
2021	1/1/2021	12/31/21	365		
2022	1/1/22	3/24/22	83		
2023					
			448	**321**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	1/1/2021	1/28/2021	5	20
Site Preparation	1/29/2021	2/11/2021	5	10
Grading	2/12/2021	3/11/2021	5	20
Trenching	2/12/2021	3/11/2021	5	20
Building Construction	3/12/2021	1/27/2022	5	230
Paving	1/28/2022	2/24/2022	5	20
Architectural Coating	2/25/2022	3/24/2022	5	20

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

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PMB	PM2.5_PMT	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PMB	PM10_PMT	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	TOG_RUNI	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RESTI	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Napa	2021	HHDT	Aggregate	Aggregate	Gasoline	0.702662	88.27802	14.05887	3.191807	0	0.004175	0.000367	0	6.76E-05	0.005	0.02646	0.000399	0	7.35E-05	0.02	0.06174	2181.956	0	48.12117	0.07752	0	0.000184	0.13709	0	0.000203	0.347367	0	0.000963	0.058807	0.310203	0.014669	0.024563	0.506877	0	0.001055	0.058807	0.310203	0.014669	0.024563	32.62213	0	4.831722	0.021592	0	0.000476
Napa	2021	HHDT	Aggregate	Aggregate	Diesel	1041.006	112573.1	10309.44	4.468129	59.01893	1.907661	0.063704	0.090932	0	0.008794	0.025855	0.066584	0.095044	0	0.035177	0.060329	1562.603	10276.57	0	0.007051	0.193028	0	0.24562	1.615333	0	0.151799	4.155848	0	0	0	0.172812	4.731116	0	0	0	0	0	0.556017	52.16793	0	0.014763	0.097088	0
Napa	2021	HHDT	Aggregate	Aggregate	Natural Ga	28.2674	1151.319	110.2429	4.564329	27.48871	0	0.01355	0.097938	0	0.009	0.02646	0.014163	0.102367	0	0.036	0.06174	3165.985	4052.348	0	4.6628	1.501424	0	0.645407	0.826098	0	0.415417	0.109374	0	0	0	5.156139	1.63249	0	0	0	0	0	9.725966	22.56065	0	0	0	0
Napa	2021	LDA	Aggregate	Aggregate	Gasoline	50092.02	2048891	233848.5	0.049738	0	0.229726	0.001385	0	0.001902	0.002	0.01575	0.001506	0	0.002068	0.008	0.03675	264.4356	0	57.95305	0.002939	0	0.065843	0.005237	0	0.029294	0.011763	0	0.307384	0.126236	0.254878	0.1805	0.240615	0.017152	0	0.336544	0.126236	0.254878	0.1805	0.240615	0.728403	0	2.554259	0.002617	0	0.000573
Napa	2021	LDA	Aggregate	Aggregate	Diesel	649.5025	26420.83	2995.849	0.120281	0	0	0.01063	0	0	0.002	0.01575	0.011111	0	0	0.008	0.03675	210.7209	0	0	0.000893	0	0	0.033122	0	0	0.019235	0	0	0	0	0.021898	0	0	0	0	0	0.244573	0	0	0.001992	0	0
Napa	2021	LDA	Aggregate	Aggregate	Electricity	835.5293	34400.61	4151.682	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0	0	0	0	0	0	0
Napa	2021	LDT1	Aggregate	Aggregate	Gasoline	5897.54	206679.5	26441.62	0.14055	0	0.347963	0.001986	0	0.002772	0.002	0.01575	0.00216	0	0.003014	0.008	0.03675	315.3933	0	69.41863	0.007302	0	0.101151	0.010211	0	0.03419	0.032656	0	0.532711	0.274898	1.005483	0.408155	0.602643	0.04762	0	0.583247	0.274898	1.005483	0.408155	0.602643	1.482837	0	2.857918	0.003121	0	0.000687
Napa	2021	LDT1	Aggregate	Aggregate	Diesel	4.775942	75.50867	15.8842	0.991	0	0	0.127842	0	0	0.002	0.01575	0.133623	0	0	0.008	0.03675	429.3826	0	0	0.00722	0	0	0.067493	0	0	0.15545	0	0	0	0	0.176969	0	0	0	0	0	0.976085	0	0	0.004059	0	0
Napa	2021	LDT1	Aggregate	Aggregate	Electricity	21.38995	860.4919	104.8437	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0	0	0	0	0	0	0
Napa	2021	LDT2	Aggregate	Aggregate	Gasoline	18019.61	667121.8	82865.22	0.108786	0	0.3773	0.001367	0	0.001841	0.002	0.01575	0.001487	0	0.002003	0.008	0.03675	344.5575	0	76.14802	0.00472	0	0.089598	0.008334	0	0.038286	0.019811	0	0.436266	0.165023	0.567442	0.276741	0.350294	0.028896	0	0.477654	0.165023	0.567442	0.276741	0.350294	1.048168	0	3.254816	0.00341	0	0.000754
Napa	2021	LDT2	Aggregate	Aggregate	Diesel	121.0615	5174.156	588.6617	0.062277	0	0	0.00531	0	0	0.002	0.01575	0.00555	0	0	0.008	0.03675	290.1329	0	0	0.000684	0	0	0.045605	0	0	0.014728	0	0	0	0	0.016767	0	0	0	0	0	0.137974	0	0	0.002743	0	0
Napa	2021	LDT2	Aggregate	Aggregate	Electricity	109.5432	3783.912	552.9488	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0	0	0	0	0	0	0
Napa	2021	LHDT1	Aggregate	Aggregate	Gasoline	1802.22	59816.07	26850.39	0.404585	0.040435	0.586629	0.00264	0	0.000501	0.002	0.03276	0.002871	0	0.000544	0.008	0.07644	1033.794	123.3714	19.58483	0.019359	0.122204	0.032098	0.022603	0.003002	0.042701	0.098339	0.462253	0.16746	0.182982	1.460164	0.029179	0.066213	0.143496	0.674519	0.183348	0.182982	1.460164	0.029179	0.066213	1.846867	3.726371	2.075239	0.01023	0.001221	0.000194
Napa	2021	LHDT1	Aggregate	Aggregate	Diesel	1896.912	66212.6	23860.76	3.184954	2.432851	0	0.034731	0.027226	0	0.003	0.03276	0.036301	0.028457	0	0.012	0.07644	578.3997	139.6971	0	0.009467	0.005098	0	0.090916	0.021958	0	0.203814	0.10976	0	0	0	0.232028	0.124954	0	0	0	0	0	0.940975	0.909745	0	0.005468	0.001321	0
Napa	2021	LHDT2	Aggregate	Aggregate	Gasoline	240.1005	8002.3	3577.14	0.375234	0.040364	0.603475	0.002279	0	0.000404	0.002	0.03822	0.002479	0	0.00044	0.008	0.08918	1180.999	142.0923	22.11024	0.014552	0.123293	0.032133	0.022003	0.002971	0.043478	0.070448	0.462075	0.1662	0.161202	1.154493	0.02541	0.056004	0.102798	0.674258	0.181968	0.161202	1.154493	0.02541	0.056004	1.341913	3.741734	1.9963	0.011687	0.001406	0.000219
Napa	2021	LHDT2	Aggregate	Aggregate	Diesel	620.6742	22515.86	7807.301	2.456262	2.404528	0	0.030487	0.02666	0	0.003	0.03822	0.031865	0.027865	0	0.012	0.08918	645.9199	222.9649	0	0.008433	0.005098	0	0.10153	0.035047	0	0.181567	0.10976	0	0	0	0.206702	0.124954	0	0	0	0	0	0.846843	0.909745	0	0.006106	0.002108	0
Napa	2021	MCY	Aggregate	Aggregate	Gasoline	2758.245	22321.19	5516.491	1.184829	0	0.275298	0.001794	0	0.003381	0.001	0.00504	0.001912	0	0.003574	0.004	0.01176	210.2037	0	64.0983	0.34016	0	0.275677	0.067728	0	0.015491	2.348851	0	2.115099	0.842369	2.534756	0.881138	1.793533	2.857726	0	2.300224	0.842369	2.534756	0.881138	1.793533	21.36735	0	9.217413	0.00208	0	0.000634
Napa	2021	MDV	Aggregate	Aggregate	Gasoline	14212.31	482130.3	64063.07	0.145081	0	0.491619	0.001444	0	0.002102	0.002	0.01575	0.001569	0	0.002284	0.008	0.03675	422.8694	0	94.92166	0.006453	0	0.114191	0.010494	0	0.043321	0.029865	0	0.594468	0.196048	0.621778	0.336593	0.407608	0.042038	0	0.650786	0.196048	0.621778	0.336593	0.407608	1.30969	0	4.130266	0.004185	0	0.000939
Napa	2021	MDV	Aggregate	Aggregate	Diesel	347.4034	14153.1	1663.134	0.059182	0	0	0.005845	0	0	0.002	0.01575	0.006109	0	0	0.008	0.03675	385.6034	0	0	0.000601	0	0	0.060611	0	0	0.012944	0	0	0	0	0.014736	0	0	0	0	0	0.212932	0	0	0.003645	0	0
Napa	2021	MDV	Aggregate	Aggregate	Electricity	41.85058	1490.451	213.0375	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0	0	0	0	0	0	0
Napa	2021	MH	Aggregate	Aggregate	Gasoline	360.1632	3110.702	36.03073	0.543551	0	0.339939	0.001659	0	0.000355	0.003	0.05586	0.001805	0	0.000386	0.012	0.13034	1820.31	0	26.80422	0.018693	0	0.03395	0.031322	0	0.033917	0.083213	0	0.146427	0.096954	2.185113	0.035328	0.106753	0.121425	0	0.160319	0.096954	2.185113	0.035328	0.106753	2.123577	0	3.228084	0.018013	0	0.000265
Napa	2021	MH	Aggregate	Aggregate	Diesel	119.0783	1100.059	11.90783	5.296833	0	0	0.123744	0	0	0.004	0.05586	0.129339	0	0	0.016	0.13034	1049.625	0	0	0.006361	0	0	0.164986	0	0	0.136956	0	0	0	0	0.155916	0	0	0	0	0	0.506138	0	0	0.009923	0	0
Napa	2021	MHDT	Aggregate	Aggregate	Gasoline	141.5466	7170.085	2832.064	1.045716	0.087169	0.418742	0.00162	0	0.000663	0.003	0.05586	0.001762	0	0.000722	0.012	0.13034	1783.87	548.5292	42.82914	0.034595	0.240947	0.048128	0.045032	0.006227	0.02711	0.177834	0.992942	0.282223	0.141728	0.876274	0.027328	0.062821	0.259495	1.448899	0.308998	0.141728	0.876274	0.027328	0.062821	4.157899	14.88758	6.537071	0.017653	0.005428	0.000424
Napa	2021	MHDT	Aggregate	Aggregate	Diesel	1271.237	68682.37	12419.66	3.637303	9.724551	1.28013	0.096579	0.034616	0	0.003	0.05586	0.100946	0.036182	0	0.012	0.13034	1104.687	1008.945	0	0.011079	0.007158	0	0.173641	0.158592	0	0.238538	0.154118	0	0	0	0.271557	0.175451	0	0	0	0	0	0.666555	2.846756	0	0.010437	0.009532	0
Napa	2021	OBUS	Aggregate	Aggregate	Gasoline	78.51294	4787.476	1570.887	0.489726	0.065062	0.319006	0.000919	0	0.000212	0.003	0.05586	0.000999	0	0.000231	0.012	0.13034	1817.604	384.2693	26.95024	0.014844	0.204897	0.03133	0.024876	0.005853	0.02658	0.070089	0.746329	0.158386	0.02685	0.284565	0.013141	0.03176	0.102274	1.089041	0.173412	0.02685	0.284565	0.013141	0.03176	1.570512	5.774865	3.383715	0.017987	0.003803	0.000267
Napa	2021	OBUS	Aggregate	Aggregate	Diesel	111.6545	7366.932	1031.839	3.963007	16.21821	1.408173	0.087217	0.059767	0	0.003	0.05586	0.09116	0.062469	0	0.012	0.13034	1255.399	2076.547	0	0.011484	0.038865	0	0.197331	0.326404	0	0.247241	0.836747	0	0	0	0.281465	0.952572	0	0	0	0	0	0.710272	9.301064	0	0.01186	0.019618	0
Napa	2021	SBUS	Aggregate	Aggregate	Gasoline	8.518438	495.5008	34.07375	0.132715	0.92653	0.59274	0.000866	0	0.000381	0.002	0.3192	0.000942	0	0.000414	0.008	0.7448	867.5475	2593.812	47.63072	0.002978	2.550984	0.055007	0.013387	0.094375	0.059791	0.012426	10.64152	0.294824	0.031776	0.245229	0.006377	0.015092	0.018132	15.52808	0.322795	0.031776	0.245229	0.006377	0.015092	0.195003	82.24088	7.95078	0.008585	0.025668	0.000471
Napa	2021	SBUS	Aggregate	Aggregate	Diesel	191.4122	6013.6	2208.87	7.291933	48.12476	0.553919	0.039827	0.046476	0	0.003	0.3192	0.041628	0.048577	0	0.012	0.7448	1172.888	3851.95	0	0.005227	0.013346	0	0.184362	0.605473	0	0.112537	0.287327	0	0	0	0.128115	0.3271	0	0	0	0	0	0.295689	4.959513	0	0.011081	0.036391	0
Napa	2021	UBUS	Aggregate	Aggregate	Gasoline	41.0259	3036.883	164.1036	0.315021	0	0.809785	0.00066	0	0.000202	0.002719	0.050909	0.000718	0	0.00022	0.010877	0.118787	2024.738	0	74.91729	0.005831	0	0.102206	0.025867	0	0.06854	0.019287	0	0.436701	0.077151	0.487716	0.012149	0.020707	0.028144	0	0.478133	0.077151	0.487716	0.012149	0.020707	0.36363	0	6.466129	0.020036	0	0.000741
Napa	2021	UBUS	Aggregate	Aggregate	Diesel	10.5487	1292.118	42.1948	0.733228	0	0	0.005224	0	0	0.007198	0.03529	0.005461	0	0	0.028792	0.082343	1533.715	0	0	0.068585	0	0	0.241079	0	0	0.00098	0	0	0	0	0.069996	0	0	0	0	0	0.115012	0	0	0.014499	0	0
Napa	2021	UBUS	Aggregate	Aggregate	Natural Ga	13.64606	1992.282	54.58424	0.30571	0	0	0.002086	0	0	0.003231	0.054728	0.00218	0	0	0.012924	0.1277	1374.416	0	0	3.322508	0	0	0.280184	0	0	0.047472	0	0	0	0	3.390863	0	0	0	0	0	23.32758	0	0	0	0	0

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

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PMB	PM2.5_PMT	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PMB	PM10_PMT	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	TOG_RUNI	TOG_RESTI	TOG_DIUR	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNI	TOG_RESTI	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Napa	2022	HHDT	Aggregate	Aggregate	Gasoline	0.665314	82.07736	13.31161	3.259851	0	0.004515	0.000446	0	8.36E-05	0.005	0.02646	0.000485	0	9.09E-05	0.02	0.06174	2136.716	0	46.59213	0.077713	0	0.000198	0.138936	0	0.00022	0.348801	0	0.001036	0.06154	0.326318	0.01535	0.025614	0.50897	0	0.001134	0.06154	0.326318	0.01535	0.025614	31.68782	0	4.111885	0.021145	0	0.000461
Napa	2022	HHDT	Aggregate	Aggregate	Diesel	1062.457	114944.2	10519.59	3.710799	58.25831	2.163947	0.034283	0.042864	0	0.008802	0.025877	0.035833	0.044802	0	0.035207	0.06038	1512.839	10480	0	0.004049	0.191662	0	0.237797	1.64731	0	0.087176	4.12642	0	0	0	0.099243	4.697615	0	0	0	0	0	0.375497	55.43817	0	0.014293	0.09901	0
Napa	2022	HHDT	Aggregate	Aggregate	Natural Ga	29.79171	1213.868	116.1877	3.9955	26.18712	0	0.012079	0.085616	0	0.009	0.02646	0.012625	0.089487	0	0.036	0.06174	3129.212	3995.596	0	4.445264	1.455308	0	0.63791	0.814528	0	0.365672	0.096973	0	0	0	4.880992	1.572046	0	0	0	0	0	9.925147	22.50147	0	0	0	0
Napa	2022	LDA	Aggregate	Aggregate	Gasoline	51277.05	2089425	239641.2	0.043217	0	0.213909	0.00132	0	0.00182	0.002	0.01575	0.001436	0	0.00198	0.008	0.03675	257.3693	0	56.40149	0.002548	0	0.060599	0.004791	0	0.028196	0.009983	0	0.277767	0.11731	0.243079	0.168089	0.220995	0.014559	0	0.304118	0.11731	0.243079	0.168089	0.220995	0.665864	0	2.479218	0.002547	0	0.000558
Napa	2022	LDA	Aggregate	Aggregate	Diesel	671.7376	27012.95	3098.394	0.101737	0	0	0.009323	0	0	0.002	0.01575	0.009745	0	0	0.008	0.03675	205.9356	0	0	0.0008	0	0	0.03237	0	0	0.01722	0	0	0	0	0.019604	0	0	0	0	0	0.231379	0	0	0.001947	0	0
Napa	2022	LDA	Aggregate	Aggregate	Electricity	986.6389	41545.31	4890.629	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0
Napa	2022	LDT1	Aggregate	Aggregate	Gasoline	5864.776	205083.2	26344.52	0.120877	0	0.322003	0.001835	0	0.002583	0.002	0.01575	0.001996	0	0.002809	0.008	0.03675	307.7904	0	67.69936	0.006279	0	0.092468	0.009071	0	0.032813	0.027845	0	0.480736	0.256584	0.936826	0.385632	0.560463	0.040613	0	0.526342	0.256584	0.936826	0.385632	0.560463	1.310286	0	2.751113	0.003046	0	0.00067
Napa	2022	LDT1	Aggregate	Aggregate	Diesel	4.366016	68.00149	14.41585	0.924706	0	0	0.119766	0	0	0.002	0.01575	0.125181	0	0	0.008	0.03675	425.0712	0	0	0.006786	0	0	0.066815	0	0	0.146107	0	0	0	0	0.166333	0	0	0	0	0	0.919258	0	0	0.004018	0	0
Napa	2022	LDT1	Aggregate	Aggregate	Electricity	29.74839	1272.431	147.5176	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0
Napa	2022	LDT2	Aggregate	Aggregate	Gasoline	17947.74	659088.6	82492.71	0.09522	0	0.347394	0.001317	0	0.001779	0.002	0.01575	0.001432	0	0.001935	0.008	0.03675	333.876	0	73.90431	0.00422	0	0.083929	0.007534	0	0.036434	0.017529	0	0.404344	0.15964	0.554489	0.273944	0.342037	0.02557	0	0.442704	0.15964	0.554489	0.273944	0.342037	0.960234	0	3.151357	0.003304	0	0.000731
Napa	2022	LDT2	Aggregate	Aggregate	Diesel	128.7485	5387.481	622.9501	0.056253	0	0	0.005109	0	0	0.002	0.01575	0.00534	0	0	0.008	0.03675	283.5511	0	0	0.00067	0	0	0.04457	0	0	0.014434	0	0	0	0	0.016433	0	0	0	0	0	0.137578	0	0	0.002681	0	0
Napa	2022	LDT2	Aggregate	Aggregate	Electricity	141.3655	4814.543	711.8333	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0
Napa	2022	LHDT1	Aggregate	Aggregate	Gasoline	1736.28	57289.55	25867.98	0.377852	0.039809	0.577128	0.002587	0	0.000489	0.002	0.03276	0.002813	0	0.000532	0.008	0.07644	1025.648	122.781	19.47322	0.018231	0.120909	0.030776	0.021142	0.00299	0.042223	0.092741	0.455167	0.160428	0.181643	1.450449	0.029313	0.065737	0.135328	0.664179	0.175649	0.181643	1.450449	0.029313	0.065737	1.74294	3.729066	2.030474	0.01015	0.001215	0.000193
Napa	2022	LHDT1	Aggregate	Aggregate	Diesel	1854.586	63800.89	23328.35	2.972977	2.379828	0	0.033316	0.027041	0	0.003	0.03276	0.034823	0.028264	0	0.012	0.07644	573.3239	138.889	0	0.009261	0.005098	0	0.090119	0.021831	0	0.199384	0.10976	0	0	0	0.226986	0.124954	0	0	0	0	0	0.925998	0.909745	0	0.00542	0.001313	0
Napa	2022	LHDT2	Aggregate	Aggregate	Gasoline	234.0554	7776.125	3487.076	0.341525	0.039656	0.595084	0.002205	0	0.000386	0.002	0.03822	0.002398	0	0.00042	0.008	0.08918	1170.867	141.3336	21.95591	0.012892	0.121899	0.030757	0.020244	0.002959	0.043103	0.061806	0.454116	0.158511	0.157994	1.10717	0.025129	0.054301	0.090187	0.662644	0.17355	0.157994	1.10717	0.025129	0.054301	1.176658	3.746148	1.932434	0.011587	0.001399	0.000217
Napa	2022	LHDT2	Aggregate	Aggregate	Diesel	616.8541	21994.57	7759.249	2.288164	2.343858	0	0.029734	0.026654	0	0.003	0.03822	0.031078	0.02786	0	0.012	0.08918	639.9344	221.5838	0	0.008292	0.005098	0	0.100589	0.03483	0	0.178529	0.10976	0	0	0	0.203243	0.124954	0	0	0	0	0	0.838595	0.909745	0	0.00605	0.002095	0
Napa	2022	MCY	Aggregate	Aggregate	Gasoline	2759.67	22060.1	5519.34	1.180477	0	0.275602	0.001819	0	0.003286	0.001	0.00504	0.00194	0	0.003477	0.004	0.01176	210.0224	0	63.77299	0.337293	0	0.274002	0.06754	0	0.015509	2.317708	0	2.100813	0.833492	2.461717	0.879169	1.79587	2.830959	0	2.284959	0.833492	2.461717	0.879169	1.79587	20.88798	0	9.24298	0.002078	0	0.000631
Napa	2022	MDV	Aggregate	Aggregate	Gasoline	13914.34	467746.6	62653.2	0.123877	0	0.45306	0.001374	0	0.00199	0.002	0.01575	0.001494	0	0.002164	0.008	0.03675	411.009	0	92.34304	0.005447	0	0.106256	0.009385	0	0.041206	0.023387	0	0.54652	0.191834	0.611876	0.334983	0.399764	0.034045	0	0.598361	0.191834	0.611876	0.334983	0.399764	1.128759	0	3.918064	0.004067	0	0.000914
Napa	2022	MDV	Aggregate	Aggregate	Diesel	359.2856	14286.15	1710.934	0.05371	0	0	0.005557	0	0	0.002	0.01575	0.005809	0	0	0.008	0.03675	377.3085	0	0	0.000576	0	0	0.059308	0	0	0.01241	0	0	0	0	0.014128	0	0	0	0	0	0.210741	0	0	0.003567	0	0
Napa	2022	MDV	Aggregate	Aggregate	Electricity	65.15437	2300.916	331.6749	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0
Napa	2022	MH	Aggregate	Aggregate	Gasoline	342.0587	2960.118	34.21955	0.48976	0	0.345143	0.001573	0	0.000336	0.003	0.05586	0.00171	0	0.000365	0.012	0.13034	1801.897	0	26.5115	0.016343	0	0.03358	0.029093	0	0.034995	0.071086	0	0.142865	0.092574	2.089507	0.03404	0.101167	0.103728	0	0.156419	0.092574	2.089507	0.03404	0.101167	1.762859	0	3.124121	0.017831	0	0.000262
Napa	2022	MH	Aggregate	Aggregate	Diesel	119.1868	1084.398	11.91868	5.134972	0	0	0.118339	0	0	0.004	0.05586	0.123689	0	0	0.016	0.13034	1041.01	0	0	0.006244	0	0	0.163632	0	0	0.134419	0	0	0	0	0.153027	0	0	0	0	0	0.493876	0	0	0.009841	0	0
Napa	2022	MHDT	Aggregate	Aggregate	Gasoline	137.0381	7160.997	2741.858	0.858471	0.087524	0.411797	0.001512	0	0.000605	0.003	0.05586	0.001644	0	0.000658	0.012	0.13034	1755.019	543.2855	41.9007	0.02775	0.247277	0.046685	0.037971	0.006571	0.027816	0.141274	0.998281	0.269804	0.131578	0.810993	0.024745	0.055942	0.206146	1.456689	0.295402	0.131578	0.810993	0.024745	0.055942	3.304129	14.94931	6.182518	0.017367	0.005376	0.000415
Napa	2022	MHDT	Aggregate	Aggregate	Diesel	1234.173	66974.62	11910.6	2.580748	8.443344	1.586023	0.049051	0.023547	0	0.003	0.05586	0.051269	0.024612	0	0.012	0.13034	1072.542	1006.727	0	0.005377	0.006053	0	0.168589	0.158243	0	0.115768	0.13031	0	0	0	0.131793	0.148348	0	0	0	0	0	0.377345	2.870282	0	0.010133	0.009511	0
Napa	2022	OBUS	Aggregate	Aggregate	Gasoline	75.85206	4447.961	1517.648	0.458705	0.06507	0.317543	0.000934	0	0.000214	0.003	0.05586	0.001016	0	0.000233	0.012	0.13034	1805.847	382.7965	26.77518	0.013877	0.204637	0.030972	0.023591	0.005857	0.026494	0.065515	0.746453	0.156576	0.028337	0.301182	0.014011	0.033516	0.095599	1.089222	0.171431	0.028337	0.301182	0.014011	0.033516	1.460511	5.775617	3.329774	0.01787	0.003788	0.000265
Napa	2022	OBUS	Aggregate	Aggregate	Diesel	109.2707	7378.004	1010.043	2.794999	11.83801	1.786826	0.033631	0.019493	0	0.003	0.05586	0.035152	0.020374	0	0.012	0.13034	1219.207	2027.426	0	0.004623	0.03079	0	0.191642	0.318683	0	0.099522	0.662893	0	0	0	0.113298	0.754653	0	0	0	0	0	0.341894	9.199404	0	0.011518	0.019154	0
Napa	2022	SBUS	Aggregate	Aggregate	Gasoline	9.392413	542.6087	37.56965	0.13224	0.92653	0.590971	0.000925	0	0.000409	0.002	0.3192	0.001006	0	0.000445	0.008	0.7448	857.0479	2564.544	47.10709	0.00294	2.549179	0.054595	0.013328	0.094567	0.059563	0.012273	10.64152	0.292829	0.033715	0.254756	0.006737	0.015821	0.017909	15.52808	0.320611	0.033715	0.254756	0.006737	0.015821	0.19466	82.24088	7.88463	0.009481	0.025378	0.000466
Napa	2022	SBUS	Aggregate	Aggregate	Diesel	191.7808	6003.058	2213.124	7.183762	47.48517	0.584322	0.039836	0.044983	0	0.003	0.3192	0.041638	0.047017	0	0.012	0.7448	1167.573	3840.592	0	0.005264	0.013303	0	0.183526	0.603688	0	0.113336	0.286409	0	0	0	0.129024	0.326055	0	0	0	0	0	0.29933	5.079583	0	0.011031	0.036284	0
Napa	2022	UBUS	Aggregate	Aggregate	Gasoline	41.04455	3038.263	164.1782	0.321609	0	0.803518	0.000885	0	0.000266	0.002719	0.050909	0.000963	0	0.00029	0.010877	0.118787	2000.885	0	74.33835	0.005631	0	0.102748	0.025575	0	0.068454	0.01868	0	0.443195	0.083311	0.551453	0.01273	0.021617	0.027257	0	0.485242	0.083311	0.551453	0.01273	0.021617	0.374953	0	6.531654	0.0198	0	0.000736
Napa	2022	UBUS	Aggregate	Aggregate	Diesel	10.55654	1293.181	42.22614	0.733114	0	0	0.005224	0	0	0.007196	0.035299	0.00546	0	0	0.028784	0.082365	1533.429	0	0	0.068571	0	0	0.241034	0	0	0.00098	0	0	0	0	0.069981	0	0	0	0	0	0.114985	0	0	0.014496	0	0
Napa	2022	UBUS	Aggregate	Aggregate	Natural Ga	13.64923	1992.712	54.59691	0.305722	0	0	0.002086	0	0	0.003231	0.054727	0.00218	0	0	0.012925	0.127696	1374.458	0	0	3.322706	0	0	0.280192	0	0	0.047475	0	0	0	0	3.391065	0	0	0	0	0	23.32928	0	0	0	0	0

CalEEMod EMFAC2017 Emission Factors Input

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004382	0.002753	0.002792	0.023048791	0.007275	0	0	0.01274	0
A	CH4_RUNEX	0.002152	0.005348	0.003719	0.004639	0.012753	0.008999	0.002697	0.046819853	0.005096	1.063504	0.334745	0.005067	0.0124
A	CH4_STREX	0.053925	0.083842	0.077162	0.095242	0.015404	0.008983	0.008732	2.47299E-07	0.01829	0.06706	0.272373	0.000989	0.024257
A	CO_IDLEX	0	0	0	0	0.16541	0.127235	0.397378	5.982942972	0.599352	0	0	0.817977	0
A	CO_RUNEX	0.597125	1.154747	0.872491	0.990232	1.24457	0.882301	0.363109	0.360766393	0.580327	7.560756	20.46414	0.292435	1.250723
A	CO_STREX	2.324011	2.634006	3.005309	3.585198	1.040319	0.573231	1.127807	0.004434594	1.96186	4.108225	9.272192	0.142353	2.221345
A	CO2_NBIO_IDLEX	0	0	0	0	9.518191	15.02263	89.37534	1018.202283	96.34384	0	0	337.3018	0
A	CO2_NBIO_RUNEX	243.9952	297.4712	319.8446	395.0938	779.2213	770.1025	1097.629	1452.889503	1398.563	1707.823	209.8527	1133.823	1577.976
A	CO2_NBIO_STREX	52.91853	65.43606	70.33665	86.60296	10.11171	6.668034	7.91154	0.05381304	15.88818	46.79559	63.42476	0.850282	19.21924
A	NOX_IDLEX	0	0	0	0	0.089558	0.126598	0.549152	5.39436047	0.388124	0	0	3.985194	0
A	NOX_RUNEX	0.037658	0.103391	0.082648	0.10526	1.623569	1.651449	1.597826	2.83553587	1.389557	0.409501	1.176489	6.431358	1.689764
A	NOX_STREX	0.193035	0.296034	0.31503	0.403462	0.295892	0.178706	1.81552	2.470147085	1.07951	0.522345	0.27563	0.616461	0.255862
A	PM10_IDLEX	0	0	0	0	0.001066	0.001537	0.000597	0.003298228	0.000127	0	0	0.003851	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.06043765	0.13034	0.114146	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.010112	0.010959	0.012	0.035230104	0.012	0.015184	0.004	0.011641	0.013097
A	PM10_RUNEX	0.001434	0.001876	0.001409	0.001537	0.018866	0.023001	0.007747	0.024170154	0.007008	0.002266	0.00196	0.037854	0.033594
A	PM10_STREX	0.001826	0.002605	0.001844	0.001976	0.000271	0.000123	0.000116	1.30973E-07	0.000141	0.000182	0.003336	8.58E-06	0.000257
A	PM25_IDLEX	0	0	0	0	0.00102	0.00147	0.000571	0.003155548	0.000122	0	0	0.003684	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.02590185	0.05586	0.04892	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002528	0.00274	0.003	0.008807526	0.003	0.003796	0.001	0.00291	0.003274
A	PM25_RUNEX	0.001322	0.001727	0.001297	0.00142	0.018002	0.021984	0.007406	0.023124549	0.006691	0.002151	0.001836	0.036213	0.032097
A	PM25_STREX	0.001679	0.002395	0.001695	0.001817	0.000249	0.000113	0.000107	1.20425E-07	0.000129	0.000168	0.003148	7.89E-06	0.000236
A	ROG_DIURN	0.041972	0.114946	0.071396	0.083977	0.002273	0.001077	0.000477	1.55634E-06	0.001053	0.003945	1.794553	7.57E-05	0.708135
A	ROG_HTSK	0.105736	0.237338	0.151541	0.18057	0.093812	0.047039	0.023505	7.49867E-05	0.017826	0.061759	0.822151	0.000652	0.065513
A	ROG_IDLEX	0	0	0	0	0.01985	0.015205	0.017209	0.408228583	0.047703	0	0	0.072789	0
A	ROG_RESTL	0.032303	0.080226	0.05786	0.071257	0.001023	0.000508	0.000214	9.34956E-07	0.000445	0.00235	0.874527	3.25E-05	0.242568
A	ROG_RUNEX	0.008403	0.023533	0.015379	0.019947	0.143308	0.143835	0.021936	0.027650991	0.030406	0.024132	2.290061	0.104587	0.082147
A	ROG_RUNLS	0.223978	0.868357	0.532416	0.580928	0.75369	0.321511	0.144091	0.000398382	0.19111	0.413319	2.377042	0.00482	1.458666
A	ROG_STREX	0.242962	0.430429	0.368237	0.48532	0.080259	0.046124	0.049717	1.29184E-06	0.092546	0.290044	2.086738	0.00531	0.10187
A	SO2_IDLEX	0	0	0	0	9.19E-05	0.000143	0.000847	0.009511614	0.000915	0	0	0.003192	0
A	SO2_RUNEX	0.000106	0.002677	0.010447	0.003905	0.007578	0.007414	0.010447	0.013413078	0.013501	0.012477	0.002077	0.010746	0.01549
A	SO2_STREX	0	0	7.83E-05	0.000857	0.0001	6.6E-05	7.83E-05	5.32524E-07	0.000157	0.000463	0.000628	8.41E-06	0.00019
A	TOG_DIURN	0.041972	0.114946	0.071396	0.083977	0.002273	0.001077	0.000477	1.55634E-06	0.001053	0.003945	1.794553	7.57E-05	0.708135
A	TOG_HTSK	0.105736	0.237338	0.151541	0.18057	0.093812	0.047039	0.023505	7.49867E-05	0.017826	0.061759	0.822151	0.000652	0.065513
A	TOG_IDLEX	0	0	0	0	0.027628	0.020245	0.022696	0.468854228	0.061453	0	0	0.098425	0
A	TOG_RESTL	0.032303	0.080226	0.05786	0.071257	0.001023	0.000508	0.000214	9.34956E-07	0.000445	0.00235	0.874527	3.25E-05	0.242568
A	TOG_RUNEX	0.012195	0.034318	0.0224	0.028953	0.176139	0.168279	0.028503	0.07740649	0.041789	1.095725	2.807117	0.119412	0.108274
A	TOG_RUNLS	0.223978	0.868357	0.532416	0.580928	0.75369	0.321511	0.144091	0.000398382	0.19111	0.413319	2.377042	0.00482	1.458666
A	TOG_STREX	0.266012	0.471264	0.403172	0.53136	0.087873	0.0505	0.054433	1.4144E-06	0.101327	0.317562	2.269912	0.005814	0.111535

CalEEMod EMFAC2017 Fleet Mix Input

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.530589	0.049522	0.159707	0.113711	0.028026	0.006987	0.017442	0.028575	0.002772	0.001522	0.058629	0.00158	0.000939

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

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STF	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDLI	PM10_STR	PM10_PM	PM10_PMI	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNI	N2O_IDLE	N2O_STRE	ROG_RUNI	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_REST	ROG_DIUR	TOG_RUNI	TOG_IDLE	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_REST	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Napa	2023	HHDT	Aggregate	Aggregate	Gasoline	0.637411	78.04077	12.75332	3.259388	0	0.004796	0.000528	0	0.000102	0.005	0.02646	0.000574	0	0.000111	0.02	0.06174	2090.598	0	45.58933	0.076704	0	0.00021	0.138767	0	0.000233	0.343847	0	0.001094	0.063527	0.337501	0.015848	0.02638	0.501741	0	0.001198	0.063527	0.337501	0.015848	0.02638	30.85494	0	3.756899	0.020688	0	0.000451
Napa	2023	HHDT	Aggregate	Aggregate	Diesel	1079.072	117467.6	10669.54	2.828087	53.2852	2.501353	0.023274	0.029423	0	0.008808	0.025895	0.024326	0.030754	0	0.035232	0.060423	1434.65	10080.58	0	0.001126	0.189735	0	0.225507	1.584527	0	0.024246	4.084946	0	0	0	0	0	0.027602	4.6504	0	0	0	0	0	0	0.234777	59.25383	0	0.013554	0.095236	0
Napa	2023	HHDT	Aggregate	Aggregate	Natural Ga	31.29757	1275.253	122.0605	3.495782	25.05046	0	0.010782	0.074885	0	0.009	0.02646	0.011269	0.078271	0	0.036	0.06174	3093.976	3941.098	0	4.253981	1.415108	0	0.630727	0.803419	0	0.321977	0.086137	0	0	0	0	0	4.639102	1.519327	0	0	0	0	0	0	10.09994	22.45192	0	0	0	0
Napa	2023	LDA	Aggregate	Aggregate	Gasoline	52428.91	2128641	245226.2	0.037892	0	0.199932	0.00126	0	0.001741	0.002	0.01575	0.001371	0	0.001893	0.008	0.03675	250.2986	0	54.84773	0.002221	0	0.055891	0.004423	0	0.027145	0.008504	0	0.251643	0.109411	0.232004	0.156436	0.203017	0.012404	0	0.275517	0.109411	0.232004	0.156436	0.203017	0.614411	0	2.402249	0.002477	0	0.000543
Napa	2023	LDA	Aggregate	Aggregate	Diesel	692.4286	27557.39	3192.934	0.086009	0	0	0.008165	0	0	0.002	0.01575	0.008534	0	0	0.008	0.03675	201.0156	0	0	0.000717	0	0	0.031597	0	0	0.015439	0	0	0	0	0	0	0.017576	0	0	0	0	0	0	0.219571	0	0	0.0019	0	0
Napa	2023	LDA	Aggregate	Aggregate	Electricity	1161.734	50137.51	5747.004	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0	0
Napa	2023	LDT1	Aggregate	Aggregate	Gasoline	5844.302	204101.6	26298.22	0.103983	0	0.298186	0.001703	0	0.002414	0.002	0.01575	0.001852	0	0.002626	0.008	0.03675	300.0037	0	65.95809	0.005394	0	0.084511	0.008085	0	0.031476	0.023685	0	0.433559	0.239051	0.87476	0.363644	0.520946	0.034554	0	0.474692	0.239051	0.87476	0.363644	0.520946	1.161672	0	2.64787	0.002969	0	0.000653
Napa	2023	LDT1	Aggregate	Aggregate	Diesel	3.996418	61.49734	13.10545	0.858754	0	0	0.111795	0	0	0.002	0.01575	0.11685	0	0	0.008	0.03675	419.5925	0	0	0.006345	0	0	0.065954	0	0	0.136608	0	0	0	0	0	0	0.155519	0	0	0	0	0	0	0.862056	0	0	0.003967	0	0
Napa	2023	LDT1	Aggregate	Aggregate	Electricity	39.45512	1762.863	196.6963	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0	0
Napa	2023	LDT2	Aggregate	Aggregate	Gasoline	17888.43	652557.8	82181.62	0.083614	0	0.320737	0.001274	0	0.001727	0.002	0.01575	0.001385	0	0.001878	0.008	0.03675	323.136	0	71.66083	0.003779	0	0.078615	0.006843	0	0.034683	0.015519	0	0.374907	0.154248	0.542114	0.270626	0.333826	0.022642	0	0.410475	0.154248	0.542114	0.270626	0.333826	0.884364	0	3.053643	0.003198	0	0.000709
Napa	2023	LDT2	Aggregate	Aggregate	Diesel	135.9381	5583.022	654.6094	0.051168	0	0	0.004939	0	0	0.002	0.01575	0.005163	0	0	0.008	0.03675	276.8256	0	0	0.000659	0	0	0.043513	0	0	0.014187	0	0	0	0	0	0	0.016151	0	0	0	0	0	0	0.137383	0	0	0.002617	0	0
Napa	2023	LDT2	Aggregate	Aggregate	Electricity	177.7396	5964.26	892.5686	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0	0
Napa	2023	LHDT1	Aggregate	Aggregate	Gasoline	1673.173	55004.7	24927.79	0.350317	0.039107	0.566339	0.002535	0	0.000476	0.002	0.03276	0.002758	0	0.000518	0.008	0.07644	1015.997	122.0677	19.35383	0.016902	0.119442	0.029484	0.019668	0.002975	0.041688	0.085818	0.447217	0.153615	0.179556	1.442565	0.029177	0.064804	0.125225	0.652577	0.168189	0.179556	1.442565	0.029177	0.064804	1.619872	3.731948	1.991173	0.010054	0.001208	0.000192
Napa	2023	LHDT1	Aggregate	Aggregate	Diesel	1811.315	61534.82	22784.07	2.761702	2.322917	0	0.031827	0.026873	0	0.003	0.03276	0.033266	0.028088	0	0.012	0.07644	567.5726	137.9606	0	0.009043	0.005098	0	0.089215	0.021685	0	0.194697	0.10976	0	0	0	0	0	0.221649	0.124954	0	0	0	0	0	0	0.909095	0.909745	0	0.005366	0.001304	0
Napa	2023	LHDT2	Aggregate	Aggregate	Gasoline	227.9864	7559.706	3396.658	0.30971	0.03888	0.583846	0.002142	0	0.00037	0.002	0.03822	0.002329	0	0.000402	0.008	0.08918	1159.13	140.4277	21.78492	0.011433	0.120308	0.029347	0.018568	0.002944	0.042579	0.054311	0.445362	0.150692	0.15368	1.050399	0.024736	0.052438	0.079251	0.649871	0.164988	0.15368	1.050399	0.024736	0.052438	1.034573	3.750279	1.872784	0.011471	0.00139	0.000216
Napa	2023	LHDT2	Aggregate	Aggregate	Diesel	612.1799	21493.99	7700.453	2.123356	2.280396	0	0.028963	0.026653	0	0.003	0.03822	0.030272	0.027859	0	0.012	0.08918	633.2766	220.0206	0	0.008143	0.005098	0	0.099542	0.034584	0	0.175321	0.10976	0	0	0	0	0	0.199592	0.124954	0	0	0	0	0	0	0.828745	0.909745	0	0.005987	0.00208	0
Napa	2023	MCY	Aggregate	Aggregate	Gasoline	2760.868	21835.65	5521.736	1.176489	0	0.27563	0.001836	0	0.003148	0.001	0.00504	0.00196	0	0.003336	0.004	0.01176	209.8527	0	63.42476	0.334745	0	0.272373	0.067368	0	0.015516	2.290061	0	2.086738	0.822151	2.377042	0.874527	1.794553	2.807117	0	2.269912	0.822151	2.377042	0.874527	1.794553	20.46414	0	9.272192	0.002077	0	0.000628
Napa	2023	MDV	Aggregate	Aggregate	Gasoline	13629.96	455237.6	61335	0.107736	0	0.417771	0.00131	0	0.001883	0.002	0.01575	0.001425	0	0.002048	0.008	0.03675	398.7108	0	89.73703	0.004801	0	0.098689	0.008434	0	0.039125	0.020338	0	0.502532	0.186955	0.60159	0.332041	0.391236	0.029635	0	0.550204	0.186955	0.60159	0.332041	0.391236	1.01919	0	3.704939	0.003946	0	0.000888
Napa	2023	MDV	Aggregate	Aggregate	Diesel	369.6549	14402.66	1752.78	0.047966	0	0	0.005055	0	0	0.002	0.01575	0.005283	0	0	0.008	0.03675	368.5537	0	0	0.000537	0	0	0.057932	0	0	0.011569	0	0	0	0	0	0	0.01317	0	0	0	0	0	0	0.207418	0	0	0.003484	0	0
Napa	2023	MDV	Aggregate	Aggregate	Electricity	91.90616	3200.055	466.8716	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0	0
Napa	2023	MH	Aggregate	Aggregate	Gasoline	326.7371	2893.123	32.68678	0.447712	0	0.349205	0.001513	0	0.000323	0.003	0.05586	0.001646	0	0.000351	0.012	0.13034	1784.016	0	26.23078	0.014772	0	0.033107	0.027291	0	0.035912	0.063384	0	0.139035	0.089413	1.990815	0.033119	0.096686	0.092489	0	0.152226	0.089413	1.990815	0.033119	0.096686	1.541415	0	3.031733	0.017654	0	0.00026
Napa	2023	MH	Aggregate	Aggregate	Diesel	119.2476	1070.444	11.92476	4.977086	0	0	0.113041	0	0	0.004	0.05586	0.118152	0	0	0.016	0.13034	1032.654	0	0	0.006122	0	0	0.162319	0	0	0.131806	0	0	0	0	0	0	0.150053	0	0	0	0	0	0	0.481354	0	0	0.009762	0	0
Napa	2023	MHDT	Aggregate	Aggregate	Gasoline	133.5591	7182.454	2672.251	0.702435	0.087849	0.40537	0.00143	0	0.000553	0.003	0.05586	0.001555	0	0.000601	0.012	0.13034	1728.334	537.8543	40.98514	0.022108	0.253169	0.045236	0.032074	0.006895	0.028472	0.111142	1.003175	0.257553	0.121766	0.746453	0.022207	0.04946	0.162178	1.463831	0.281988	0.121766	0.746453	0.022207	0.04946	2.602497	15.00592	5.842518	0.017103	0.005323	0.000406
Napa	2023	MHDT	Aggregate	Aggregate	Diesel	1174.078	65345.62	11171.14	1.696243	6.464987	2.152842	0.008063	0.006732	0	0.003	0.05586	0.008427	0.007036	0	0.012	0.13034	1028.305	992.6283	0	0.000563	0.004124	0	0.161635	0.156027	0	0.012131	0.088796	0	0	0	0	0	0.01381	0.101087	0	0	0	0	0	0	0.116967	2.978404	0	0.009715	0.009378	0
Napa	2023	OBUS	Aggregate	Aggregate	Gasoline	73.14075	4129.646	1463.4	0.43583	0.065082	0.317034	0.000951	0	0.000217	0.003	0.05586	0.001034	0	0.000236	0.012	0.13034	1793.387	381.2575	26.61369	0.013184	0.204241	0.030637	0.022564	0.00585	0.026448	0.062432	0.746629	0.155021	0.02986	0.320121	0.014904	0.035303	0.091101	1.08948	0.169728	0.02986	0.320121	0.014904	0.035303	1.363722	5.776689	3.286237	0.017747	0.003773	0.000263
Napa	2023	OBUS	Aggregate	Aggregate	Diesel	106.9331	7398.974	987.8853	1.921868	8.852662	2.209001	0.009895	0.002789	0	0.003	0.05586	0.010343	0.002915	0	0.012	0.13034	1178.198	1947.767	0	0.000582	0.027071	0	0.185196	0.306162	0	0.012531	0.582842	0	0	0	0	0	0.014266	0.663521	0	0	0	0	0	0	0.143085	9.788099	0	0.011131	0.018402	0
Napa	2023	SBUS	Aggregate	Aggregate	Gasoline	10.26951	589.3261	41.07804	0.132739	0.92653	0.593167	0.000975	0	0.000433	0.002	0.3192	0.00106	0	0.000471	0.008	0.7448	848.2461	2540.009	46.63379	0.002894	2.547435	0.054258	0.013328	0.094702	0.059557	0.012093	10.64152	0.291221	0.035775	0.264328	0.00712	0.0166	0.017646	15.52808	0.318851	0.035775	0.264328	0.00712	0.0166	0.194554	82.24088	7.807378	0.008394	0.025135	0.000461
Napa	2023	SBUS	Aggregate	Aggregate	Diesel	191.6704	5980.557	2211.85	7.052026	46.79304	0.616894	0.039685	0.043304	0	0.003	0.3192	0.041479	0.045262	0	0.012	0.7448	1161.964	3828.614	0	0.005281	0.013257	0	0.182645	0.601805	0	0.113701	0.285418	0	0	0	0	0	0.12944	0.324926	0	0	0	0	0	0	0.302081	5.208265	0	0.010978	0.036171	0
Napa	2023	UBUS	Aggregate	Aggregate	Gasoline	41.06321	3039.644	164.2528	0.3398	0	0.830394	0.000886	0	0.000267	0.002719	0.050909	0.000963	0	0.00029	0.010877	0.118787	2000.765	0	74.39298	0.005617	0	0.106608	0.026581	0	0.069624	0.018681	0	0.461096	0.098181	0.657071	0.014942	0.025086	0.027259	0	0.504842	0.098181	0.657071	0.014942	0.025086	0.390309	0	6.531025	0.019799	0	0.000736
Napa	2023	UBUS	Aggregate	Aggregate	Diesel	10.56437	1294.245	42.25749	0.733	0	0	0.005223	0	0	0.007194	0.035309	0.005459	0	0	0.028776	0.082388	1533.143	0	0	0.068557	0	0	0.240989	0	0	0.00098	0	0	0	0	0	0	0.069967	0	0	0	0	0	0	0.114959	0	0	0.014494	0	0
Napa	2023	UBUS	Aggregate	Aggregate	Natural Ga	13.65239	1993.142	54.60957	0.305734	0	0	0.002086	0	0	0.003232	0.054725	0.00218	0	0	0.012926	0.127692	1374.499	0	0	3.322904	0	0	0.280201	0	0	0.047478	0	0	0	0	0	0	3.391268	0	0	0	0	0	0	23.33098	0	0	0	0	0

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

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

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

Enter NA in the date field if adjustments do not apply

2030 CalEEMod EMFAC2017 Emission Factors Input

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.003897	0.00236	0.002869	0.022901889	0.006591	0	0	0.021047	0
A	CH4_RUNEX	0.001036	0.001958	0.001848	0.00215	0.007971	0.00649	0.001235	0.043498939	0.002427	0.65594	0.323279	0.004401	0.006252
A	CH4_STREX	0.032386	0.045042	0.048655	0.055991	0.01087	0.005691	0.006619	2.15198E-07	0.01444	0.0498	0.262421	0.001709	0.020691
A	CO_IDLEX	0	0	0	0	0.165004	0.124243	0.428045	5.999502048	0.724689	0	0	1.202224	0
A	CO_RUNEX	0.42433	0.591588	0.579383	0.611299	0.785987	0.644066	0.183647	0.383010732	0.3027	4.837501	18.54919	0.275206	0.436684
A	CO_STREX	1.834163	2.021286	2.452068	2.635364	0.919387	0.448074	0.729272	0.003885706	1.509563	4.073086	9.47032	0.237642	1.720586
A	CO2_NBIO_IDLEX	0	0	0	0	8.891412	14.11572	87.81461	896.3281405	114.759	0	0	326.6042	0
A	CO2_NBIO_RUNEX	200.3065	245.7028	253.2481	311.8021	709.9299	698.4506	1018.685	1240.273223	1213.837	1428.209	209.0835	1053.023	1403.685
A	CO2_NBIO_STREX	43.20798	53.78509	55.76639	68.30046	9.375232	5.800976	6.360478	0.036213582	12.453	38.06275	61.34437	1.375509	16.16015
A	NOX_IDLEX	0	0	0	0	0.072731	0.103859	0.483995	5.084144686	0.521605	0	0	3.259659	0
A	NOX_RUNEX	0.021119	0.039867	0.038614	0.046238	0.834553	0.90412	1.601739	2.584202217	1.549483	0.373397	1.158067	4.522491	1.384938
A	NOX_STREX	0.135607	0.182738	0.195042	0.231313	0.237484	0.135766	1.863402	2.497838756	1.280974	0.38351	0.274575	0.950581	0.258889
A	PM10_IDLEX	0	0	0	0	0.001048	0.001601	0.000242	0.002342809	0.000173	0	0	0.002362	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060684334	0.13034	0.114146	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.010092	0.010967	0.012	0.035375792	0.012	0.015184	0.004	0.01143	0.013231
A	PM10_RUNEX	0.000943	0.001119	0.001051	0.001085	0.012672	0.019198	0.007955	0.023178891	0.008442	0.003204	0.002092	0.029748	0.02603
A	PM10_STREX	0.001328	0.001631	0.001415	0.001452	0.000232	9.45E-05	8.24E-05	2.61847E-07	0.000123	0.000484	0.002894	1.82E-05	0.000196
A	PM25_IDLEX	0	0	0	0	0.001002	0.001532	0.000232	0.00224146	0.000165	0	0	0.00226	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026007572	0.05586	0.04892	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002523	0.002742	0.003	0.008843948	0.003	0.003796	0.001	0.002858	0.003308
A	PM25_RUNEX	0.000868	0.001029	0.000968	0.001001	0.012079	0.018347	0.007604	0.022176162	0.008065	0.003023	0.001952	0.028454	0.024869
A	PM25_STREX	0.001221	0.0015	0.001301	0.001335	0.000213	8.69E-05	7.58E-05	2.40759E-07	0.000113	0.000445	0.002713	1.67E-05	0.00018
A	ROG_DIURN	0.026966	0.064891	0.056645	0.072806	0.001886	0.00072	0.000263	1.0772E-06	0.001088	0.001364	1.749624	0.000187	0.440806
A	ROG_HTSK	0.071392	0.137632	0.11191	0.13996	0.085668	0.032507	0.0144	5.16013E-05	0.018779	0.015838	0.732892	0.001718	0.040737
A	ROG_IDLEX	0	0	0	0	0.017468	0.013506	0.016652	0.404402636	0.0536	0	0	0.107466	0
A	ROG_RESTL	0.021692	0.049099	0.048128	0.0637	0.000893	0.000384	0.000137	6.44183E-07	0.000481	0.00071	0.820802	8.32E-05	0.170696
A	ROG_RUNEX	0.00358	0.007855	0.007102	0.008695	0.103506	0.119233	0.013769	0.024746442	0.018637	0.017881	2.166681	0.088006	0.05088
A	ROG_RUNLS	0.182628	0.516163	0.418475	0.47362	0.837068	0.202428	0.080151	0.00027113	0.219361	0.079344	1.716841	0.012177	0.730093
A	ROG_STREX	0.134351	0.210154	0.218806	0.267843	0.055737	0.027988	0.033721	1.12239E-06	0.073829	0.209185	1.998266	0.009218	0.080492
A	SO2_IDLEX	0	0	0	0	8.58E-05	0.000135	0.000832	0.008358224	0.001088	0	0	0.003094	0
A	SO2_RUNEX	9.85E-05	0.002773	0.009705	0.003081	0.006906	0.006723	0.009705	0.011397012	0.011655	0.011623	0.002069	0.009998	0.013761
A	SO2_STREX	0	0	6.29E-05	0.000676	9.28E-05	5.74E-05	6.29E-05	3.58363E-07	0.000123	0.000377	0.000607	1.36E-05	0.00016
A	TOG_DIURN	0.026966	0.064891	0.056645	0.072806	0.001886	0.00072	0.000263	1.0772E-06	0.001088	0.001364	1.749624	0.000187	0.440806
A	TOG_HTSK	0.071392	0.137632	0.11191	0.13996	0.085668	0.032507	0.0144	5.16013E-05	0.018779	0.015838	0.732892	0.001718	0.040737
A	TOG_IDLEX	0	0	0	0	0.024138	0.017713	0.021954	0.464524457	0.066934	0	0	0.1492	0
A	TOG_RESTL	0.021692	0.049099	0.048128	0.0637	0.000893	0.000384	0.000137	6.44183E-07	0.000481	0.00071	0.820802	8.32E-05	0.170696
A	TOG_RUNEX	0.005198	0.011462	0.010323	0.012605	0.124008	0.137302	0.016754	0.07081236	0.024108	0.679229	2.698797	0.100713	0.063203
A	TOG_RUNLS	0.182628	0.516163	0.418475	0.47362	0.837068	0.202428	0.080151	0.00027113	0.219361	0.079344	1.716841	0.012177	0.730093
A	TOG_STREX	0.147098	0.230092	0.239565	0.293255	0.061026	0.030644	0.03692	1.22888E-06	0.080833	0.229031	2.175215	0.010093	0.088129

2030 CalEEMod EMFAC2017 Fleet Mix Input

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.567874	0.047848	0.149337	0.098421	0.022021	0.005857	0.015223	0.03107	0.002404	0.001465	0.056263	0.001473	0.000744

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

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLE	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STF	PM2.5_PM	PM2.5_PM	PM10_RUI	PM10_IDLI	PM10_STR	PM10_PM	PM10_PMI	CO2_RUNE	CO2_IDLE	CO2_STRE	CH4_RUNE	CH4_IDLE	CH4_STRE	N2O_RUNI	N2O_IDLE	N2O_STRE	ROG_RUNI	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_REST	ROG_DIUR	TOG_RUNI	TOG_IDLE	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_REST	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Napa	2030	HHDT	Aggregate	Aggregate	Gasoline	0.532641	72.85922	10.65708	2.978377	0	0.005713	0.000965	0	0.000275	0.005	0.02646	0.001049	0	0.000299	0.02	0.06174	1741.537	0	41.38908	0.069428	0	0.000246	0.130517	0	0.000278	0.305915	0	0.001283	0.058976	0.309878	0.014731	0.024633	0.446391	0	0.001405	0.058976	0.309878	0.014731	0.024633	28.97589	0	4.441035	0.017234	0	0.00041
Napa	2030	HHDT	Aggregate	Aggregate	Diesel	1208.962	132924.4	12013.42	2.597062	50.54322	2.5325	0.02239	0.021517	0	0.008844	0.026002	0.023402	0.02249	0	0.035377	0.060671	1220.817	8913.264	0	0.001071	0.189175	0	0.191896	1.401041	0	0.023067	4.072885	0	0	0	0	0	0.02626	4.63667	0	0	0	0	0	0	0.239572	59.70721	0	0.011534	0.084208	0
Napa	2030	HHDT	Aggregate	Aggregate	Natural Ga	40.01864	1631.265	156.0727	1.518711	20.51007	0	0.005708	0.032193	0	0.009	0.02646	0.005966	0.033648	0	0.036	0.06174	2803.248	3538.605	0	3.49957	1.25549	0	0.57146	0.721368	0	0.149013	0.042975	0	0	0	0	0	3.684379	1.309846	0	0	0	0	0	0	10.79414	22.26627	0	0	0	0
Napa	2030	LDA	Aggregate	Aggregate	Gasoline	60116.24	2319266	280646.2	0.022022	0	0.14291	0.00088	0	0.001293	0.002	0.01575	0.000957	0	0.001406	0.008	0.03675	210.3729	0	45.74915	0.001095	0	0.034291	0.003277	0	0.021847	0.0037	0	0.141728	0.074981	0.192388	0.106541	0.131947	0.005399	0	0.155175	0.074981	0.192388	0.106541	0.131947	0.44128	0	1.912205	0.002082	0	0.000453
Napa	2030	LDA	Aggregate	Aggregate	Diesel	761.75	29389.99	3563.311	0.022115	0	0	0.002223	0	0	0.002	0.01575	0.002323	0	0	0.008	0.03675	169.3735	0	0	0.00031	0	0	0.026623	0	0	0.006667	0	0	0	0	0	0	0.00759	0	0	0	0	0	0	0.158303	0	0	0.001601	0	0
Napa	2030	LDA	Aggregate	Aggregate	Electricity	2663.818	112016	12942.21	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0	0
Napa	2030	LDT1	Aggregate	Aggregate	Gasoline	5889.868	201952.5	26738.55	0.040721	0	0.186007	0.001041	0	0.001534	0.002	0.01575	0.001132	0	0.001668	0.008	0.03675	252.194	0	55.00448	0.00201	0	0.046063	0.004369	0	0.024333	0.008032	0	0.214126	0.139928	0.525187	0.226732	0.299424	0.011721	0	0.234441	0.139928	0.525187	0.226732	0.299424	0.597983	0	2.03536	0.002496	0	0.000544
Napa	2030	LDT1	Aggregate	Aggregate	Diesel	0.929375	29.4228	4.082302	0.107868	0	0	0.006243	0	0	0.002	0.01575	0.006525	0	0	0.008	0.03675	347.4899	0	0	0.00076	0	0	0.054621	0	0	0.016369	0	0	0	0	0	0	0.018635	0	0	0	0	0	0	0.181597	0	0	0.003285	0	0
Napa	2030	LDT1	Aggregate	Aggregate	Electricity	122.4589	5347.573	602.1237	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0	0
Napa	2030	LDT2	Aggregate	Aggregate	Gasoline	17909.56	626650.4	82098.56	0.039366	0	0.201513	0.000944	0	0.001351	0.002	0.01575	0.001027	0	0.001469	0.008	0.03675	259.1883	0	57.88745	0.001902	0	0.050506	0.00417	0	0.025767	0.007177	0	0.226291	0.115438	0.432187	0.22777	0.267771	0.010472	0	0.24776	0.115438	0.432187	0.22777	0.267771	0.587738	0	2.506234	0.002565	0	0.000573
Napa	2030	LDT2	Aggregate	Aggregate	Diesel	167.8916	6249.472	791.018	0.032252	0	0	0.004101	0	0	0.002	0.01575	0.004286	0	0	0.008	0.03675	232.9374	0	0	0.000606	0	0	0.036615	0	0	0.013054	0	0	0	0	0	0	0.014861	0	0	0	0	0	0	0.136373	0	0	0.002202	0	0
Napa	2030	LDT2	Aggregate	Aggregate	Electricity	476.2106	14197.39	2331.581	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0	0
Napa	2030	LHDT1	Aggregate	Aggregate	Gasoline	1380.529	45512.91	20567.83	0.187766	0.03337	0.459421	0.002328	0	0.000412	0.002	0.03276	0.002531	0	0.000448	0.008	0.07644	924.1398	114.2097	18.13671	0.008505	0.106667	0.021028	0.011228	0.002817	0.036522	0.040348	0.38198	0.107826	0.165727	1.619337	0.025728	0.054362	0.058876	0.557385	0.118056	0.165727	1.619337	0.025728	0.054362	0.805108	3.748726	1.778585	0.009145	0.00113	0.000179
Napa	2030	LHDT1	Aggregate	Aggregate	Diesel	1528.081	49908.65	19221.34	1.424372	1.863664	0	0.020971	0.026101	0	0.003	0.03276	0.02192	0.027281	0	0.012	0.07644	514.5868	128.3387	0	0.007483	0.005098	0	0.080886	0.020173	0	0.161101	0.10976	0	0	0	0	0	0.183403	0.124954	0	0	0	0	0	0	0.76855	0.909745	0	0.004865	0.001213	0
Napa	2030	LHDT2	Aggregate	Aggregate	Gasoline	195.4918	6554.766	2912.537	0.140281	0.032949	0.472869	0.001947	0	0.000303	0.002	0.03822	0.002117	0	0.000329	0.008	0.08918	1051.792	130.6878	20.20462	0.00456	0.107463	0.019821	0.009717	0.002804	0.037517	0.018865	0.378061	0.097483	0.11322	0.70505	0.019948	0.037379	0.027528	0.551666	0.106731	0.11322	0.70505	0.019948	0.037379	0.366575	3.771645	1.560626	0.010408	0.001293	0.0002
Napa	2030	LHDT2	Aggregate	Aggregate	Diesel	574.9175	18822.94	7231.739	1.170114	1.821368	0	0.024058	0.027035	0	0.003	0.03822	0.025146	0.028258	0	0.012	0.08918	575.4056	204.63	0	0.007162	0.005098	0	0.090446	0.032165	0	0.154185	0.10976	0	0	0	0	0	0.175529	0.124954	0	0	0	0	0	0	0.740697	0.909745	0	0.00544	0.001934	0
Napa	2030	MCY	Aggregate	Aggregate	Gasoline	2784.542	21035.82	5569.084	1.158067	0	0.274575	0.001952	0	0.002713	0.001	0.00504	0.002092	0	0.002894	0.004	0.01176	209.0835	0	61.34437	0.323279	0	0.262421	0.066579	0	0.015518	2.166681	0	1.998266	0.732892	1.716841	0.820802	1.749624	2.698797	0	2.175215	0.732892	1.716841	0.820802	1.749624	18.54919	0	9.47032	0.002069	0	0.000607
Napa	2030	MDV	Aggregate	Aggregate	Gasoline	12361.31	402393.2	55654.79	0.048002	0	0.2446	0.000954	0	0.001418	0.002	0.01575	0.001037	0	0.001542	0.008	0.03675	319.4136	0	72.56326	0.002266	0	0.059485	0.004719	0	0.027914	0.00891	0	0.283511	0.147803	0.500627	0.303075	0.3461	0.013002	0	0.310409	0.147803	0.500627	0.303075	0.3461	0.631527	0	2.756837	0.003161	0	0.000718
Napa	2030	MDV	Aggregate	Aggregate	Diesel	410.4341	14389.2	1906.148	0.021634	0	0	0.002598	0	0	0.002	0.01575	0.002715	0	0	0.008	0.03675	308.9344	0	0	0.000353	0	0	0.04856	0	0	0.00759	0	0	0	0	0	0	0.008641	0	0	0	0	0	0	0.179012	0	0	0.002921	0	0
Napa	2030	MDV	Aggregate	Aggregate	Electricity	317.657	9690.644	1567.404	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0.004888	0	0.003086	0.01506	0	0	0	0	0	0
Napa	2030	MH	Aggregate	Aggregate	Gasoline	242.8819	2231.208	24.2979	0.226531	0	0.38272	0.001255	0	0.000266	0.003	0.05586	0.001365	0	0.000289	0.012	0.13034	1603.914	0	23.88985	0.006722	0	0.030588	0.017814	0	0.042016	0.023776	0	0.118993	0.060223	1.07931	0.025244	0.065191	0.034694	0	0.130282	0.060223	1.07931	0.025244	0.065191	0.458132	0	2.543573	0.015872	0	0.000236
Napa	2030	MH	Aggregate	Aggregate	Diesel	116.2212	991.7411	11.62212	3.991108	0	0	0.077995	0	0	0.004	0.05586	0.081522	0	0	0.016	0.13034	953.2112	0	0	0.005196	0	0	0.149832	0	0	0.111858	0	0	0	0	0	0	0.127343	0	0	0	0	0	0	0.388431	0	0	0.009011	0	0
Napa	2030	MHDT	Aggregate	Aggregate	Gasoline	131.6978	7790.025	2635.009	0.208984	0.089088	0.353743	0.001289	0	0.000414	0.003	0.05586	0.001402	0	0.00045	0.012	0.13034	1528.774	488.2078	34.76577	0.006364	0.276588	0.036181	0.013406	0.008253	0.030693	0.028482	1.02167	0.184313	0.078708	0.438097	0.014973	0.028723	0.041561	1.490819	0.2018	0.078708	0.438097	0.014973	0.028723	0.616683	15.22048	3.98613	0.015128	0.004831	0.000344
Napa	2030	MHDT	Aggregate	Aggregate	Diesel	1281.704	58174.94	11767.7	1.788239	5.429568	2.201444	0.00845	0.002604	0	0.003	0.05586	0.008832	0.002721	0	0.012	0.13034	950.3803	936.6221	0	0.000548	0.003816	0	0.149387	0.147224	0	0.011799	0.082147	0	0	0	0	0	0.013433	0.093518	0	0	0	0	0	0	0.12566	3.246077	0	0.008979	0.008849	0
Napa	2030	OBUS	Aggregate	Aggregate	Gasoline	57.72767	2652.057	1155.015	0.270373	0.065151	0.321112	0.001091	0	0.000229	0.003	0.05586	0.001186	0	0.000249	0.012	0.13034	1643.062	363.619	25.23615	0.007776	0.201022	0.029264	0.015845	0.005746	0.026481	0.035407	0.747678	0.149615	0.038056	0.444538	0.019484	0.044101	0.051665	1.09101	0.16381	0.038056	0.444538	0.019484	0.044101	0.758755	5.78298	3.059146	0.016259	0.003598	0.00025
Napa	2030	OBUS	Aggregate	Aggregate	Diesel	126.9234	7764.128	1185.636	1.986399	9.589526	2.216047	0.010447	0.003048	0	0.003	0.05586	0.01092	0.003186	0	0.012	0.13034	1067.223	1950.94	0	0.0006	0.030116	0	0.167753	0.306661	0	0.012908	0.648393	0	0	0	0	0	0.014695	0.738147	0	0	0	0	0	0	0.146921	10.73408	0	0.010083	0.018432	0
Napa	2030	SBUS	Aggregate	Aggregate	Gasoline	16.50529	908.9353	66.02117	0.131492	0.92653	0.584204	0.001182	0	0.000532	0.002	0.3192	0.001286	0	0.000578	0.008	0.7448	783.8553	2360.494	43.70516	0.002737	2.534817	0.054296	0.01303	0.096287	0.057823	0.011491	10.64152	0.292891	0.05458	0.386896	0.01057	0.02371	0.016768	15.52808	0.320678	0.05458	0.386896	0.01057	0.02371	0.197075	82.24088	7.550784	0.007757	0.023359	0.000432
Napa	2030	SBUS	Aggregate	Aggregate	Diesel	176.0613	5474.132	2031.723	5.251581	38.75149	0.962486	0.032983	0.026931	0	0.003	0.3192	0.034474	0.028149	0	0.012	0.7448	1097.717	3670.15	0	0.004678	0.013137	0	0.172546	0.576897	0	0.10071	0.282826	0	0	0	0	0	0.114651	0.321976	0	0	0	0	0	0	0.288179	6.614447	0	0.010371	0.034674	0
Napa	2030	UBUS	Aggregate	Aggregate	Gasoline	41.1938	3049.311	164.7752	0.207234	0	0.609683	0.002168	0	0.000707	0.002719	0.050909	0.002358	0	0.000769	0.010877	0.118787	1572.014	0	60.51002	0.005462	0	0.079169	0.01886	0	0.058647	0.01779	0	0.33255	0.025178	0.126136	0.004512	0.008675	0.025959	0	0.3641	0.025178	0.126136	0.004512	0.008675	0.292598	0	6.475163	0.015556	0	0.000599
Napa	2030	UBUS	Aggregate	Aggregate	Diesel	17.30253	2348.791	69.21014	0.594384	0	0	0.00438	0	0	0.004792	0.047081	0.004578	0	0	0.019167	0.109856	1186.057	0	0	0.05124	0	0	0.186432	0	0	0.000732	0	0	0	0	0	0	0.052294	0	0	0	0	0	0	0.082799	0	0	0.011213	0	0
Napa	2030	UBUS	Aggregate	Aggregate	Natural Ga	6.991245	949.0502	27.96498	0.360363	0	0	0.002412	0	0	0.004792	0.047081	0.002521	0	0	0.019167	0.109856	1565.458	0	0	4.242503	0	0	0.319129	0	0	0.060617	0	0	0	0	0	0	4.329785	0	0	0	0	0	0	31.20768	0	0	0	0	0

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

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

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

Enter NA in the date field if adjustments do not apply

Attachment 4: Construction Community Risk Inputs and Risk Calculations

The Veranda at Indian Springs, Calistoga

DPM Emissions and Modeling Emission Rates - Unmitigated

Emissions Model 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 ($g/s/m^2$)
2021	Construction	0.1434	DPM	286.8	0.08731	1.10E-02	28,667	**3.84E-07**
2022	Construction	0.0148	DPM	29.5	0.00898	1.13E-03	28,667	**3.95E-08**
Total		***0.1582***		***316.3***	***0.0963***	***0.0121***		

Construction Hours

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

PM2.5 Fugitive Dust Emissions and Modeling Emission Rates - 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 $g/s/m^2$
2021	Construction	FUG	0.0863	172.5	0.05251	6.62E-03	28,667	**2.31E-07**
2022	Construction	FUG	0.0001	0.2	0.00006	7.86E-06	28,667	**2.74E-10**
Total			***0.0864***	***172.7***	***0.0526***	***0.0066***		

Construction Hours

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

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Emissions Model 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 ($g/s/m^2$)
2021	Construction	0.0133	DPM	26.6	0.00811	1.02E-03	18,475	**5.53E-08**
2022	Construction	0.0018	DPM	3.5	0.00108	1.36E-04	18,476	**7.36E-09**
Total		***0.0151***		***30.2***	***0.0092***	***0.0012***		

Construction Hours

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

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

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2021	Construction	FUG	0.0198	39.5	0.01202	1.52E-03	18,475	**8.20E-08**
2022	Construction	FUG	0.0001	0.2	0.00006	7.86E-06	18,476	**4.25E-10**
Total			***0.0199***	***39.7***	***0.0121***	***0.0015***		

Construction Hours

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

The Veranda at Indian Springs, Calistoga
Construction Health Impacts Summary

Maximum Impacts at Construction MEI Location - Unmitigated

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2021	0.1913	0.1333	34.1	0.55	0.038	0.32
2022	0.0197	0.0000	3.2	0.06	0.004	0.02
Total	-	-	**37.4**	**0.6**	-	-
Maximum	0.1913	0.1333	**-**	**-**	**0.038**	**0.32**

Maximum Impacts at Construction MEI Location - With Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2021	0.0275	0.0473	4.90	0.08	0.006	0.07
2022	0.0037	0.0003	0.60	0.01	0.001	0.00
Total	-	-	**5.5**	**0.1**	-	-
Maximum	0.0275	0.0473	**-**	**-**	**0.006**	**0.07**

The Veranda at Indian Springs, Calistoga
Maximum DPM Cancer Risk Calculations From Construction - Unmitigated Emissions
Impacts at Off-Site Receptors - 5 feet

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*	2021	0.1913	10	2.71	2021	0.1913	-	-	**0.038**	**0.133**	**0.325**
1	1	0 - 1	2021	0.1913	10	31.42	2021	0.1913	1	0.55	0.038	0.1333	0.325
2	1	1 - 2	2022	0.0197	10	3.23	2022	0.0197	1	0.06	0.004	0.0000	0.020
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						**37.4**				**0.61**			

* Third trimester of pregnancy

The Veranda at Indian Springs, Calistoga
Maximum DPM Cancer Risk Calculations From Construction - Mitigated Emissions
Impacts at Off-Site Receptors - 5 feet

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 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult
					Age	Cancer	Modeled		Age	Cancer
Exposure	Exposure Duration		DPM Conc (ug/m3)		Sensitivity	Risk	DPM Conc (ug/m3)		Sensitivity	Risk
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)
0	0.25	-0.25 - 0*	2021	0.0275	10	0.37	2021	0.0275	-	-
1	1	0 - 1	2021	0.0275	10	4.52	2021	0.0275	1	0.08
2	1	1 - 2	2022	0.0037	10	0.60	2022	0.0037	1	0.01
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00
Total Increased Cancer Risk						**5.5**				**0.09**

Maximum		
Hazard Index	**Fugitive PM2.5**	**Total PM2.5**
0.006	**0.047**	**0.075**
0.006	0.0473	0.075
0.001	0.0003	0.004

* Third trimester of pregnancy

Calistoga State Preschool, Calistoga - Construction Impacts
Maximum DPM Cancer Risk and PM2.5 Calculations - Without Mitigation
School - 1.0 meters - Child Exposure

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

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

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

Where: C_{air} = concentration in air ($\mu g/m^3$)
SAF = Student Adjustment Factor (unitless)
= (24 hrs/9 hrs) x (7 days/5 days) = 3.73
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant	School Child	Adult
Age -->	**0 - <2**	**2 - <16**	**16 - 30**
Parameter			
ASF =	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00
8-Hr BR* =	1200	520	230
A =	1	1	1
EF =	350	180	250
AT =	70	70	70
SAF =	1.00	3.73	1.00

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

		Child - Exposure Information				Maximum		
Exposure Year	Exposure Duration (years)	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age* Sensitivity Factor	Child Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
1	1	2021	0.0239	3	1.08	0.0048	0.0154	0.0393
2	1	2022	0.0025	3	0.11	0.0005	0.0000	0.0025
				TOTAL	**1.2**	**0.0048**	**0.015**	**0.039**

*Children assumed to be from 2 to 4 years of age

Palisades High School and Calistoga Junior Senior High School - Construction Impacts
Maximum DPM Cancer Risk and PM2.5 Calculations - Without Mitigation
School - 1.5 meters - Child Exposure

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

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

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

Where: C_{air} = concentration in air ($\mu g/m^3$)
SAF = Student Adjustment Factor (unitless)
= (24 hrs/9 hrs) x (7 days/5 days) = 3.73
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant	School Child	Adult
Age -->	**0 - <2**	**2 - <16**	**16 - 30**
Parameter			
ASF =	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00
8-Hr BR* =	1200	520	230
A =	1	1	1
EF =	350	180	250
AT =	70	70	70
SAF =	1.00	3.73	1.00

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Child - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age* Sensitivity Factor	Child Cancer Risk (per million)	Maximum Hazard Index	Maximum Fugitive PM2.5	Maximum Total PM2.5
1	1	2021	0.0260	3	1.17	0.0052	0.0162	0.0422
2	1	2022	0.0027	3	0.12	0.0005	0.0000	0.0027
				TOTAL	**1.3**	**0.0052**	**0.016**	**0.042**

* Children assumed to be from 5 to 13 years of age

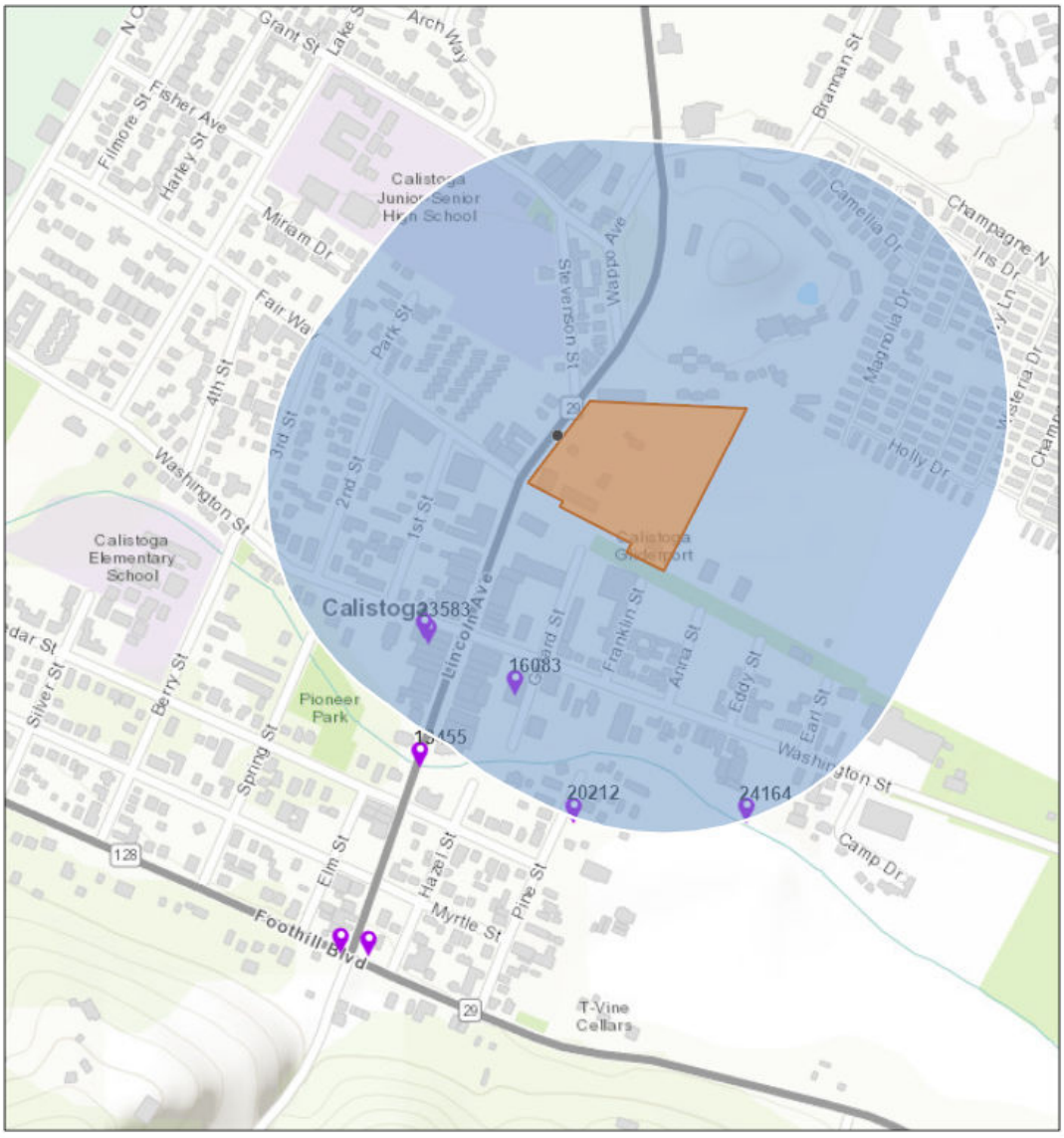
Attachment 5: Cumulative Community Risk Calculations from Existing TAC Sources

Stationary Source Risk & Hazards Screening Report

Area of Interest (AOI) Information

Area : 5,754,564.28 ft²

Apr 27 2020 9:35:29 Pacific Daylight Time



Permitted Facilities 2018

California Air Basins

1:8,232

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

20-029 The Veranda at Indian Springs

Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Facilities 2018	5	N/A	N/A

Permitted Facilities 2018

#	FACID	Name	Address	City	St
1	16082	City of Calistoga - Police Department	1235 Washington Street	Calistoga	CA
2	16083	City of Calistoga - Fire Department	1113 Washington Street	Calistoga	CA
3	20212	City of Calistoga	1350 Pine Street	Calistoga	CA
4	23583	Yo el Rey Roasting	1217 Washington	Calistoga	CA
5	24164	Calistoga Coffee Company LLC	713A Washington Street	Calistoga	CA

#	Zip	County	Cancer	Hazard	PM_25	Type	Count
1	94515	Napa	2.500	0.000	0.000	Generators	1
2	94515	Napa	4.230	0.000	0.010	Generators	1
3	94515	Napa	0.010	0.000	0.000	Generators	1
4	94515	Napa	0.000	0.000	0.040	Contact BAAQMD	1
5	94515	Napa	0.000	0.000	0.000	Contact BAAQMD	1

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

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

FID	OBJECTID	FACID	Name	Address	City	St	Zip	County	Cancer	Hazard	PM_25	Type	Latitude	Longitude	x	y
2687	2,687	16082	City of Calistoga - Police Department	1235 Washington Street	Calistoga	CA	94515	Napa	2.5	0	0	Generators	38.579	-122.579	536670.2	4270142
2688	2,688	16083	City of Calistoga - Fire Department	1113 Washington Street	Calistoga	CA	94515	Napa	4.23	0	0.01	Generators	38.578	-122.578	536757.8	4270032
4538	4,538	20212	City of Calistoga	1350 Pine Street	Calistoga	CA	94515	Napa	0.01	0	0	Generators	38.577	-122.578	536758.4	4269921
6322	6,322	23583	Yo el Rey Roasting	1217 Washington	Calistoga	CA	94515	Napa	0	0	0.04	Contact BAAQMD	38.579	-122.58	536583.1	4270142
6589	6,589	24164	Calistoga Coffee Company LLC	713A Washington Street	Calistoga	CA	94515	Napa	0	0	0	Contact BAAQMD	38.577	-122.575	537019.7	4269922

Adjusted Risks and Hazards

FACID	Name	Type	Distance (feet)	Cancer	Hazard	PM_25
16082	City of Calistoga - Police Department	Generators	<1000	0.1	0	0
16083	City of Calistoga - Fire Department	Generators	<1000	0.1692	0	0.0004
20212	City of Calistoga	Generators	<1000	0.0004	0	0
23583	Yo el Rey Roasting	Contact BAAQMD	<1000	0	0	0.04
24164	Calistoga Coffee Company LLC	Contact BAAQMD	<1000	0	0	0

Distance Adjustment Factor for Diesel Backup Generators

0.04

No distance adjustment factor for coffee roasting sources