APPENDIX B
Air Quality Assessment

1655 BERRYESSA MIXED-USE DEVELOPMENT AIR QUALITY ASSESSMENT

San José, California

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INTRODUCTION

The purpose of this report is to address air quality and community health risk impacts associated with the proposed mixed-use project located at 1655 Berryessa Road in San José, California. The air quality impacts from this project would be associated with demolition of the existing land uses, construction of the new buildings and infrastructure, and operation of the project. Air pollutants associated with construction and operation of the project were predicted using appropriate models. In addition, the potential project health risk impacts (includes construction and operation) and the impact of existing toxic air contaminant (TAC) sources affecting the nearby and proposed sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

PROJECT DESCRIPTION

The 13-acre project site is within the boundaries of the 270-acre Berryessa BART Urban Village (BBUV) Plan area. The project site currently contains three industrial buildings and ancillary structures, an associated parking lot, a vegetated pond, and trees. The northern portion of the site has been cleared and graded. The project proposes to demolish the existing uses and construct up to 850 residential units, 480,000 square feet (sf) of commercial space, and a 0.9-acre open space park at the project site. The residences would be located in the northeastern and central areas, and along the northern and western perimeter of the site. The proposed commercial space would be located in the southern area of the site, fronting Berryessa Road, and the open space park would be located on the northwestern corner of the site.

The 850 residential units would include 614 market rate multi-family, 189 affordable multi-family, 23 townhouse, and 24 single-family units. The single-family and townhouse units would be two-stories, the market rate multi-family buildings would be nine stories, and the affordable multi-family would be 10 stories. The proposed commercial building would be 10 stories containing 465,000-sf of medical office space and 15,000-sf of retail/restaurant space. The project would provide two levels of underground parking in residential buildings and three levels of underground parking in the commercial building for a total of 2,105 parking stalls.

AIR POLLUTANTS AND CONTAMINANTS

Air pollutants are governed by multiple federal and state standards to regulate and mitigate health impacts. At the federal level, there are six criteria pollutants for which National Ambient Air Quality Standards (NAAQS) have been established: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), suspended particulate matter (PM: $PM_{2.5}$ and PM_{10}), and sulfur dioxide (SO_2). California sets standards, similar to the NAAQS as California Ambient Air Quality Standards (CAAQS). Health effects of the primary criteria pollutants (i.e., the NAAQS) and their potential sources are described below and summarized in Table 1. Note that California includes pollutants or contaminants that are specific to certain industries and not associated with this project. These include hydrogen sulfide and vinyl chloride.

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

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_X). The main sources of ROG and NO_X, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, shortness of breath, and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide

Carbon monoxide is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. While CO transport is limited, it disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal.

Nitrogen Dioxide

Nitrogen Dioxide is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contribute to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection. On January 22, 2010 the U.S. Environmental Protection Agency (EPA) strengthened the health-based NAAQS for NO_2.

Sulfur Dioxide

Sulfur dioxide is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels in the region. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are larger than 2.5 microns but smaller than 10 microns (PM_{10}). $PM_{2.5}$ refers to fine suspended particulate matter with an aerodynamic diameter of 2.5 microns or less that is not readily filtered out by the lungs. Nitrates, sulfates, dust, and combustion particulates are major components of PM_{10} and $PM_{2.5}$. These small particles can be directly emitted into the atmosphere as by-products of fuel combustion, through abrasion, such as tire or brake lining wear, or through fugitive dust (wind or mechanical erosion of soil). They can also be formed in the atmosphere through chemical reactions. Particulates may transport carcinogens and other toxic compounds that adhere to the particle surfaces and can enter the human body through the lungs.

Lead

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufactures.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the U.S. EPA established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

Toxic Air Contaminants (TACs)

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated by the EPA and the California Air Resources Board (CARB). Some examples of TACs include benzene, butadiene, formaldehyde, and hydrogen sulfide. The identification, regulation, and monitoring of TACs is relatively recent compared to that for criteria pollutants.

High volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high volume transit centers, or schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

Table 1. Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood functions and nerve con-struction. • Behavioral and hearing problems in children.
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardiorespiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.
Toxic Air Contaminants	• Cars and trucks, especially diesels. • Industrial sources such as chrome platers. • Neighborhood businesses such as dry cleaners and service stations. • Building materials and product.	• Cancer. • Chronic eye, lung, or skin irritation. • Neurological and reproductive disorders.

Source: CARB, 2009. ARB Fact Sheet: Air Pollution and Health, see: https://www.arb.ca.gov/research/health/fs/fs1/fs1.htm accessed May 1, 2018

SETTING

The project is located in Santa Clara County, which is part of the San Francisco Bay Area Air Basin. The Air Basin includes the counties of San Francisco, Santa Clara, San Mateo, Marin, Napa, Contra Costa, and Alameda, along with the southeast portion of Sonoma County and the southwest portion of Solano County.

This Project is within the jurisdiction of the BAAQMD. Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants, and the number of days during which the region exceeds air quality standards, have fallen dramatically. Exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

Local Climate and Air Quality

Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. Climate and topography are major influences on air quality.

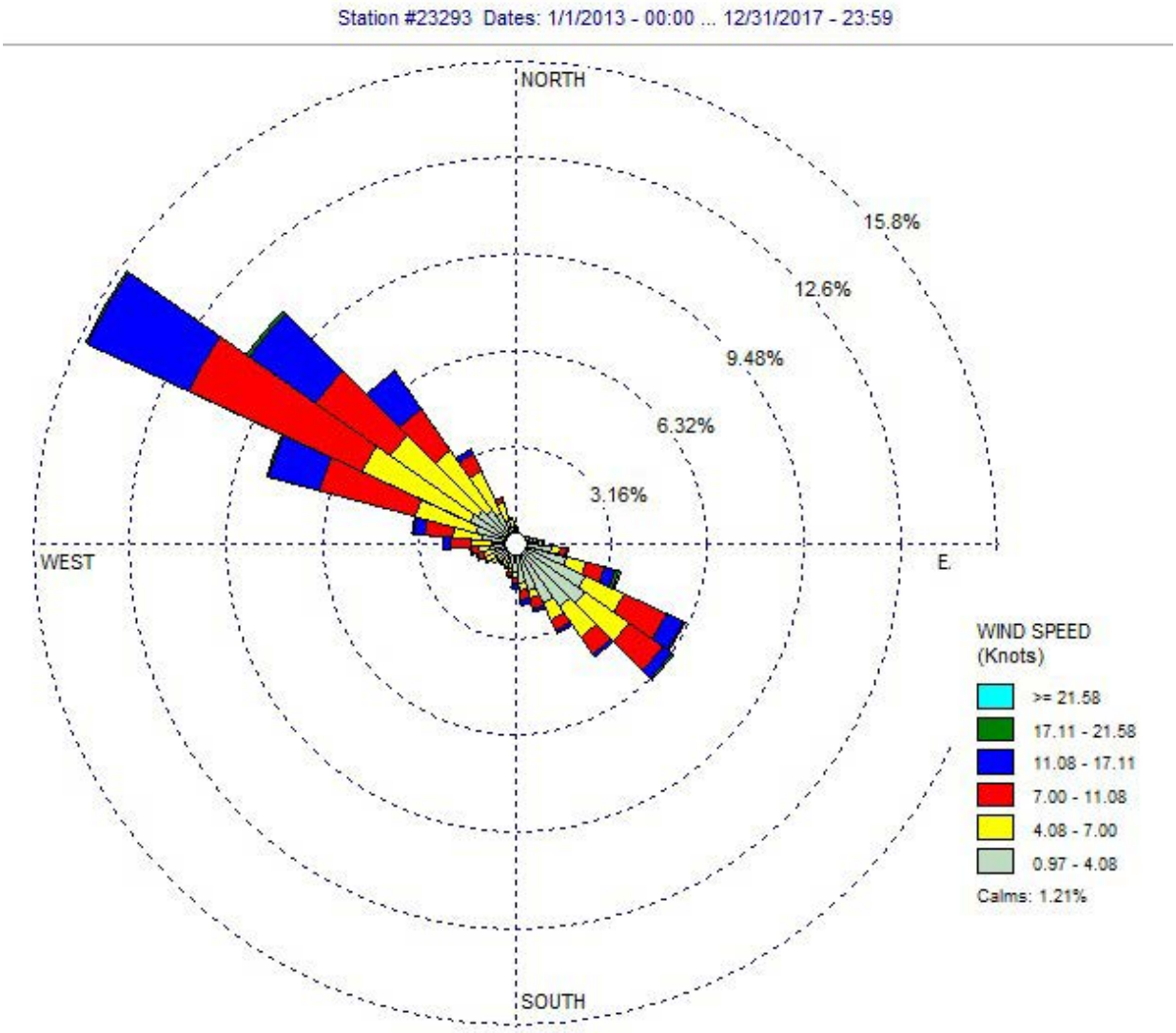
Climate and Meteorology

During the summer, mostly clear skies result in warm daytime temperatures and cool nights in the Santa Clara Valley. Winter temperatures are mild, except for very cool but generally frost-less mornings. Further inland where the moderating effect of the bay is not as strong, temperature extremes are greater. Rainfall amounts are modest, ranging from 13 inches in the lowlands to 20 inches in the hills. Wind patterns are influenced by local terrain, with a northwesterly breeze in response to the sea breeze infiltrating San Francisco Bay typically developing during the daytime. Winds are usually stronger in the spring and summer. The southerly winds experienced are more common in late fall and winter. The wind rose shown in Figure 1 describes the patterns and frequency of winds at the project site. Wind data were collected from 2013 through 2017.

Air Pollution Potential

Ozone and fine particle pollution, or $PM_{2.5}$, are the major regional air pollutants of concern in the San Francisco Bay Area. Ozone is primarily a problem in the summer, and fine particle pollution in the winter. Most of Santa Clara County is well south of the cooler waters of the San Francisco Bay and far from the cooler marine air which usually reaches across San Mateo County in summer. Ozone frequently forms on hot summer days when the prevailing seasonal northerly winds carry ozone precursors southward across the county, causing health standards to be exceeded. Santa Clara County experiences many exceedances of the $PM_{2.5}$ standard each winter. This is due to the high population density, wood smoke, industrial and freeway traffic, and poor wintertime air circulation caused by extensive hills to the east and west that block wind flow into the region.

Figure 1. Windrose for San José International Airport based on Data Processed by BAAQMD



Attainment Status Designations

The CARB is required to designate areas of the state as attainment, nonattainment, or unclassified for all state standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A "nonattainment" designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An "unclassified" designation signifies that data does not support either an attainment or nonattainment status. The California Clean Air Act (CCAA) divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

Table 2 shows the state and federal standards for criteria pollutants and provides a summary of the attainment status for the San Francisco Bay Area with respect to national and state ambient air quality standards.

Table 2. NAAQS, CAAQS, and San Francisco Bay Area Attainment Status

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Carbon Monoxide (CO)	8-Hour	9 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Attainment
	1-Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment
Nitrogen Dioxide (NO_2)	Annual Mean	0.030 ppm (57 mg/m^3)	Attainment	0.053 ppm (100 µg/m^3)	Attainment
	1-Hour	0.18 ppm (338 µg/m^3)	Attainment	0.100 ppm	Unclassified
Ozone (O_3)	8-Hour	0.07 ppm (137 µg/m^3)	Nonattainment	0.070 ppm	Nonattainment
	1-Hour	0.09 ppm (180 µg/m^3)	Nonattainment	Not Applicable	Not Applicable
Suspended Particulate Matter (PM_{10})	Annual Mean	20 µg/m^3	Nonattainment	Not Applicable	Not Applicable
	24-Hour	50 µg/m^3	Nonattainment	150 µg/m^3	Unclassified
Suspended Particulate Matter ($PM_{2.5}$)	Annual Mean	12 µg/m^3	Nonattainment	12 µg/m^3	Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m^3	Nonattainment
Sulfur Dioxide (SO_2)	Annual Mean	Not Applicable	Not Applicable	80 µg/m^3 (0.03 ppm)	Attainment
	24-Hour	0.04 ppm (105 µg/m^3)	Attainment	365 µg/m^3 (0.14 ppm)	Attainment
	1-Hour	0.25 ppm (655 µg/m^3)	Attainment	0.075 ppm (196 µg/m^3)	Attainment

Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s. ppm = parts per million, mg/m^3 = milligrams per cubic meter, µg/m^3 = micrograms per cubic meter

Source: Bay Area Air Quality Management District, 2017. *Air Quality Standards and Attainment Status.* January 5.

Existing Air Pollutant Levels

BAAQMD monitors air pollution at various sites within the Bay Area. The closest air monitoring station (158 Jackson Street) that monitored O_3, CO, NO, NO_2, PM_{10}, and $PM_{2.5}$ over the past 5 years (2015 through 2019) is in the City of San José, approximately 6.5 miles northeast of the project site. The data shows that during the past few years, the project area has exceeded the state and/or federal O_3, PM_{10}, and $PM_{2.5}$ ambient air quality standards. Table 3 lists air quality trends in data collected for the past 5 years and published by the BAAQMD and CARB, which is the most recent time-period available. Ozone standards (includes 1-hr concentration and 8-hr concentration) were exceeded on 0 to 4 days annually in San José and 3 to 15 days throughout the Bay Area. Measured 24-hour PM_{10} and $PM_{2.5}$ concentrations are exceeded on 0 to 6 monitoring days in San José and up to 18 days at any place in the Bay Area (note these levels were influences by smoke from wildfires).

Table 3. Ambient Air Quality Concentrations from 2014 through 2018

Pollutant	Standard	2015	2016	2017	2018	2019
Ozone						
Max 1-hr concentration		94 ppb	87 ppb	121 ppb	78 ppb	95 ppb
No. days exceeded: CAAQS	90 ppb	0	0	3	0	1
Max 8-hr concentration		81 ppb	66 ppb	98 ppb	61 ppb	81 ppb
No. days exceeded: CAAQS	70 ppb	2	0	4	0	2
NAAQS	70 ppb	2	0	4	0	2
Carbon Monoxide						
Max 1-hr concentration		2.4 ppm	2.0 ppm	2.1 ppm	2.5 ppm	1.7 ppm
No. days exceeded: CAAQS	20 ppm	0	0	0	0	0
NAAQS	35 ppm	0	0	0	0	0
Max 8-hr concentration		1.8 ppm	1.4 ppm	1.8 ppm	2.1 ppm	1.3 ppm
No. days exceeded: CAAQS	9.0 ppm	0	0	0	0	0
NAAQS	9 ppm	0	0	0	0	0
PM_{10}						
Max 24-hr concentration		58 µg/m^3	41 µg/m^3	70 µg/m^3	122 µg/m^3	77 µg/m^3
No. days exceeded: CAAQS	50 µg/m^3	1	0	6	4	4
NAAQS	150 µg/m^3	0	0	0	0	0
Max annual concentration		22.0 µg/m^3	18.5 µg/m^3	21.6 µg/m^3	23.1 µg/m^3	19.2 µg/m^3
No. days exceeded: CAAQS	-	-	-	-	-	-
$PM_{2.5}$						
Max 24-hr concentration		49.4 µg/m^3	22.6µg/m^3	49.7 g/m^3	133.9µg/m^3	27.6 µg/m^3
No. days exceeded: NAAQS	35 µg/m^3	2	0	6	15	4
Annual Concentration		10.0 g/m^3	8.4 µg/m^3	9.5 µg/m^3	12.8µg/m^3	12.8µg/m^3
No. days exceeded: CAAQS	12 µg/m^3	-	-	-	-	-
NAAQS	12 µg/m^3	-	-	-	-	-
Nitrogen Dioxide						
Max 1-hr concentration		49 ppb	51 ppb	68 ppb	86 ppb	60 ppb
No. days exceeded: CAAQS	0.18 ppm	0	0	0	0	0
NAAQS	0.100 ppm	0	0	0	0	0
Annual Concentration		13 ppb	11 ppb	12 ppb	13 ppb	11 ppb
No. days exceeded: CAAQS	0.030 ppm	-	-	-	-	-
NAAQS	0.053 ppm	-	-	-	-	-

Source: Bay Area Air Quality Management District, 2020, Web: https://www.baaqmd.gov/about-air-quality/air-quality-summaries. California Air Resource Board, 2020, Web: https://arb.ca.gov/adam/select8/sc8start.php

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children.

The project site is surrounded by residences to the north, east, and west. Some of the developments to the west are still under construction, but it is assumed that all the residences would be constructed and occupied by the time this project is under construction. It is assumed that the approved Flea Market development's sensitive receptors could be present to the south during construction of this project. In addition, Genius Kids Berryessa is a daycare facility with children ages 2 months to 12 years of age located east of the site opposite Berryessa Road. This project would also introduce new sensitive receptors to the area in the form of residents.

REGULATORY FRAMEWORK

Pursuant to the Federal Clean Air Act (FCAA) of 1970, the EPA established the NAAQS. The NAAQS were established for major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

Both the EPA and the CARB have established ambient air quality standards for common pollutants: CO, O_3, NO_2, SO_2, Pb, and PM. In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are designed to protect the health and welfare of the public with a reasonable margin of safety. These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each criteria pollutant.

Federal Air Quality Regulations

At the federal level, the EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the FCAA, which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

The FCAA required EPA to establish primary and secondary NAAQS and required each state to prepare an air quality control plan referred to as a State Implement Plan (SIP). Federal standards include both primary and secondary standards. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased

visibility, damage to animals, crops, vegetation, and buildings.[2] The Federal Clean Air Act Amendments of 1990 (FCAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA has responsibility to review all state SIPs to determine conformity with the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area which imposes additional control measures. Failure to submit an approvable SIP or to implement the Plan within the mandated timeframe may result in the application of sanctions on transportation funding and stationary air pollution sources in the air basin.

The 1970 FCAA authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The FCAA Amendments of 1990 changed deadlines for attaining NAAQS as well as the remedial actions required of areas of the nation that exceed the standards. Under the FCAA, state and local agencies in areas that exceed the NAAQS are required to develop SIPs to show how they will achieve the NAAQS by specific dates. The FCAA requires that projects receiving federal funds demonstrate conformity to the approved SIP and local air quality attainment Plan for the region. Conformity with the SIP requirements would satisfy the FCAA requirements.

State Air Quality Regulations

The CARB is the agency responsible for the coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA, adopted in 1988. The CCAA requires that all air districts in the state achieve and maintain the CAAQS by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources and provides districts with the authority to regulate indirect sources.

CARB is also responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. CARB is primarily responsible for statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. CARB combines this data and submits the completed SIP to the EPA.

Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which in many cases are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

[2] See: U.S. Environmental Protection Agency, Web: https://www.epa.gov/criteria-air-pollutants/naaqs-table, Accessed 13 August 2020

California Clean Air Act

In 1988, the CCAA required that all air districts in the state endeavor to achieve and maintain CAAQS for CO, O_3, SO_2, and NO_2 by the earliest practical date. The CCAA provides districts with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each nonattainment district is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the state standards for these pollutants are more stringent than the national standards.

California Air Resources Board Handbook

In 1998, CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[3] CARB subsequently developed an Air Quality and Land Use Handbook[4] (Handbook) in 2005 that is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. The 2005 CARB Handbook recommends that planning agencies consider proximity to air pollution sources when considering new locations for "sensitive" land uses, such as residences, medical facilities, daycare centers, schools, and playgrounds.

Air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners, and large gasoline service stations. Key recommendations in the Handbook relative to the Plan Area include taking steps to consider or avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day.
- Within 300 feet of gasoline fueling stations (note that new fueling stations utilize enhanced vapor recovery systems that substantially reduce emissions).
- Within 300 feet of dry-cleaning operations (note that dry cleaning with TACs is being phased out and will be prohibited in 2023).

Truck and Bus Regulation

CARB is actively enforcing heavy-duty diesel vehicle regulations that require fleets to replace or retrofit heavy-duty diesel vehicles, with full implementation of the program scheduled for January 1, 2023. Compliance with the program is generally considered vehicles equipped with a 2010 or newer engine model year. As of January 1, 2020, the DMV cannot register any vehicle that does not meet the requirements of the Truck and Bus Regulation.

[3] California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.
[4] California Air Resources Board, 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

Other CARB diesel programs affecting heavy-duty diesel vehicles include:

- Idling limits of no more than 5 minutes with special exceptions.
- Emission Control Labels must be affixed to engines of all commercial heavy-duty diesel vehicles, and must be legible as proof the engine, at minimum, meets U.S. federal emissions standards for the engine model year.
- The Periodic Smoke Inspection Program requires owners of California-based fleets of two or more diesel vehicles to perform annual smoke opacity tests and to keep records for at least two years for each vehicle.
- The Heavy-Duty Vehicle Inspection Program uses random roadside inspections to verify that diesel engines do not smoke excessively and are tamper-free.

Off-Road Vehicle and Equipment Regulations

CARB has also adopted and implemented regulations to reduce DPM and nitrogen oxides (NOx) 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 NOx 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, is expected to substantially reduce emissions of DPM and NOx.

Fleet owners must report the vehicle and engine information for all vehicles within their fleets operating in California. Fleet owners must also report owner information. Fleet owners should report using DOORS, which is CARB's online reporting tool. CARB issues a unique Equipment Identification Number (EIN) that is assigned to each vehicle. The fleet owner must label their vehicles with the EIN.

Other CARB diesel programs affecting off-road vehicles and equipment include:

- Idling limits of no more than 5 minutes with special exceptions.
- Portable engines 50 hp or greater may require a permit or registration to legally operate. BAAQMD is responsible for taking enforcement action against individuals who own or operate portable equipment without a registration or permit.

Bay Area Air Quality Management District

The BAAQMD seeks to attain and maintain air quality conditions in the San Francisco Bay Area Air Basin (SFBAAB) through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

Clean Air Plan

The BAAQMD is responsible for developing a Clean Air Plan which guides the region's air quality planning efforts to attain the CAAQS. The BAAQMD's 2017 Clean Air Plan is the latest Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO_X), particulate matter and greenhouse gas emissions. The Bay Area 2017 Clean Air Plan, which was adopted on April 19, 2017 by the BAAQMD's board of directors:

- Updates the Bay Area 2010 Clean Air Plan in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
- Provides a control strategy to reduce ozone, particulate matter (PM), air toxics, and greenhouse gases in a single, integrated plan;
- Reviews progress in improving air quality in recent years; and
- Continues and updates emission control measures.

BAAQMD CARE Program

The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[5] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. The BAAQMD has identified six communities as impacted: Concord, Richmond/San Pablo, Western Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco. The project site is within the San José at-risk community area.

Planning Healthy Places

BAAQMD developed a guidebook that provides air quality and public health information intended to assist local governments in addressing potential air quality issues related to exposure of sensitive receptors to exposure of emissions from local sources of air pollutants. The guidance provides tools and recommended best practices that can be implemented to reduce exposures. The information is provided as recommendations to develop policies and implementing measures in city or county General Plans, neighborhood or specific plans, land use development ordinances, or into projects.

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

BAAQMD California Environmental Quality Act Air Quality Guidelines

The BAAQMD California Environmental Quality Act (CEQA) Air Quality Guidelines[6] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of their CEQA Guidelines. In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modify procedures for assessing impacts related to risk and hazard impacts. A recent update to the Guidelines was published in May 2017.

Projects that have TAC emissions that could adversely affect sensitive receptors prepare health risk assessments to quantify the potential and, if appropriate, identify mitigation measures to reduce impacts. This report includes a health risk assessment that evaluates impacts form temporary project construction, long-term use of stationary equipment, and long-term traffic activity generated by the project.

BAAQMD Rules and Regulations

Combustion equipment associated with the proposed project that includes new diesel engines to power generators and possibly new natural gas-fired boilers would establish new sources of particulate matter and gaseous emissions. Emissions would primarily result from the testing of the emergency backup generators, operation of the boilers for space and water heating and some minor emissions from cooling towers. Certain emission sources would be subject to BAAQMD Regulations and Rules. The District's rules and regulations that may apply to the project include:

- Regulation 2 – Permits
  - Rule 2-1: General Requirements
  - Rule 2-2: New Source Review
- Regulation 6 – Particulate Matter and Visible Emissions
  - Rule 6-3: Wood-Burning Devices
- Regulation 9 – Inorganic Gaseous Pollutants
  - Rule 9-1: Sulfur Dioxide
  - Rule 9-7: Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, And Process Heaters
  - Rule 9-8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines

Permits

Rule 2-1-301 requires that any person installing, modifying, or replacing any equipment, the use

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

of which may reduce or control the emission of air contaminants, shall first obtain an Authority to Construct (ATC).

Rule 2-1-302 requires that written authorization from the BAAQMD in the form of a Permit to Operate (PTO) be secured before any such equipment is used or operated.

Rule 2-1 lists sources that are exempt from permitting. At the proposed facility, the diesel fuel storage tanks are expected to be exempt from permitting.

New Source Review

Rule 2-2, New Source Review (NSR), applies to all new and modified sources or facilities that are subject to the requirements of Rule 2-1-301. The purpose of the rule is to provide for review of such sources and to provide mechanisms by which no net increase in emissions will result.

Rule 2-2-301 requires that an applicant for an ATC or PTO apply Best Available Control Technology (BACT) to any new or modified source that results in an increase in emissions and has emissions of precursor organic compounds, non-precursor organic compounds, NOx, SO_2, PM_{10}, or CO of 10.0 pounds or more per highest day. Based on the estimated emissions from the proposed project, BACT will be required for NOx emissions from the diesel-fueled generator engines.

BACT for Diesel Generator Engines

Since the generators will be used exclusively for emergency use during involuntary loss of power, the BACT levels listed for IC compression engines in the BAAQMD BACT Guidelines would apply. These are provided for two separate size ranges of diesel engines:

> I.C. Engine – Compression Ignition >50hp and <1.000hp: BAAQMD applies BACT 2 emission limits based on the ATCM for stationary emergency standby diesel engines larger than 50 brake-horsepower (BHP). NOx emission factor limit is subject to the CARB ACTM that ranges from 3.0 to 3.5 grams per horsepower hour (g/hp-hr). The PM (PM10 or PM2.5) limit is 0.15 g/hp-hr per CARB's ACTM.
>
> I.C. Engine – Compression Ignition <999hp: BAAQMD applies specific BACT emission limits for stationary emergency standby diesel engines equal or larger than 1,000 brake-horsepower (BHP). NOx emission factor limit is subject to the CARB ACTM that ranges from 0.5 g/hp-hr. The PM (PM10 or PM2.5) limit is 0.02 g/hp-hr. POC (i.e., ROG) limits are 0.14 g/hp-hr.

Offsets

Rule 2-2-302 require that offsets be provided for a new or modified source that emits more than 10 tons per year of NOx or precursor organic compounds. It is not expected that emissions of any pollutant will exceed the offset thresholds. Thus, is not expected that offsets for the proposed project would be required.

Prohibitory Rules

Regulation 6 pertains to particulate matter and visible emissions. Although the engines will be fueled with diesel, they will be modern, low emission engines. Thus, the engines are expected to comply with Regulation 6.

Rule 6-3 applies to emissions from wood-burning devices. Effective November 1, 2016, no person or builder shall install a wood-burning device in a new building construction. Project plans do not depict fireplaces.

Rule 9-1 applies to sulfur dioxide. The engines will use ultra-low sulfur diesel fuel (less than 15 ppm sulfur) and will not be a significant source of sulfur dioxide emissions and are expected to comply with the requirements of Rule 9-1.

Rule 9-7 limits the emissions of NOx CO from industrial, institutional and commercial boilers, steam generators and process heaters. This regulation typically applies to boilers with a heat rating of 2 million British Thermal Units (BTU) per hour

Rule 9-8 prescribes NOx and CO emission limits for stationary internal combustion engines. Since the proposed engines will be used with emergency standby generators, Regulation 9-8-110 exempts the engines from the requirements of this Rule, except for the recordkeeping requirements (9-8-530) and limitations on hours of operation for reliability-related operation (maintenance and testing). The engines will not operate more than 50 hours per year, which will satisfy the requirements of 9-8-111.

Air Pollutants of Concern in the Bay Area

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

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

Toxic Air Contaminants

Toxic air contaminants 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 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.

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. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.[7] The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

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 EPA) oversees regional air district activities and regulates air quality at the state level. The BAAQMD has published CEQA Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.[8] Projects that have TAC emissions that could adversely affect sensitive receptors prepare health risk assessments to quantify the potential and, if appropriate, identify mitigation measures to reduce impacts. This report includes a health risk assessment that evaluates impacts form temporary project construction, long-term use of stationary equipment, and long-term traffic activity generated by the project. The detailed health risk modeling methodology used in this assessment is contained in *Attachment 1*.

City of San José

San José Envision 2040 General Plan

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

Applicable Goals – Air Pollutant Emission Reduction

[7] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: November 21, 2014.
[8] Bay Area Air Quality Management District. 2017. *BAAQMD CEQA Air Quality Guidelines*. May.

Goal MS-10 Minimize emissions from new development.

Applicable Policies – Air Pollutant Emission Reduction

MS-10.1 Assess projected air emissions from new development in conformance with the BAAQMD CEQA Guidelines and relative to state and federal standards. Identify and implement feasible air emission reduction measures.

MS-10.2 Consider the cumulative air quality impacts from proposed developments for proposed land use designation changes and new development, consistent with the region's Clean Air Plan and state law.

MS-10.3 Promote the expansion and improvement of public transportation services and facilities, where appropriate, to both encourage energy conservation and reduce air pollution.

Applicable Goals – Toxic Air Contaminants

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

Applicable Policies – Toxic Air Contaminants

MS-11.1 Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution such as freeways and industrial uses. Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety.

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

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

MS-11.5 Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses.

Actions – Toxic Air Contaminants

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

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

Applicable Actions – Construction Air Emissions

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

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 CEQA Air Quality Guidelines. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the CEQA Air Quality Guidelines in 2017 to include the latest significance thresholds, which were used in this analysis and are summarized in Table 4. Impacts above these thresholds are considered significant.

Table 4. BAAQMD CEQA Exceedance 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	
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.			

Source: Bay Area Air Quality Management District, 2017

AIR QUALITY IMPACTS AND MITIGATION MEASURES

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

The Bay Area is considered a non-attainment area for ground-level ozone and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for 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 ozone and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NO_X), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to estimate emissions from construction and operation of the project assuming full build-out conditions. The project land use types and size were input to CalEEMod. The project applicant provided some information regarding the construction schedule but CalEEMod defaults for a project of this size and type were primarily used in this analysis. The CARB EMission FACtors 2021 model (EMFAC2021) model was used to predict emissions from construction truck traffic and trips.[9] The model output from CalEEMod is included in *Attachment 2* and EMFAC2021 emissions modeling outputs are included in *Attachment 3*.

CalEEMod Inputs

Land Use Inputs

The proposed project land uses were entered into CalEEMod as described in Table 5.

Table 5. Project Land Uses Entered into CalEEMod

Project Land Uses	Size	Units	Square Feet	Acreage
Apartments Mid Rise	803	Dwelling Units	709,205	21.13
Single Family Housing	24	Dwelling Units	43,200	7.79
Condo/Townhouse	23	Dwelling Units	23,000	1.44
Medical Office Building	465	1,000 Square Feet	465,000	10.67
High Turnover (Sit Down Restaurant)	15	1,000 Square Feet	15,000	0.34
City Park	0.9	Acre	39,204	0.90
Enclosed Parking with Elevator	2,105	Parking Spaces	842,000	0.00
* CalEEMod defaults used for land use acreages and square feet (except for provided apartment square footage).				

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

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size, and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic.

The construction build-out scenario, including equipment list and schedule, were based on CalEEMod defaults for a project of this type and size. The construction CalEEMod defaults included the schedule for each phase. Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays was set to the default values in CalEEMod. A trenching phase was added, overlapping the grading phase, to account for the infrastructure improvements. The CalEEMod-generated construction schedule assumed that the earliest possible start date would be April 2023 and would be built out over a period of approximately 3 years and 8 months, or 950 construction workdays. The earliest year of full operation was assumed to be 2027.

Construction Truck Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the estimate of demolition material to be exported, soil material imported and/or exported to the site, and the estimate of cement and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition and grading were estimated by CalEEMod from the provided demolition and grading volumes by assuming each truck could carry 10 tons per load.

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2017 motor vehicle emission factor model. This model has been superseded by the EMFAC2021 model; however, CalEEMod has not been updated to include EMFAC2021. The construction traffic information was combined with EMFAC2021 motor vehicle emissions factors. EMFAC2021 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod defaults, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category 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, 7.3 miles for vendor trips and 20 miles for hauling (demolition material export). Water truck vendor trips traveling 50 miles per day were added to the demolition, site preparation, and grading phases. Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. On-road emission rates for the year 2023 for Santa Clara County was used. Table 6 provides the traffic inputs that were combined with the EMFAC2021 emission database to compute vehicle emissions.

Table 6. Construction Traffic Data Used for EMFAC2021 Model Runs

CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Total Worker[1]	Total Vendor[1]	Total Haul[2]	
Vehicle mix[1]	50% LDA 25% LDT1 25% LDT2	50% MHDT 50% HHDT	100% HDDT	
Trip Length (miles)	10.8	50 (Demo/Site Prep/Grade) 7.3	20.0	CalEEMod default distance with 5-min truck idle time.
Demolition	750	50	75	16,500-sf of existing building demolition and water trucks. CalEEMod default worker trips.
Site Preparation	540	30	-	Water trucks. CalEEMod default worker trips.
Grading	1,500	75	21,875	10,000-cy of import and 165,000-cy of export soil volumes, and water trucks. CalEEMod default worker trips.
Trenching	375	-	-	CalEEMod default worker trips.
Building Construction	835,460	232,360	-	CalEEMod default worker and vendor trips.
Paving	825	-	-	CalEEMod default worker trips.
Architectural Coating	12,430	-	-	CalEEMod default worker trips.

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

Summary of Computed Construction Period Emissions

Average daily emissions were annualized for each year of construction by dividing the annual construction emissions by the number of active workdays during that year. Table 7 shows the annualized 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 7, annualized project construction ROG emissions are predicted to exceed the BAAQMD significance thresholds for ROG during the year 2026. However, with implementation of *Mitigation Measures AQ-2 and AQ-3*, the ROG emissions would be reduced to a level below the thresholds of 54 pounds per day. All other construction criteria pollutants emissions are below the BAAQMD thresholds.

Table 7. Construction Period Emissions

Year	ROG		NOx		PM_{10} Exhaust		$PM_{2.5}$ Exhaust	
Construction Emissions Per Year (Tons)								
Year	Unmit	Mit	Unmit	Mit	Unmit	Mit	Unmit	Mit
2023	0.63	0.44	3.94	2.89	0.21	0.10	0.15	0.05
2024	0.68	0.55	3.50	3.17	0.20	0.14	0.13	0.06
2025	0.66	0.55	3.36	3.15	0.19	0.14	0.12	0.06
2026	8.72	4.17	2.91	2.81	0.17	0.12	0.10	0.05
Annualized Daily Construction Emissions (pounds/day)								
Year	Unmit	Mit	Unmit	Mit	Unmit	Mit	Unmit	Mit
2022 (195 construction workdays)	6.42	4.51	40.39	29.64	2.15	1.04	1.50	0.48
2023 (262 construction workdays)	5.17	4.24	26.72	24.19	1.57	1.04	0.97	0.47
2025 (261 construction workdays)	5.07	4.23	25.73	24.18	1.48	1.04	0.89	0.47
2026 (232 construction workdays)	**75.25**	36.03	25.10	24.24	1.47	1.03	0.87	0.46
BAAQMD Thresholds (pounds per day)	*54* lbs./day		*54* lbs./day		*82* lbs./day		*54* lbs./day	
Exceed Threshold?	**Yes (2026)**	No	No	No	No	No	No	No
Notes: Unmit = Unmitigated, Mit = Mitigated								

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. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. *Mitigation Measure AQ-1 would implement BAAQMD-recommended best management practices*.

Mitigation Measure AQ-1: Implement BAAQMD-Recommended Measures to Control Particulate Matter Emissions during Construction. Measures to reduce DPM and PM_{10} from construction are recommended to ensure that short-term health impacts to nearby sensitive receptors are avoided.

Dust (PM_{10}) Control Measures:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

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 mph.

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

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

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

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

9. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph and visible dust extends beyond site boundaries.

10. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction adjacent to sensitive receptors. Wind breaks should have at maximum 50 percent air porosity.

11. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.

12. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.

13. Avoid tracking of visible soil material on to public roadways by employing the following measures if necessary: (1) Site accesses to a distance of 100 feet from public paved roads shall be treated with a 6 to 12-inch compacted layer of wood chips, mulch, or gravel and (2) washing truck tires and construction equipment of prior to leaving the site.

14. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent

Effectiveness of Mitigation AQ-1:

These measures are consistent with recommendations in the BAAMQD CEQA Guidance for providing "best management practices" to control construction emissions.

Mitigation Measure AQ-2: Use Construction equipment that has low diesel particulate matter exhaust and NO_X emissions.

Exhaust Emission (NOx and PM) Control Measures:

1. All construction equipment larger than 25 horsepower used at the site for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 emission standards for NOx and PM (PM_{10} and $PM_{2.5}$), if feasible, otherwise,

    a. If use of Tier 4 equipment is not available, alternatively use equipment that meets U.S. EPA emission standards for Tier 2 or 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve an 60 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment; alternatively (or in combination).

    b. Use of alternatively fueled equipment with lower NOx emissions that meet the NOx and PM reduction requirements above.

2. Diesel engines, whether for off-road equipment or on-road vehicles, shall not be left idling for more than 2 minutes, except as provided in exceptions to the applicable state regulations (e.g., traffic conditions, safe operating conditions). The construction sites shall have posted legible and visible signs in designated queuing areas and at the construction site to clearly notify operators of idling limit.

3. Provide line power to the site during the early phases of construction to minimize the use of diesel-powered stationary equipment.

Mitigation Measure AQ-3: Require use of low VOC coatings to reduce ROG emissions.

The project shall use low volatile organic compound or VOC (i.e., ROG) coatings, that are below current BAAQMD requirements (i.e., Regulation 8, Rule 3: Architectural Coatings), for at least 60 percent of all residential and nonresidential interior paints and 60 percent of exterior paints. This includes all architectural coatings applied during both construction and reapplications throughout the project's operational lifetime. At least 60 percent of coatings applied must meet a "super-compliant" VOC standard of less than 10 grams of VOC per liter of paint. For reapplication of coatings during the project's operational lifetime, the Declaration of Covenants, Conditions, and Restrictions shall contain a stipulation for low VOC coatings to be used. Examples of "super-

compliant" coatings are contained in the South Coast Air Quality Management District's website.[10]

Effectiveness of Mitigation AQ-2 and AQ-3

The effectiveness of MM AQ-2 and AQ-3 were based on additional modeling. The CalEEMod model was used to estimate the effectiveness of MM AQ-2 using Tier 4 interim construction equipment. In addition, the CalEEMod model was used to estimate the effectiveness of MM AQ-3 using 60 percent interior and exterior super-compliant VOC coatings. These measures together were found to reduce on-site construction ROG emissions by 47-percent and below the significant threshold.

Operational Period Emissions

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

Operational Trip Generation Rates

CalEEMod allows the user to enter specific vehicle trip generation rates. The project-specific daily trip generation rate provided by the traffic consultant was entered into the model.[11] Using ITE Trip Generation Manual, 10th Edition 2017, the project would produce 19,808 daily trips. The daily trip generation estimates were provided for the multifamily housing and the general office building developments and then adjusted to account for *Housing and Employment Mixed-Use Reduction, Housing and Retail Mixed-Use Reduction, Location Based Reduction, and VMT Reduction*. 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. For the City Park land use, it was assumed that there would be no trips because the park/open space area would serve the local area. The default trip lengths and trip types specified by CalEEMod were used.

Traffic trip generation by land use for modeling in CalEEMod was provided by *Hexagon Transportation Consultants, Inc.* based on the ITE Trip Generation Manual, 10th Edition 2017. However, traffic modeling for the project was more accurately portrayed using the CSJ Model. These forecasted trip generation estimates using this model are based on the trip-making characteristics of the proposed land uses and reflect the mode of travel and interaction of trips between land uses and use of non-auto-based modes of travel, including BART. According to the analysis performed by Hexagon, trip generation associated with the project would be 14,239 net daily trips. The mobile emissions generated by CalEEMod were post-processed to reflect the more accurate trip forecasts by multiplying the mobile emissions by the ratio of the CSJ model trip

[10] SCAQMD: http://www.aqmd.gov/home/regulations/compliance/architectural-coatings/super-compliant-coatings
[11] Hexagon Transportation Consultants, Inc., "1655 Berryessa Mixed-Use Development Draft Transportation Analysis", July 6, 2021.

generation to the ITE trip generation, or 0.72.

EMFAC2021 Adjustment

The vehicle emission factors and fleet mix used in CalEEMod are based on EMFAC2017, which is an older CARB emission inventory for on road and off road mobile sources. Since the release of CalEEMod Version 2020.4.0, new emission factors have been produced by CARB. EMFAC2021 became available for use in January 2021. It includes the latest data on California's car and truck fleets and travel activity. The CalEEMod vehicle emission factors were updated with the emission rates from EMFAC2021, which were adjusted with the CARB EMFAC off-model adjustment factors. On road emission rates from 2023 Santa Clara County were used (See *Attachment 3*). More details about the updates in emissions calculation methodologies and data are available in the EMFAC2021 Technical Support Document.[12]

Consumer Product Adjustment

CalEEMod computes emissions associated with consumer products for all land uses, regardless of their types.[13] However, the emission rate in the model has not been updated since the development of CalEEMod in 2011 that used data published in 2008. ROG emissions from consumer products are forecasted to decrease, as shown in the CARB county emissions forecasts for 2010 through 2030. A factor to adjust the ROG consumer was developed based on the change in the per population ROG consumer emissions between 2008 and 2030. Essentially, the 2027 rate is anticipated to be 80 percent of the 2008 rate that CalEEMod uses.

Climate Smart San José

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

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

The California Energy Commission (CEC) updates the California Building Energy Efficiency Standards every three years, in alignment with the California Code of regulations. Title 24 Parts 6 and 11 of the California Building Energy Efficiency Standards and the California Green Building

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

[13] Per the CalEEMod User's Guide: "Consumer products are chemically formulated products used by household and institutional consumers, including, but not limited to, detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products"

Standards Code (CALGreen) address the need for regulations to improve energy efficiency and combat climate change. The 2019 CAL Green standards include some substantial changes intended to increase the energy efficiency of buildings. For example, the code encourages the installation of solar and heat pump water heaters in low-rise residential buildings. The 2019 California Code went before City Council in October 2019 for approval, with an effective date of January 1, 2020. As part of this action, the City adopted a "reach code" that requires development projects to exceed the minimum Building Energy Efficiency requirements.[14] The City's reach code applies only to new residential and non-residential construction in San José. It incentivizes all-electric construction, requires increased energy efficiency and electrification-readiness for those choosing to maintain the presence of natural gas. The code requires that non-residential construction include solar readiness. It also requires additional EV charging readiness and/or electric vehicle service equipment (EVSE) installation for all development types.

Energy

CalEEMod defaults for energy use were used, which include the 2019 Title 24 Building Standards. GHG emissions modeling includes those indirect emissions from electricity consumption. The electricity produced emission rate was modified in CalEEMod. CalEEMod has a default emission factor of 807.98 pounds of CO_2 per megawatt of electricity produced, which is based on San José Clean Energy (SJCE)'s 2021 emissions rate. This intensity factor was used in the model along with the assumption that the project would use electricity supplied by SJCE. SJCE would provide electricity that would be 100-percent carbon free by 2021 before the project becomes operational.[15] Electricity was assumed to be 100-percent carbon free in the model since this project would be operational post-2021. Electricity emissions only affect indirect emission of GHG.

Wood-Burning Devices

CalEEMod default inputs assume new residential construction would include woodburning fireplaces and stoves. The project would not include wood-burning devices, as these devices are prohibited by BAAQMD Regulation 6, Rule 3.[16] Therefore, the number of woodstoves and woodburning fireplaces in CalEEMod were set to zero and assigned as natural gas. Additionally, the City of San José passed an ordinance in December 2020 that prohibits the use of natural gas infrastructure in new buildings.[17] This ordinance applies to any new residential construction starting August 1, 2021. All project natural gas use in residential land uses was set to zero and assigned to electricity use.

[14] City of San José Transportation and Environmental Committee, *Building Reach Code for New Construction Memorandum,* August 2019.
[15] Kerrie Romanow and Rosalynn Hughey, City of San José, 2019. *Building reach Code for New Construction Memorandum*. August. Web: https://sanjose.legistar.com/LegislationDetail.aspx?ID=4090015&GUID=278596A7-1A2B-4248-B794-7A34E2279E85
[16] Bay Area Air Quality Management District, https://www.baaqmd.gov/~/media/dotgov/files/rules/regulation-6-rule-3/documents/20191120_r0603_final-pdf.pdf?la=en
[17] City of San Jose, 2020. "Expand Natural Gas Ban", December. Web: https://www.sanjoseca.gov/Home/Components/News/News/2210/4699

Project Generator

The project proposes to include a stand-by emergency diesel generator in the commercial building. However, the size and location of the emergency generator is unknown at the time of this analysis. Therefore, it was assumed that the ground-floor of the northeast corner of the commercial building would have one emergency diesel generator rated at 1,000 kilowatts (kW) with an approximately 1,341 horsepower (HP) diesel engine. This generator would be tested periodically and power the buildings in the event of a power failure. For modeling purposes, it was assumed that the generator would be operated primarily for testing and maintenance purposes that require about one to two hours per month of operation. CARB and BAAQMD requirements limit these engine operations to 50 hours each per year of non-emergency operation. The modeling assumed that total operation of the generators would be 50 hours per year. The engine would be required to meet CARB and EPA emission standards and consume commercially available California low-sulfur diesel fuel. The generator emissions were modeled using CalEEMod. Additionally, the generator would have to meet BAAQMD BACT requirements for IC Engine-Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump sources. These include emission limits similar to U.S. EPA Tier 4 engines.

Other Inputs

Default model assumptions for emissions associated with solid waste generation and water/wastewater use were applied to the project. Water/wastewater use was changed to 100 percent aerobic conditions to represent wastewater treatment plant conditions. The project site would not send wastewater to septic tanks or facultative lagoons.

Existing Uses

The project site is currently occupied by light industrial uses. The current activity of the site is unknown and traffic generation was not provided for these uses; therefore, this analysis did not consider the emissions from existing uses.

Summary of Computed Operational Emissions

Annual emissions were calculated using CalEEMod and daily emissions were calculated assuming 365 days of operation. As shown in Table 8, operational emissions would exceed the BAAQMD significance thresholds for ROG during operation of the project. This would be a ***significant impact.*** *Implementation of Mitigation Measure AQ-4 and AQ-5 would reduce this impact to a level of less than significant.*

Table 8. Operational Period Emissions

Scenario		ROG	NOx	PM_{10}	$PM_{2.5}$
Unmitigated 2027 Annual Operational Emissions (*tons/year*)		**11.52**	4.25	7.99	2.08
Mitigated 2027 Annual Operational Emissions (*tons/year*)		9.36	3.16	5.62	1.48
BAAQMD Thresholds (tons /year)		*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*	*No*
	Mitigated	***Yes***	*No*	*No*	*No*
Unmitigated 2027 Daily Operational Emissions – (*lbs/day*)[1]		**63.14**	23.26	43.80	11.42
Mitigated 2027 Daily Operational Emissions – (*lbs/day*)[1]		51.26	17.31	30.78	8.12
BAAQMD Thresholds (pounds/day)		*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*	*No*
	Mitigated	*No*	*No*	*No*	*No*
Notes: [1] Assumes 365-day operation.					

Mitigation Measure AQ-4: Require a Transportation Demand Management program to Reduce Operational Period Emissions

The project will be required to implement the Berryessa BART Urban Village Parking and TDM Plan. This plan is targeted to reduce vehicles miles travelled (VMT) and trips by 30 percent. Some of the mandatory TDM measures required to reduce trips and VMT include:

- Program – 1: Transportation Management Association (TMA) – Participate in a few TDM programs provided by an established TMA in a local area such as Downtown and a transit-rich urban village.
- Program – 2: Education, Marketing, and Outreach – Provide employees and/or residents with information on available travel options.
- Program – 3: Transit Pass Subsidy – Provide contributions or incentives towards the equivalent cost of a VTA monthly pass for on-site residents and employees. The monthly contribution or incentives can be spent on VTA/BART/Caltrain fare tickets or monthly passes.
- Parking – 1: Unbundled Parking – Detach the cost of parking from rent or leases.
- Parking – 2: Price Parking – Price parking at hourly or daily rates, and do not provide weekly, monthly, annual, or other long-term parking pass options.

Effectiveness of Mitigation AQ-4

It is assumed that the required TDM elements would reduce vehicle trips by 30 percent. Unmitigated mobile emissions reported using CalEEMod were reduced by 30 percent and reported in Table 8. Mobile ROG emissions would be reduced by 1.93 tons per year or 10.6 pounds per average day.

Mitigation Measure AQ-3: Require use of low VOC coatings to reduce ROG emissions

See Mitigation Measure AQ-3.

Effectiveness of Mitigation AQ-3

During operation, the implementation of MM AQ-3 would reduce total ROG emissions by about 2 percent or 0.2 tons per year. Consumer product and mobile sources would make up a majority of the ROG emissions.

Significant ROG Emissions during Project Operation

When evaluated using the thresholds contained in the 2017 version of the BAAQMD CEQA Air Quality Guidelines the unmitigated project would have significant emissions of ozone precursor pollutants, ROG, during operation. Significant emissions of these pollutants result in a cumulatively considerable net increase of criteria pollutants for which the project region is nonattainment under an applicable ambient air quality standard. Because the project would have emissions of ROG that would exceed emission-based significance thresholds, the project would result in a cumulatively considerable net increase in pollutant emissions that contribute to elevated ozone concentrations that exceed ambient air quality standards.

Ozone is a powerful oxidant that is harmful to public health at high concentrations. Ozone, at high levels, can damage the tissues of the lungs and respiratory tract. High concentrations of ozone irritate the nose, throat, and respiratory system and constrict the airways.[18] Ozone also can aggravate other respiratory conditions such as asthma, bronchitis, and emphysema, causing increased hospital admissions. Repeated exposure to high ozone levels can make people more susceptible to respiratory infection and lung inflammation and permanently damage lung tissue. Ozone can also have negative cardiovascular impacts, including chronic hardening of the arteries and acute triggering of heart attacks. Children are most at risk, as they tend to be active and outdoors in the summer, when ozone levels are highest. Seniors and people with respiratory illnesses are also especially sensitive to ozone's effects. Even healthy adults, working or exercising outdoors during high ozone levels, can be affected. Ozone is not emitted directly from pollution sources. Instead, ozone is formed in the atmosphere through complex chemical reactions in the presence of sunlight between two types of precursor chemicals: hydrocarbons, often referred to as ROG and NOx. As air temperatures rise, the formation of ground-level ozone increases at an accelerated pace. Ozone levels are usually highest on clear, hot, windless summer afternoons, especially in inland valleys that are downwind of pollution sources.

Ozone is a regional pollutant. Emissions of ROG and NOx throughout the Bay Area contribute to ozone formation. Because emissions in one part of the region can impact air quality miles downwind, efforts to reduce ozone levels focus on reducing emissions of ROG and NOx throughout the region. The relationship between ROG and NOx in ozone formation is complex; the ratio between the precursor pollutants influences how ozone forms. BAAQMD's ozone modeling indicates that the Bay Area is "ROG-limited" for ozone formation. This means that reducing ROG emissions in the Bay Area will be more productive in reducing ozone, at least in the near term. However, modeling also suggests that large reductions in NOx emissions will be

[18] See: California Air Resource Board, Web: https://ww2.arb.ca.gov/resources/ozone-and-health[19] Bay Area Air Quality Management District, 2017. *Spare the Air Cool the Climate Final 2017 Clean Air Plan*. April. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en [20] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

needed to achieve the ozone reductions required to attain the current health-based ozone standards. A certain amount of ozone formation occurs naturally, even in the absence of anthropogenic emissions of ROG and NOx.[19]

As stated in the BAAQMD CEQA Air Quality Guidelines, air pollution by its nature is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality is considered significant. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

The project emissions from operation are compared against regional emissions that lead to elevated concentrations of ozone in Table 9. By comparing project emissions to regional emissions, one gets the sense of the magnitude of the project effects on regional air quality. Project operational emissions in comparison to regional emissions are a small portion of the regional inventory (i.e., 0.01 percent unmitigated) that the effect of the project would not cause regional pollutant levels to measurably change. As a result, the project would not measurably increase ozone levels. Therefore, the health effects associated with the project ROG emissions would not be measurable. However, it would increase emissions above the threshold of 54 pounds per average day, such that the emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Table 9. Comparison of Project Emissions to Air Basin Emissions

Scenario	ROG
Bay Area Air Basin in 2015	259 tons/day
Unmitigated Project Operation	0.03 tons/day (11.52 tons/year)
% of Basin	*0.01%*

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

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

Project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. This project operation would increase traffic in the area that would increase

[19] Bay Area Air Quality Management District, 2017. *Spare the Air Cool the Climate Final 2017 Clean Air Plan.* April. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en [20] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

the air pollutant and TAC emissions in the area. In addition, the project would include the installation of an emergency generator powered by diesel engines that would also have TACs and air pollutants emissions.

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

Community Risk Methodology for Construction and Operation

Community risk impacts were addressed by predicting increased cancer risk, the increase in annual $PM_{2.5}$ concentrations and computing the Hazard Index (HI) for non-cancer health risks. The risk impacts from the project are the combination of risks from construction and operation sources. These sources include on-site construction activity, construction truck hauling, stand-by emergency generator operation, and increased traffic from the project. To evaluate the increased cancer risks from the project, a 30-year exposure period is typically used, per BAAQMD guidance,[20] with the residential sensitive receptors being exposed to both project construction and operation emissions during this timeframe.

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

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

Modeled Sensitive Receptors

Receptors for this assessment included locations where sensitive populations would be present for extended periods of time (i.e., chronic exposures). This includes existing residences to the north, west, and east of the project site and future residents at the former Flea Market site to the south, as shown in Figure 2. Residential receptors are assumed to include all receptor groups (i.e., third trimester, infants, children, and adults) with almost continuous exposure to project emissions. At the Genius Kids Berryessa location approximately 550 feet southeast of the project site, infant and child receptors were assumed.

Community Risks from Project Construction – On-Site and Hauling Activity

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute

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

substantially to existing or projected air quality violations. Construction exhaust emissions may 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 community risk assessment of the project's construction activities, which includes on-site construction and hauling activity, was conducted. The assessment evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[21] This assessment included dispersion modeling to predict the off-site concentrations resulting from project construction, so that increased cancer risks and non-cancer health effects could be evaluated.

Construction Emissions

The CalEEMod and EMFAC2021 models provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road construction worker, vendor, and hauling vehicles. Total emissions from all construction stages are reported in Table 10 and are on an annual basis. The annual on-road emissions result from haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used for vehicle travel while at or near the construction site to represent localized vehicle emissions from construction. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions were computed by CalEEMod for the overall construction period and are included as part of the total $PM_{2.5}$ emissions reported in Table 10.

Table 10. Unmitigated Construction Emissions of DPM and Fugitive $PM_{2.5}$ (tons)

Description	2023	2024	2025	2026
PM_{10} Exhaust (DPM)	0.1273	0.0942	0.0827	0.0719
$PM_{2.5}$ Fugitive	0.3026	0.0151	0.0151	0.0134

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors (residences, daycare) 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.[22] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

Combustion equipment DPM exhaust emissions were modeled as a series of point sources with a nine-foot release height (construction equipment exhaust stack height) placed at 115-foot intervals (35 meters) intervals throughout the construction site. This resulted in 134 individual point sources

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

being used to represent mobile equipment DPM exhaust emissions in the construction area, with DPM emissions occurring throughout the project construction site. In addition, the following stack parameters were used: a vertical release, a stack diameter of 2.5 inches, an exhaust temperature of 918˚F, and an exit velocity of 309 feet per second. Since these are point sources, plume rise is calculated by the AERMOD dispersion model. Emissions from vehicle travel on- and off-site were also distributed among the point sources throughout the site. The locations of the point sources used for the modeling are identified in Figure 2.

For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 7 feet (2 meters) was used for the area source. Fugitive dust emissions at construction sites come from a variety of sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources.

AERMOD Inputs and Meteorological Data

The modeling used a 5-year meteorological data set (2013-2017) from the San José International Airport prepared for use with the AERMOD model by the BAAQMD. Construction emissions were modeled as occurring between 7:00 a.m. to 4:00 p.m. Monday through Friday for the entire construction period. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2023-2026 period were calculated using AERMOD. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptor locations. A receptor height of 5 feet (1.5 meters) and 15 feet (4.5 meters) was used to represent the breathing heights of residents on the first and second floors in nearby single-family homes, townhomes, and multi-story residential developments. [23] A receptor height of 3 feet (1 meter) was used to represent the breathing height of infants and children at the daycare.

Summary of Construction Community Risk Impacts

The increased cancer risk calculations were based on applying the BAAQMD recommended age sensitivity factors to the TAC concentrations, as described in *Attachment 1*. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Third trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period. Students at the daycare were assumed to be 2 months and older. The infant (ages 0 through 2 years old) and child (ages 2 through 16 years old) cancer risk parameters were used to calculate the increased cancer risk for the daycare students.

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

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

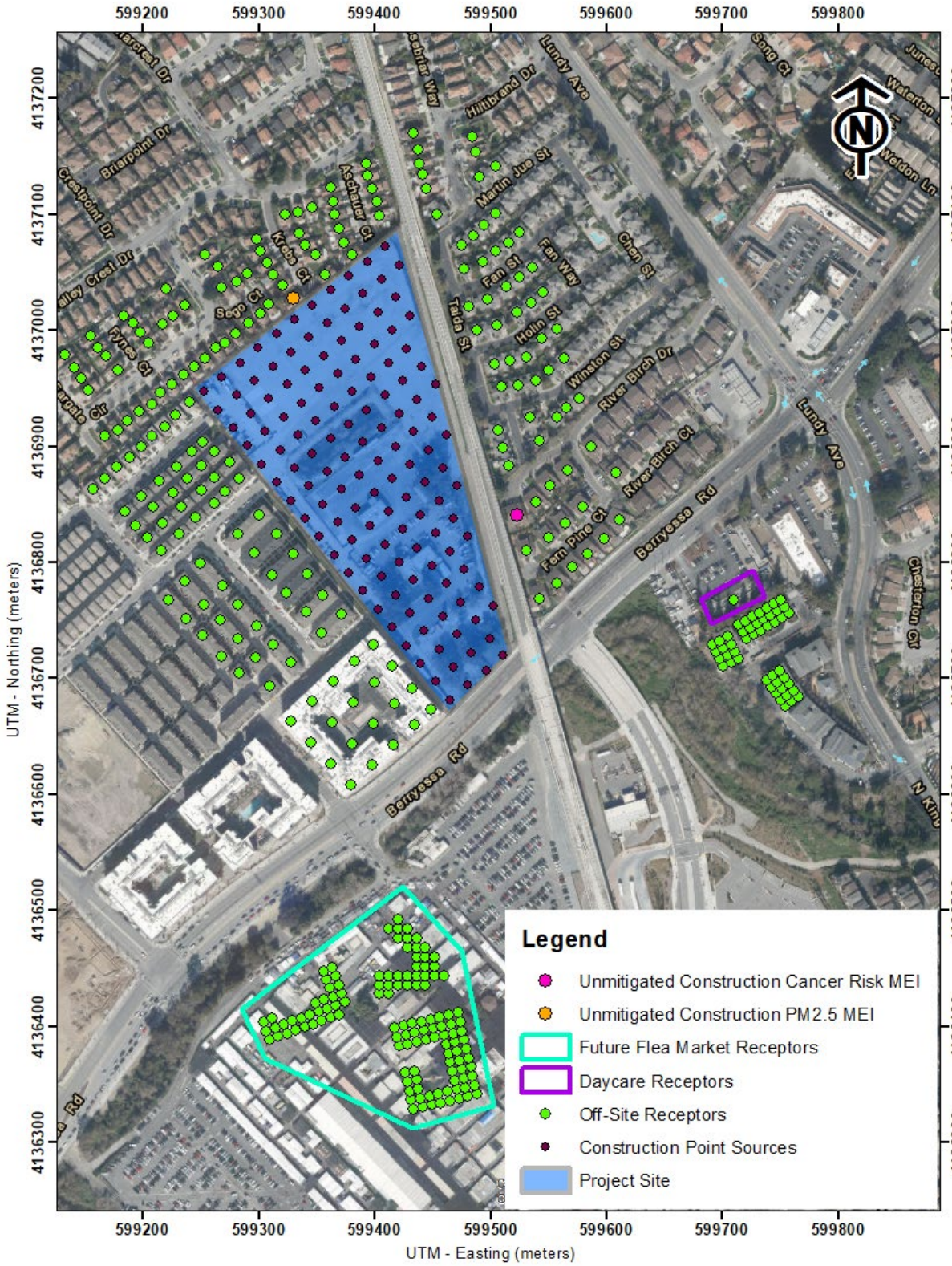
The maximum modeled annual DPM and $PM_{2.5}$ concentrations, which include both the DPM and fugitive $PM_{2.5}$ concentrations, were identified at nearby sensitive receptors to find the MEI. Results of this assessment indicated that the construction MEIs were located in two places. The cancer risk MEI was located at a residence on the first floor (5 feet above ground) to the east of the project site across the BART tracks. The $PM_{2.5}$ concentration MEI was located at an adjacent residence on the first floor (5 feet above ground) to the north of the project site. The locations of the construction MEIs and nearby sensitive receptors are shown in Figure 2. Table 11 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities. *Attachment 4* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

Construction Modeling –Daycare Sensitive Receptors

Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum $PM_{2.5}$ concentrations associated with construction activities at the nearby Genius Kids Berryessa daycare. Genius Kids Berryessa is a daycare and learning facility located at 1682 Berryessa Road that provides programs for infants/children between the ages of 2 months to 12 years old. The facility operates Monday through Friday from 8:00 a.m. to 6:30 p.m. The maximum increased cancer risk at the Genius Kids Berryessa preschool was computed assuming infant and child exposure parameters for 250 days per year to account for when the facility operates. A student adjustment factor was applied since the project construction would be a non-continuous source and the students would not be present during the entire period.[24] Project construction health risks at the school receptor are shown in Table 11.

[24] OEHHA, 2015. *Air Toxics Hot Spot Program*. February. Web: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

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



Community Risks from Project Operation – Traffic and Generators

Operation of the project would have long-term emissions from mobile sources (i.e. traffic) and stationary sources (i.e. generators). While these emissions would not be as intensive at or near the site as construction activity, they would contribute to long-term effects to sensitive receptors.

Project Operational Traffic

An analysis was conducted of the impacts of TACs and $PM_{2.5}$ from local roadways increase in traffic due to the project. The project would generate 14,239 net daily trips.[25] A majority of these trips would be from light-duty, gasoline vehicles (i.e., passenger cars). To address the added community risks, the impact from this traffic was assessed using the CT-EMFAC 2017 emissions model, AERMOD dispersion model and cancer risk calculations following BAAQMD methodology described in *Attachment 1*. Figure 3 shows the modeled roadway segment. The majority of project traffic would exit the neighborhood onto Berryessa Road. Project traffic was also modeled on the project site.

Traffic Emissions

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on Berryessa Road and the project site using the Caltrans version of the EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (e.g., TOG), running evaporative losses for TOG, and tire and brake wear and fugitive road dust for $PM_{2.5}$. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2017 emissions data. Inputs to the model include region (i.e., Santa Clara County), type of road (major/collector), truck percentage for non-state highways in Santa Clara County (3.51 percent),[26] truck mix assigned by CT-EMFAC2017 for the county, year of analysis (2027 – project operational year), and season (annual). For on-site emissions, a 0.25-mile segment length was included in the CT-EMFAC2017. These emissions were applied to an area source, representing travel throughout the entire project site.

Project operation was assumed to begin in 2027 or thereafter. To calculate the increased cancer risk from increased traffic volumes due to the project traffic, the community risks were adjusted for exposure duration to account for the MEIs being exposed to construction for the first 4 years of the 30-year period. The exposure duration from roadway traffic was adjusted for 26 years of exposure (2027-2052). In order to estimate TAC and $PM_{2.5}$ emissions over the exposure period for calculating increased cancer risks to exiting residents from project traffic, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2027. Year 2027 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated (26 years) from the roadway traffic, since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions will decrease in the future.

[25] Hexagon Transportation Consultants, Inc., "1655 Berryessa Mixed-Use Development Draft Transportation Analysis", July 6, 2021.

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

The average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[27] which were then applied to the trip volumes to obtain estimated hourly traffic volumes and emissions for the roadway. For all hours of the day, the average speed of 40 mph on Berryessa Road was assumed for all vehicles based on posted speed limit signs on the roadway, and 25 mph on the project site was assumed for all vehicles based on typical neighborhood speed limits.

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was also conducted using the U.S. EPA AERMOD dispersion model. Eastbound and westbound traffic on Berryessa Road within about 1,000 feet of the project site was evaluated with the model (refer to Figure 3 for road segments modeled). Emissions from vehicle traffic were modeled in AERMOD using a series of volume sources along a line (line volume sources), with line segments used to represent eastbound and westbound travel lanes on the roadway. On- and near-site project traffic emissions were evaluated as an area source within the project site to capture on-site project traffic. This is the same techniques used to model construction traffic emissions. The modeling used a five-year data set (2013-2017) of hourly meteorological data from the San José International Airport prepared by BAAQMD. Other inputs to the model included road and project site geometry, hourly traffic emissions, and the off-site sensitive receptor locations.

Computed Risks and Hazards from Project Traffic

To calculate the increased cancer risk from the project traffic, the exposure duration was adjusted for account for the MEIs being exposed to construction for the first 4 years of the 30-year exposure period. The exposure duration was adjusted for 26 years of exposure. The risks and hazards from the project traffic upon the MEIs and maximum school receptor are shown in Table 11. The emission rates and roadway calculations used in the project impact analysis are shown in *Attachment 4*.

<u>Operational Emergency Generator Modeling</u>

As stated above, the project is assumed to include one 1,000-kW emergency diesel generator powered by a 1,341-HP diesel engine on the ground-floor of the northeast corner of the commercial building. Figure 3 shows the location of the modeled generator.

Operation of a diesel generator would be a source of TAC emissions. The emissions from the operation of the generator were calculated using the CalEEMod model, as previously described. The generator was assumed to operate 50 hours per year. During testing periods, the engine would typically be run for less than one hour under light engine loads. The generator engines would be required to meet EPA emission standards and consume commercially available low sulfur diesel fuel.

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

This diesel engines would be subject to CARB's Stationary Diesel Airborne Toxics Control Measure (ATCM) and require permits from the BAAQMD, since it will be equipped with an engine larger than 50-HP. BACT requirements would apply to these generators that would limit DPM emissions. As part of the BAAQMD permit requirements for toxics screening analysis, the engine emissions will have to meet Best Available Control Technology for Toxics (BACT) and pass the toxic risk screening level of less than ten in a million. The risk assessment would be prepared by BAAQMD. Depending on results, BAAQMD would set limits for DPM emissions (e.g., more restricted engine operation periods). Sources of air pollutant emissions complying with all applicable BAAQMD regulations generally will not be considered to have a significant air quality community risk impact.

Dispersion Modeling

To obtain an estimate of potential cancer risks and $PM_{2.5}$ impacts from operation of the emergency generator the U.S. EPA AERMOD dispersion model was used to calculate the maximum annual DPM concentration at off-site sensitive receptor locations (nearby residences and daycare). The same receptors, breathing heights, and BAAQMD San José International Airport meteorological data used in the construction dispersion modeling were used for the generator model. Stack parameters (stack height, exhaust flow rate, and exhaust gas temperature) for modeling the generators was based on BAAQMD default parameters for emergency generators.[28] Annual average DPM and $PM_{2.5}$ concentrations were modeled assuming that generator testing could occur at any time of the day (24 hours per day, 365 days per year).

Computed Risks and Hazards from Project Generator

Increased cancer risks from use of the generator were calculated using the modeled maximum annual DPM concentrations and BAAQMD recommended risk assessment methods and parameters described in *Attachment 1*. The $PM_{2.5}$ concentration and non-cancerous (i.e. Hazard Index) health risk impacts were also calculated. An exposure duration of 26 years (exposed to construction for the first 4 years) was used to calculate the increased cancer risk from the generator. The results are also listed in Table 11. The emissions and health risk calculations for the proposed generators are included in *Attachment 4*.

Project Traffic and Generator Modeling –Daycare Sensitive Receptors

The risks and hazards from the project traffic and generator were also modeled at the Genius Kids Berryessa location. The same sources, meteorological data, and operation emissions were used to model the project traffic and generator risk impacts at the daycare. A breathing height of 3 feet (1 meter) was assumed for the students. For the students (infants and children) at the facility, the exposure period would be 12 years. They would be exposed to the project emissions during the last 8 years of the exposure period (exposed to construction for the first 4 years). The maximum increased cancer risk at the Genius Kids Berryessa daycare was computed assuming infant exposure for 250 days per year. Table 11 lists the project traffic and generator risk and hazards at the daycare.

[28] The San Francisco Community Risk Reduction Plan: Technical Support Document, BAAQMD, San Francisco Dept. of Public Health, and San Francisco Planning Dept., December 2012

Summary of Project-Related Community Risks at Off-Site Project MEIs

For this project, the sensitive receptor identified in Figure 2 as the increased cancer risk construction MEI is not the cancer risk project MEI since the adjacent receptor to the south is exposed to a higher cancer risk from combined construction and project operation. The unmitigated cancer risk MEI would be exposed to 4 years of construction cancer risks and 26 years of operational (includes traffic and emergency backup generator) cancer risks. The cancer risks from construction and operation of the project were summed together. The annual $PM_{2.5}$ concentration and HI values are based on annual maximum levels for the entirety of the project. Therefore, the construction and operational period $PM_{2.5}$ MEI are the same. The MEI locations are identified in Figure 3.

As shown in Table 11, the unmitigated maximum cancer risks and annual $PM_{2.5}$ concentration from construction and operation activities would exceed the single-source significance thresholds. Implementation of *Mitigation Measures AQ-1 and AQ-2* would reduce the cancer risk and annual $PM_{2.5}$ concentration below the BAAQMD single-source significance thresholds. The HI from unmitigated construction and operation activities would not exceed the single-source significance threshold. .

The proposed mitigation only affects the construction impacts on the off-site receptors and not project operational impacts. Once the project construction risk and hazard impacts are reduced, the project operational impacts become the predominant impact and change the location of the project MEI. The mitigated project MEI, for both cancer risk and $PM_{2.5}$ concentration, are the residents in the adjacent home southeast of the project site across the BART tracks. Increased cancer risk, annual $PM_{2.5}$ concentrations, and HI with *Mitigation Measures AQ-1 and AQ-2* are below thresholds. The location of the mitigated project MEI is shown in Figure 3.

Summary of Project-Related Community Risks at Daycare

Table 11 also lists the increased cancer risk, $PM_{2.5}$ concentration and HI value from construction and operation of the project at the Genius Kids Berryessa daycare. Infant and child exposure was assumed for the Genius Kids Berryessa daycare. The unmitigated cancer risks from construction and operation activities would exceed the single-source significance thresholds. The non-cancerous hazards (i.e. $PM_{2.5}$ and HI) from construction and operation activities would not exceed the single-source significance threshold, unmitigated or mitigated. However, with the implementation of *Mitigation Measures AQ-1 and AQ-2*, the mitigated increased cancer risk would no longer exceed the BAAQMD single-source significance threshold.

Table 11. Construction and Operation Risk Impacts at the Off-Site Project MEIs and Daycare Receptors

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Construction (Years 0-4)	Unmitigated MEIs	**23.38 (infant)**	**0.40**	0.01
	Mitigated MEI*	4.67 (infant)	0.09	<0.01
Project Traffic on Berryessa Road and Project Site (Years 5-30)				
	Unmitigated MEIs	0.77 (infant)	0.21	<0.01
	Mitigated MEI	1.01 (infant)	0.21	<0.01
Project Generators (Years 5-30)	Unmitigated MEIs	0.04 (infant)	<0.01	<0.01
	Mitigated MEI	0.24 (infant)	<0.01	<0.01
Total/Maximum Project Impact (Years 0-30)	Unmitigated MEIs	**24.19 (infant)**	**0.40**	0.01
	Mitigated MEI*	5.92 (infant)	0.21	<0.01
BAAQMD Single-Source Threshold		***10.0***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated MEIs	***Yes***	***Yes***	*No*
	Mitigated MEI*	*No*	*No*	*No*
Genius Kids Berryessa Daycare Infant Receptor				
Project Construction (Years 0-4)	Unmitigated	**17.92 (infant)**	0.08	<0.01
	Mitigated*	3.69 (infant)	0.02	<0.01
Project Traffic (Years 5-12)		1.31	0.11	0.02
Project Generator (Years 5-12)		0.06	<0.01	<0.01
Unmitigated Total/Maximum Project (Years 0-4)	Unmitigated	**19.29 (infant)**	0.11	0.02
	Mitigated*	5.06 (infant)	0.11	0.02
BAAQMD Single-Source Threshold		***10.0***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated*	*No*	*No*	*No*

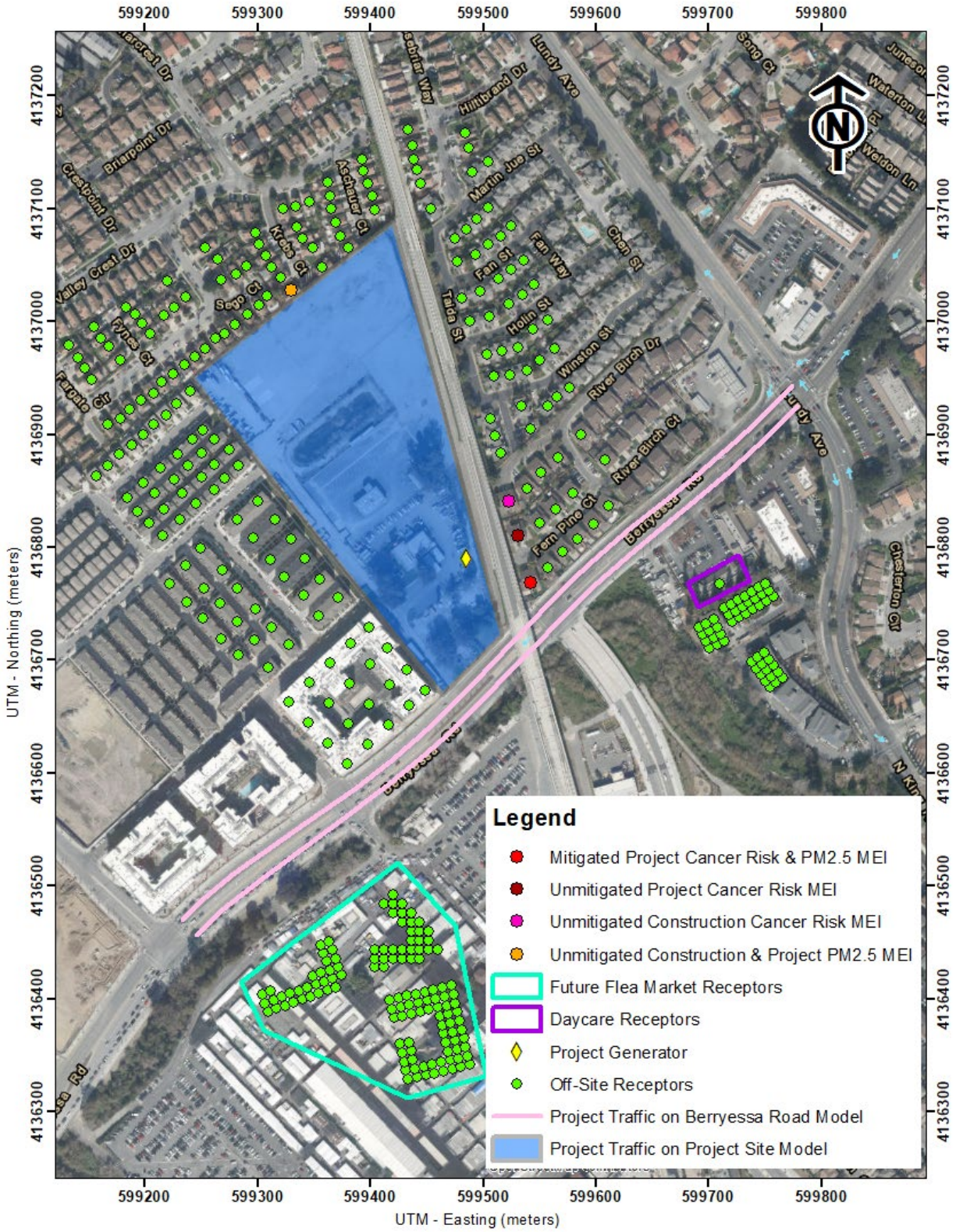
* Construction equipment with Tier 4 engines and enhanced BMPs as Mitigation.

Mitigation: Implement Mitigation Measures AQ-1 and AQ-2

Effectiveness of Mitigation Measures AQ-1 and AQ-2

CalEEMod was used to compute mitigated emissions assuming that all equipment larger than 25 horsepower met U.S. EPA Tier 4 standards along with enhanced BAAQMD best management practices for construction were included. With these mitigation measures implemented, the project's construction cancer risk levels (assuming infant exposure) would be reduced by 80 percent to 4.67 chances per million for the residential MEI and 3.69 chances per million for the daycare MEI. The project's annual $PM_{2.5}$ concentrations from construction would be reduced by 78 percent to 0.09 $\mu g/m^3$ at the residential MEI and 0.02 µg/m3 at the daycare MEI. The mitigated project's risk impacts from construction would not exceed the BAAQMD single-source significance thresholds.

Figure 3. Locations of Modeled Project Traffic, Project Generator, Off-Site Sensitive Receptors, and Construction and Project Maximum TAC Impacts



Cumulative Impact of All TAC Sources on the Offsite Project MEI

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site (i.e. influence area). These sources include rail lines, freeways or highways, busy surface streets, and stationary sources identified by BAAQMD. A review of the project area indicates that traffic on Berryessa Road and Lundy Avenue exceed 10,000 vehicles per day. Other nearby streets are assumed to have traffic volumes less than 10,000 vehicles per day. A review of BAAQMD's stationary source Google Earth map tool identified two stationary sources with the potential to affect the project MEIs. Figure 4 shows the location of the sources affecting the MEIs. Community risk impacts from these sources upon the MEIs reported in Table 12. Details of the modeling and community risk calculations are included in *Attachment 5*.

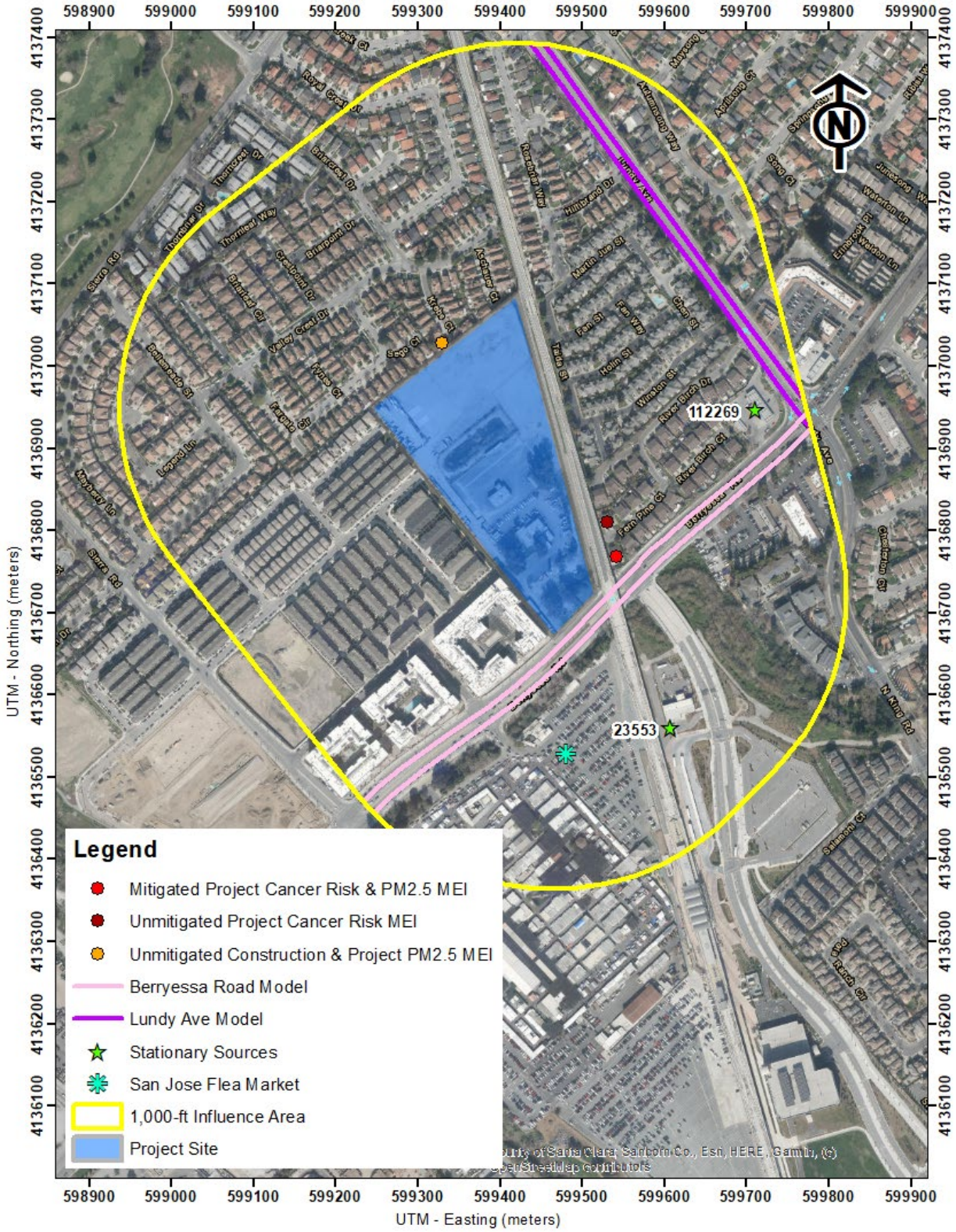
Local Roadways – Berryessa Road and Lundy Avenue

The same inputs (with the exception of ADT on Berryessa Road) and modeling done to compute the risks and hazards risks from project traffic on Berryessa Road was conducted to assess cumulative traffic impacts on the unmitigated and mitigated project MEIs. In addition, cumulative traffic on Lundy Avenue was also modeled. An exposure period of 30-years was used instead of a 26-year exposure period, and a start year of 2023 since the existing off-site receptors are already exposed to traffic along these local roadways. The ADT on Berryessa Road and Lundy Avenue were based on AM and PM peak-hour cumulative traffic volumes for the nearby roadway provided by the project's traffic consultant.[29] Assuming a 1 percent per year increase, the predicted ADT on Berryessa Road would be 35,574 vehicles and the ADT on Lundy Avenue would be 18,590 vehicles. For all hours of the day, an average speed of 40 mph on Berryessa Road and Lundy Avenue was assumed for all vehicles based on posted speed limit signs on the roadways.

The cancer risk, $PM_{2.5}$ concentration, and HI impacts from Berryessa Road and Lundy Avenue on the project MEIs are shown in Table 12. Figure 4 shows the roadway links used for the modeling and receptor locations where concentrations were calculated. Details of the emission calculations, dispersion modeling and cancer risk calculations for the receptors with the maximum cancer risk from Berryessa Road and Lundy Avenue traffic are provided in *Attachment 5*.

[29] Hexagon Transportation Consultants, Inc., "1655 Berryessa Mixed-Use Development Draft Transportation Analysis", July 6, 2021.

Figure 4. Project Site and Nearby Existing TAC and $PM_{2.5}$ Sources



BAAQMD Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2018* GIS website,[30] which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for new OEHHA guidance. Two sources were identified using this tool with one source being diesel generator and one being a gas dispensing facility. The BAAQMD GIS website provided screening risks and hazards for this source, so a stationary source information request was not required to be submitted to BAAQMD.

The screening level risks and hazards provided by BAAQMD for the stationary sources were adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines and Gasoline Dispensing Facility*. Community risk impacts from the stationary sources upon the MEI are reported in Table 12.

Construction Risk Impacts from Nearby Developments

From the City's website,[31] the following planned or approved projects are located within 1,000 feet of the proposed project:

- **San Jose Flea Market** – this project is located at 1590 Berryessa Road, which is located just south of the project site opposite Berryessa Road. This project has been approved and would consist of up to 3,450 residential units and 3.4 million sf of commercial sf on a 60.7 gross acre site. While the construction schedule is unknown at this time, construction could occur simultaneously.

The mitigated construction risks and hazard impact values for this development was available from their air quality technical report conducted by *Illingworth & Rodin, Inc*.[32] For the purpose of this analysis, it was conservatively assumed the entire construction period from the proposed project would overlap with the nearby development's construction schedule. This approach likely provides an overestimate of the community risk and hazard levels because it assumes that maximum impacts from the nearby development occurs concurrently with the proposed project at the proposed project's MEIs. The mitigated construction risks reported in that air quality assessment were included in the cumulative risks Table 12.

Summary of Cumulative TAC Risks at the Off-Site Project MEIs

Table 12 reports both the project and cumulative community risk impacts at the unmitigated and mitigated project MEIs. The project would have an exceedance with respect to community risk caused by project construction and operation activities, since the maximum unmitigated cancer risk and $PM_{2.5}$ concentration exceeds the BAAQMD single-source thresholds. The combined increased cancer risk, annual $PM_{2.5}$ concentration, and HI values at the unmitigated and mitigated

[30] BAAQMD, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65
[31] City of San Jose, Private / Key Economic Development Projects Map, Web: https://gis.sanjoseca.gov/maps/devprojects/
[32] Illingworth & Rodkin, Inc., *Market Park South Village Development Air Quality, Community Risk & Greenhouse Gas Assessment*, September 17, 2020.

project MEIs would not exceed the BAAQMD cumulative source thresholds. The project would not contribute to a cumulative increase in TAC emissions within the local area.

Table 12. Impacts from Cumulative TAC Sources at Off-Site MEIs

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Total/Maximum Project Impact	Unmitigated MEIs	**24.19 (infant)**	**0.40**	0.01
	Mitigated MEI	5.92 (infant)	0.21	<0.01
BAAQMD Single-Source Threshold		***10.0***	***0.3***	***0.1***
Berryessa Road, ADT 35,574	Unmitigated MEIs	2.00	0.03	<0.01
	Mitigated MEI	3.54	0.31	<0.01
Lunday Avenue, ADT 18,590	Unmitigated MEIs	0.09	0.01	<0.01
	Mitigated MEI	0.07	<0.01	<0.01
Santa Clara VTA (Plant #23553, Generator)				
Unmitigated: Cancer MEI 830 feet, $PM_{2.5}$ MEI +1,000 feet		0.28	<0.01	<0.01
Mitigated MEI: 700 feet		0.39	-	<0.01
Berryessa Shell (Plant #112269, Gas Dispensing Facility)				
Unmitigated: Cancer MEI 575 feet, $PM_{2.5}$ MEI +1,000 feet		1.09	<0.01	<0.01
Mitigated MEI: 640 feet		0.92	-	<0.01
San Jose Flea Market Mitigated Construction Emissions – 175 feet south of project site		<6.30	<0.02	<0.01
Combined Sources	Unmitigated MEIs	<33.95	<0.48	<0.06
	Mitigated MEI	<17.14	<0.57	<0.06
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated MEIs	*No*	*No*	*No*
	Mitigated MEI	*No*	*No*	*No*

Non-CEQA Impacts: Exposure of Project Residents to Existing TACs Source

A health risk assessment was completed to analyze the impact existing TAC sources would have on the new proposed sensitive receptors (i.e., residents) that that project would introduce. Per *CBIA v. BAAQMD,* lead agencies are not required to analyze the impacts of existing conditions on a project's future residents. The City requires health risk assessments for new residential developments near sources of air pollution. Where risks are above thresholds, the City encourages the use of proper actions to reduce exposures. General Plan policies related to the exposure of new sensitive receptors to existing TAC sources are as follows:

MS-11.1 Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution such as freeways and industrial uses. Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety.

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

MS-11.5 Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses.

The same TAC sources identified to describe project impacts were used in this health risk assessment. Figure 5 shows the nearby TAC sources and the on-site residential sensitive receptors that would be introduced by the project. All results are listed in Table 13. *Attachment 5* includes the dispersion modeling and risk calculations for TAC source impacts upon the proposed on-site sensitive receptors.

<u>Local Roadways – Berryessa Road and Lundy Avenue</u>

The roadway analysis for on-site impacts was conducted in the same manner as described above in the cumulative traffic dispersion modeling section. The project set of receptors were placed in the project residential buildings and in the multi-family buildings were spaced every 23 feet (7 meters). Additionally, a breathing height of 5 feet (1.5 meters) and 15 feet (4.5 meters) were used since the residences would be located on the first and second floors of the residential developments. Project sensitive receptors higher than the second floor were assumed to have roadway impacts similar or less than those on the second floor. The portions of Berryessa Road and Lundy Avenue included in the modeling are shown in Figure 5 along with the project site and receptor locations where impacts were modeled.

Maximum increased cancer risks were calculated for the residents at the project site using the maximum modeled TAC concentrations. A 30-year exposure period was used in calculating cancer risks assuming the residents would include third trimester pregnancy and infants/children and were assumed to be in the new residential building areas for 24 hours per day for 350 days per year. The highest impacts from Berryessa Road occurred on the first-floor receptor of a unit in the southeast

corner of the project's multi-family residential building closest to Berryessa Road. The highest impacts from Lundy Avenue occurred on the first-floor receptor of a single-family home in the northeast corner of the project site closest to Lunday Avenue. Cancer risks associated with Berryessa Road and Lundy Avenue are greatest closest to the roadways and decrease with distance from the roads. The roadway community risk impacts at the project site are shown in Table 13. Details of the emission calculations, dispersion modeling, and cancer risk calculations are contained in *Attachment 5*.

Stationary Sources

The stationary source screening analysis for the new project sensitive receptors was conducted in the same manner as described above for the project MEIs. Table 13 shows the health risk assessment results from the stationary sources.

Construction Risk Impacts from Nearby Developments

This assessment assumes that construction of the nearby San Jose Flea Market development could be delayed and occur after this project is constructed. The same mitigated construction risks from this project that were included in the cumulative table for the on-site project sensitive receptors were applied to this analysis. However, the on-site project sensitive receptors would likely be only exposed to a portion of the construction from the nearby development, as opposed to the project MEIs which could be exposed to the entire portion of the nearby development's construction. Therefore, the construction risks from the nearby development are anticipated to be lower at the proposed on-site project sensitive receptors.

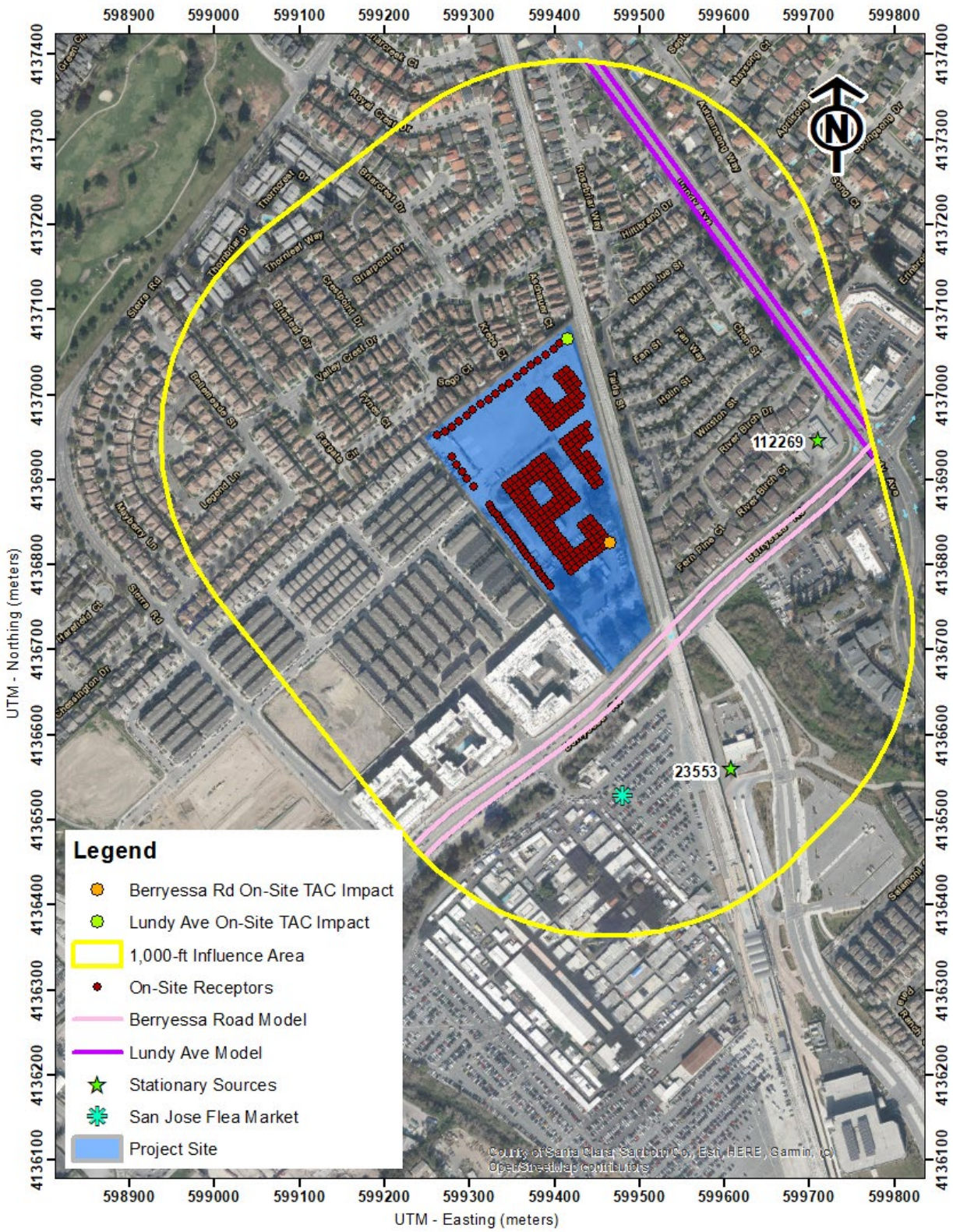
Cumulative Community Health Risk at Project Site

Community risk impacts from the existing and project TAC sources upon the project site are reported in Table 13. The risks from the singular TAC sources are compared against the BAAQMD single-source threshold. The risks from all the sources are then combined and compared against the BAAQMD cumulative-source threshold. As shown, none of the sources exceed the single-source or cumulative-source thresholds.

Table 13. Impacts from Cumulative TAC Sources at the Project Site

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Berryessa Road, ADT 35,574	1.20	0.09	<0.01
Lunday Avenue, ADT 18,590	0.18	0.01	<0.01
Santa Clara VTA (Plant #23553, Generator) Project Site: 950 feet	0.22	<0.01	<0.01
Berryessa Shell (Plant #112269, Gas Dispensing Facility) Project Site: 700 feet	0.78	-	<0.01
San Jose Flea Market Mitigated Construction Emissions – 175 feet south of project site	<6.30	<0.02	<0.01
BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	*No*	*No*	*No*
Cumulative Total	<8.68	<0.13	<0.05
BAAQMD Cumulative Source Threshold	***100***	***0.8***	***10.0***
Exceed Threshold?	*No*	*No*	*No*

Figure 5. Onsite Receptors and Nearby Existing and Project TAC and $PM_{2.5}$ Sources



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. Also included are any modeling assumptions.

Attachment 3 includes the EMFAC2021 emissions modeling. The input files for these calculations are voluminous and are available upon request in digital format.

Attachment 4 is the 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 Contaminants (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[33] 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.[34] 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.[35] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

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

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). However, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD. For school children a 9-year exposure period is recommended by the BAAQMD.

Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, 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

[33] 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.
[34] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[35] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile 8-hour breathing rates for moderate intensity.

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

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

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

Where:

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

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

Where:

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

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

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

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

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

Non-Cancer Hazards

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

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

Annual $PM_{2.5}$ Concentrations

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

Attachment 2: CalEEMod Input Assumptions and Outputs

Air Quality/Noise Construction Information Data Request

Project Name: 1655 Berryessa Road

See Equipment Type TAB for type, horsepower and load factor

Complete ALL Portions in Yellow

Project Size	803 Apts, 23 Townhomes, 24 Single Family	Dwelling Units	total project acres disturbed
	709,205 Apts	s.f. residential	
	15,000	s.f. Restaurant	
	465,000	s.f. Medical office	
	0.9	acre Park	
		s.f. parking garage	2105 spaces
		s.f. parking lot	spaces
Construction Hours		am to	pm

Pile Driving? Y/N?

Project include on-site GENERATOR OR FIRE PUMP during project OPERATION? Y/N? _Y___

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: ____1000kw, 1341hp_____

Fuel Type: _____diesel_____

Location in project (Plans Desired if Available):

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

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
	Demolition	**Start Date:**	**4/3/2023**	**Total phase:**	**50**			**Overall Import/Export Volumes**
		End Date:	**6/9/2023**					
1	Concrete/Industrial Saws	81	0.73	8	50	8	23652	**Demolition Volume**
3	Excavators	158	0.38	8	50	8	72048	Square footage of buildings to be demolished
2	Rubber-Tired Dozers	247	0.4	8	50	8	79040	(*or* total tons to be hauled)
	Tractors/Loaders/Backhoes	97	0.37			0	0	**16,500** square feet *or*
	Other Equipment?							**?** Hauling volume (tons)
								Any pavement demolished and hauled? **? tons**
	Site Preparation	**Start Date:**	**6/10/2023**	**Total phase:**	**30**			
		End Date:	**7/21/2023**					
	Graders	187	0.41			0	0	
3	Rubber Tired Dozers	247	0.4	8	30	8	71136	
4	Tractors/Loaders/Backhoes	97	0.37	8	30	8	34454	
	Other Equipment?							
	Grading / Excavation	**Start Date:**	**7/22/2023**	**Total phase:**	**75**			
		End Date:	**11/3/2023**					**Soil Hauling Volume**
2	Excavators	158	0.38	8	75	8	72048	Export volume = **165,000** cubic yards?
1	Graders	187	0.41	8	75	8	46002	Import volume = **10,000** cubic yards?
1	Rubber Tired Dozers	247	0.4	8	75	8	59280	
2	Scrapers	367	0.48	8	75	8	211392	
2	Tractors/Loaders/Backhoes	97	0.37	8	75	8	43068	
	Other Equipment?							
	Trenching/Foundation	**Start Date:**	**7/22/2023**	**Total phase:**	**75**			
		End Date:	**11/3/2023**					
1	Tractor/Loader/Backhoe	97	0.37	8	75	8	21534	
1	Excavators	158	0.38	8	75	8	36024	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**11/4/2023**	**Total phase:**	**740**			**Cement Trucks? _?_ Total Round-Trips**
		End Date:	**9/4/2026**					
1	Cranes	231	0.29	7	740	7	347008	Electric? (Y/N) ___ Otherwise assumed diesel
3	Forklifts	89	0.2	8	740	8	316128	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	740	8	367987	Or temporary line power? (Y/N) ___
3	Tractors/Loaders/Backhoes	97	0.37	7	740	7	557731	
1	Welders	46	0.45	8	740	8	122544	
	Other Equipment?							
	Building - Interior/Architectural Coating	**Start Date:**	**9/5/2026**	**Total phase:**	**55**			
		End Date:	**11/20/2026**					
1	Air Compressors	78	0.48	6	55	6	12355	
	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**9/5/2026**	**Total phase:**	**55**			
		Start Date:	**11/20/2026**					
	Cement and Mortar Mixers	9	0.56			0	0	
2	Pavers	130	0.42	8	55	8	48048	**Asphalt? ___ cubic yards or ____ round trips?**
2	Paving Equipment	132	0.36	8	55	8	41818	
2	Rollers	80	0.38	8	55	8	26752	
	Tractors/Loaders/Backhoes	97	0.37			0	0	
	Other Equipment?							

Equipment types listed in "Equipment Types" worksheet tab.

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

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Complete one sheet for each project component

Facchino Trip Generation Estimates - *adjusted by I&R for CalEEMod Input*

Land Use (LU)	% of Vehicle Mode Share	VMT Existing	VMT Project	Reduction %	Size	Daily Rate	Daily Trip	Adjusted for CalEEMod Input			CalEEMod Trips	
Using ITE Trip Rates								***Weekday***	***Saturday***	***Sunday***		
Multifamily Housing (Low-Rise) (ITE LU 220)					803 Dwelling Units	7.32	5,878	**5.39**	**4.86**	**4.05**	4,328	6,322
Single-Family Detached Housing (ITE LU 210)					47 Dwelling Units	9.44	444	**6.95**	**7.02**	**6.30**	327	4,655
Housing and employment mixed-use reduction[1]				3%			-190					73.63%
Housing and retail mixed-use reduction[2]				15%			-252					
Location based reduction[3]	88%			12%			-706					
VMT reduction[4]		12.76	11.48	*10.03%*			-519					
Medical-Dental Office Building (ITE LU 720)					465,000 Square Feet	34.80	16,182	**29.98**	**7.38**	**1.22**	13,941	16,182
Housing and employment mixed-use reduction[1]				3%			-190					**13,941**
Location based reduction[3]	92%			8%			-1,279					86.15%
VMT reduction[4]		13.52	12.81	*5.25%*			-772					
High-Turnover (Sit-Down) Restaurant (ITE LU 932)					15,000 Square Feet	112.18	1,683	**83.92**	**91.56**	**106.70**	1,259	1,683
Housing and retail mixed-use reduction[1]				15%			-252					**1,259**
Location based reduction[3]	88%			12%			-172					74.81%
43% PM Pass-by Reduction[5]							-47	*CalEEMod passby adjustment applied*				
Total Proposed Project Trips							**19,808**				**19,855**	
Travel Demand Forecasting Model[6]							**16,179**					
Housing and employment mixed-use reduction[6]							-1,939					
Net Project Trips							**14,239**					
Difference (Model - ITE)							**-5,569**					

Source: ITE Trip Generation Manual, 10th Edition 2017

[1]As prescribed by the VTA Transportation Impact Analysis Guidelines (October 2014), the maximum trip reduction for a mixed-use development project with housing and employment components is equal to 3% off the smaller trip generator.

[2]As prescribed by the VTA Transportation Impact Analysis Guidelines (October 2014), the maximum trip reduction for a mixed-use development project with housing and retail components is equal to 15% off the smaller trip generator.

[3]The project site is located within a suburban with multi-family homes area based on the City of San Jose VMT Evaluation Tool (February 29, 2019). The location-based vehicle mode shares are obtained from Table 6 of the City of San Jose Transportation Analysis Handbook (April 2018). The trip reductions are based on the percent of mode share for other modes of travel beside vehicle.

[4]Existing and project VMTs were estimated using the VMT VMT Evaluation Tool. It is assumed that every percent reduction in VMT is equivalent to one percent reduction in peak-hour vehicle trips.

[5]PM peak-hour passerby reduction rates obtained from the ITE Trip Generation Handbook , Third Edition.

[6]Peak-hour trip estimates and mixed-use reductions were based on the City of San Jose travel demand forecasting model runs completed in May 2021 by Hexagon Transportation Consultants. ADT trip estimate was based on the ratio between daily trips vs the total of AM and PM peak hour trips estimated using ITE's trip rates multiplied by the total AM and PM peak hour trips estimated by the model.

AREA	SRC_TYPE	CATEGORY	SUBCATEGORY	POLLUTANT	SEASON	CONTROL_TYPE	2008	2010	2030	v1.05_RF1160
SANTA CLARA	AREAWIDE	SOLVENT EVAPORATION	CONSUMER PRODUCTS	ROG	ANNUAL AVERAGE	GROWN AND CONTROLLED	11.5533	10.4949	11.2269	v1.05_RF1160

							Interpolated
			2008	2010	2030	**2027**
Consumer Products		ROG	11.5533	10.495	11.227	**11.1172**
		Population	1,790,185	1,790,185	2,223,743	**2,158,709**
		Rate	0.006453691	0.005862523	0.005048695	**0.005170769**
				0.908398466	0.782295788	**80%**
					0.861181317	
			CalEEMod	0.0000214		
			Adjusted	0.00001712		
				0.8		

1655 Berryessa - Unmitigated

Construction Criteria Air Pollutants

Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	CO2e
Year	Tons				MT
Construction Equipment					
2023	0.27	2.65	0.12	0.11	416.45
2024	0.19	1.76	0.08	0.08	305.52
2025	0.18	1.63	0.07	0.06	304.43
2026	8.29	1.37	0.06	0.06	268.98
EMFAC					
2023	0.36	1.29	0.09	0.04	1293.58
2024	0.48	1.74	0.12	0.05	1734.24
2025	0.48	1.73	0.12	0.05	1729.51
2026	0.43	1.54	0.11	0.05	1535.23
Total Construction Emissions by Year					
2023	0.63	3.94	0.21	0.15	1710.02
2024	0.68	3.50	0.20	0.13	2039.76
2025	0.66	3.36	0.19	0.12	2033.94
2026	8.72	2.91	0.17	0.10	1804.22
	Total Construction Emissions				
Tons	10.68	13.70	0.78	0.49	7587.94

Pounds/Workdays	*Average Daily Emissions*				Workdays
2023	6.42	40.39	2.15	1.50	**195**
2024	5.17	26.72	1.57	0.97	**262**
2025	5.07	25.73	1.48	0.89	**261**
2026	75.25	25.10	1.47	0.87	**232**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**	
	Total Construction Emissions				
Pounds	91.91	117.95	6.66	4.22	0.00
Average	22.50	28.86	1.64	1.03	0.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**	

Operational Criteria Air Pollutants

Unmitigated	ROG	NOX	Total PM10	Total PM2.5
Year	Tons			
Area	4.98	0.07	0.04	0.04
Energy	0.06	0.52	0.04	0.04
Mobile	8.93	5.03	11.00	2.79
Mobile adjustment*	-2.50	-1.41	-3.08	-0.78
Stationary	0.06	0.03	0.00	0.00
*Adjustment for traffic modeling				
Total	11.52	4.25	7.99	2.08
	Existing Use Emissions			
Total				
	Net Annual Operational Emissions			
Tons/year	11.52	4.25	7.99	2.08
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**
	Average Daily Emissions			
Pounds Per Day	63.14	23.26	43.80	11.42
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**

Category	**CO2e**

1655 Berryessa - With Tier 4, enhanced BMPs, and VOC Coating Mitigation

Construction Criteria Air Pollutants

Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	CO2e
Year	Tons				MT
Construction Equipment					
2023	0.08	1.60	0.01	0.01	416.45
2024	0.07	1.43	0.01	0.01	305.52
2025	0.07	1.42	0.01	0.01	304.43
2026	3.74	1.27	0.01	0.01	268.98
EMFAC					
2023	0.36	1.29	0.09	0.04	1293.58
2024	0.48	1.74	0.12	0.05	1734.24
2025	0.48	1.73	0.12	0.05	1729.51
2026	0.43	1.54	0.11	0.05	1535.23
Total Construction Emissions by Year					
2023	0.44	2.89	0.10	0.05	1710.02
2024	0.55	3.17	0.14	0.06	2039.76
2025	0.55	3.15	0.14	0.06	2033.94
2026	4.17	2.81	0.12	0.05	1804.22
	Total Construction Emissions				
Tons	5.72	12.02	0.49	0.22	7587.94

Pounds/Workdays	*Average Daily Emissions*				Workdays
2023	4.51	29.64	1.04	0.48	**195**
2024	4.24	24.19	1.04	0.47	**262**
2025	4.23	24.18	1.04	0.47	**261**
2026	36.03	24.24	1.03	0.46	**232**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**	
	Total Construction Emissions				
Pounds	49.00	102.24	4.14	1.89	0.00
Average	12.05	25.32	1.03	0.47	0.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**	

Operational Criteria Air Pollutants

Unmitigated	ROG	NOX	Total PM10	Total PM2.5
Year	Tons			
Area	4.74	0.07	0.04	0.04
Energy	0.06	0.52	0.04	0.04
Mobile	8.93	5.03	11.00	2.79
Mobile adjustment*	-2.50	-1.41	-3.08	-0.78
Mobile TDM adjustment	-1.93	-1.09	-2.38	-0.60
Stationary	0.06	0.03	0.00	0.00
*Adjustment for traffic modeling				
Total	9.36	3.16	5.62	1.48
	Existing Use Emissions			
Total				
	Net Annual Operational Emissions			
Tons/year	9.36	3.16	5.62	1.48
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**
	Average Daily Emissions			
Pounds Per Day	51.26	17.31	30.78	8.12
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**

Category	**CO2e**

	Project	Existing	Project 2030	Existing
Area	11			
Energy	571			
Mobile	10350			
Mobile adjustment*	-2898			
Waste	2821			
Water	369			
TOTAL	11224	0.00	0.00	0.00
Net GHG Emissions		11223.62		0.00
Service Population	3869			
Per Capita Emissions		2.90		0.00
	850	units	480	ksf commercial
CA DOF 2020 =	3.14	pphh	2.5	emp/ksf

	Project	Existing	Project 2030	Existing
Area	11			
Energy	571			
Mobile	10350			
Mobile adjustment*	-2898			
Mobile TDM adjustment	-2236			
Waste	2821			
Water	369			
TOTAL	8988	0.00	0.00	0.00
Net GHG Emissions		8988.01		0.00
Service Population	3869			
Per Capita Emissions		2.32		0.00
	850	units	480	ksf commercial
CA DOF 2020 =	3.14	pphh	2.5	emp/ksf

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

1655 Berryessa Mixed Use

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	465.00	1000sqft	10.67	465,000.00	0
Enclosed Parking with Elevator	2,105.00	Space	0.00	842,000.00	0
City Park	0.90	Acre	0.90	39,204.00	0
High Turnover (Sit Down Restaurant)	15.00	1000sqft	0.34	15,000.00	0
Apartments Mid Rise	803.00	Dwelling Unit	21.13	709,205.00	2297
Condo/Townhouse	23.00	Dwelling Unit	1.44	23,000.00	66
Single Family Housing	24.00	Dwelling Unit	7.79	43,200.00	69

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2027
Utility Company	San Jose Clean Energy				
CO2 Intensity (lb/MWhr)	807.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Square footages of apartments from plan sheet

Construction Phase - Added Trenching

Off-road Equipment - Trenching equipment

Trips and VMT - Modeled in EMFAC2021 using CalEEMod defaults + water trucks (demo,site prep,grading @ 50mi/day)

Demolition - from PD

Date: 8/24/2021 12:28 PM

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

Grading - 10,000 Import and 165,000 export

Vehicle Trips - MF = 5.39/4.86/4.05, SF = 6.95/7.02/6.30, MOB = 29.98/7.38/1.22, Restaurant = 83.92/91.56/106.70

Vehicle Emission Factors - EMFAC2021 emission factors

Woodstoves - No fireplaces

Energy Use - Reach Code - no natural gas in residential uses

Water And Wastewater - Wastewater treatment, 100% aerobic, no septic tanks of lagoons.

Construction Off-road Equipment Mitigation - Tier 4 equipment and enhanced BMPs

Energy Mitigation - SJCE goes 100% renewable in 2021

Stationary Sources - Emergency Generators and Fire Pumps - Assume 1,000kw or 1,341 hp

Stationary Sources - Emergency Generators and Fire Pumps EF - Generators meet 2021 BAAQMD BACT standards NOx= 0.5 and PM = 0.02

Consumer Products - Adjusted ROG for Santa Clara County 2027

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
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	6.00
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
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConsumerProducts	ROG_EF	2.14E-05	1.712E-05
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	T24NG	5,226.68	0.00
tblEnergyUse	T24NG	14,104.62	0.00
tblEnergyUse	T24NG	23,474.54	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	120.45	0.00
tblFireplaces	NumberGas	3.45	0.00
tblFireplaces	NumberGas	6.00	0.00
tblFireplaces	NumberNoFireplace	32.12	0.00
tblFireplaces	NumberNoFireplace	0.92	0.00
tblFireplaces	NumberNoFireplace	1.92	0.00
tblFireplaces	NumberWood	136.51	0.00
tblFireplaces	NumberWood	3.91	0.00
tblFireplaces	NumberWood	10.32	0.00
tblGrading	MaterialExported	0.00	165,000.00
tblGrading	MaterialImported	0.00	10,000.00
tblLandUse	LandUseSquareFeet	803,000.00	709,205.00
tblLandUse	LotAcreage	18.95	0.00
tblStationaryGeneratorsPumpsEF	NOX_EF	4.56	0.50
tblStationaryGeneratorsPumpsEF	PM10_EF	0.15	0.02
tblStationaryGeneratorsPumpsEF	PM2_5_EF	0.15	0.02
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,341.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	75.00	0.00
tblTripsAndVMT	HaulingTripNumber	21,875.00	0.00
tblTripsAndVMT	VendorTripLength	7.30	50.00
tblTripsAndVMT	VendorTripLength	7.30	50.00
tblTripsAndVMT	VendorTripLength	7.30	50.00
tblTripsAndVMT	VendorTripNumber	314.00	0.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

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tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,129.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	226.00	0.00
tblVehicleEF	HHD	0.02	0.22
tblVehicleEF	HHD	0.05	0.11
tblVehicleEF	HHD	6.31	5.12
tblVehicleEF	HHD	0.41	0.71
tblVehicleEF	HHD	6.0890e-003	7.8200e-004
tblVehicleEF	HHD	991.82	777.09
tblVehicleEF	HHD	1,327.03	1,519.26
tblVehicleEF	HHD	0.05	0.01
tblVehicleEF	HHD	0.16	0.13
tblVehicleEF	HHD	0.21	0.24
tblVehicleEF	HHD	4.0000e-006	7.0000e-006
tblVehicleEF	HHD	5.29	3.97
tblVehicleEF	HHD	2.62	1.63
tblVehicleEF	HHD	2.32	2.75
tblVehicleEF	HHD	2.3520e-003	1.9390e-003
tblVehicleEF	HHD	0.06	0.08
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	2.2500e-003	1.8490e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8950e-003	8.7840e-003

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tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	2.0000e-006	9.2000e-005
tblVehicleEF	HHD	7.1000e-005	2.9000e-005
tblVehicleEF	HHD	0.42	0.32
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	3.1000e-005	2.6100e-004
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	9.2270e-003	6.7480e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	2.0000e-006	9.2000e-005
tblVehicleEF	HHD	7.1000e-005	2.9000e-005
tblVehicleEF	HHD	0.49	0.57
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	0.07	0.12
tblVehicleEF	HHD	3.1000e-005	2.6100e-004
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	LDA	1.2360e-003	1.5380e-003
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.45	0.54
tblVehicleEF	LDA	1.86	2.42
tblVehicleEF	LDA	214.18	230.34
tblVehicleEF	LDA	45.42	59.41
tblVehicleEF	LDA	3.4320e-003	3.5100e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.14	0.20
tblVehicleEF	LDA	0.04	7.1090e-003

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tblVehicleEF	LDA	1.1160e-003	1.0170e-003
tblVehicleEF	LDA	1.5010e-003	1.7230e-003
tblVehicleEF	LDA	0.02	2.4880e-003
tblVehicleEF	LDA	1.0270e-003	9.3500e-004
tblVehicleEF	LDA	1.3800e-003	1.5840e-003
tblVehicleEF	LDA	0.03	0.25
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	4.3670e-003	5.6030e-003
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.15	0.24
tblVehicleEF	LDA	2.1190e-003	2.2770e-003
tblVehicleEF	LDA	4.5000e-004	5.8700e-004
tblVehicleEF	LDA	0.03	0.25
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	6.3460e-003	8.1650e-003
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.16	0.26
tblVehicleEF	LDT1	2.3950e-003	4.4930e-003
tblVehicleEF	LDT1	0.04	0.09
tblVehicleEF	LDT1	0.65	1.12
tblVehicleEF	LDT1	2.00	4.20
tblVehicleEF	LDT1	258.06	311.08
tblVehicleEF	LDT1	55.33	80.98
tblVehicleEF	LDT1	4.5300e-003	7.3650e-003
tblVehicleEF	LDT1	0.02	0.04
tblVehicleEF	LDT1	0.05	0.09
tblVehicleEF	LDT1	0.17	0.32

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tblVehicleEF	LDT1	0.04	9.1980e-003
tblVehicleEF	LDT1	1.3260e-003	1.5760e-003
tblVehicleEF	LDT1	1.7710e-003	2.4760e-003
tblVehicleEF	LDT1	0.02	3.2190e-003
tblVehicleEF	LDT1	1.2200e-003	1.4490e-003
tblVehicleEF	LDT1	1.6290e-003	2.2770e-003
tblVehicleEF	LDT1	0.06	0.51
tblVehicleEF	LDT1	0.12	0.14
tblVehicleEF	LDT1	0.05	0.00
tblVehicleEF	LDT1	9.7520e-003	0.02
tblVehicleEF	LDT1	0.07	0.39
tblVehicleEF	LDT1	0.20	0.42
tblVehicleEF	LDT1	2.5540e-003	3.0750e-003
tblVehicleEF	LDT1	5.4800e-004	8.0100e-004
tblVehicleEF	LDT1	0.06	0.51
tblVehicleEF	LDT1	0.12	0.14
tblVehicleEF	LDT1	0.05	0.00
tblVehicleEF	LDT1	0.01	0.03
tblVehicleEF	LDT1	0.07	0.39
tblVehicleEF	LDT1	0.22	0.46
tblVehicleEF	LDT2	2.2120e-003	2.2390e-003
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.62	0.71
tblVehicleEF	LDT2	2.44	3.08
tblVehicleEF	LDT2	271.88	320.53
tblVehicleEF	LDT2	58.84	81.54
tblVehicleEF	LDT2	4.6700e-003	5.0850e-003
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.04	0.05

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tblVehicleEF	LDT2	0.20	0.28
tblVehicleEF	LDT2	0.04	8.8520e-003
tblVehicleEF	LDT2	1.1980e-003	1.1830e-003
tblVehicleEF	LDT2	1.5540e-003	1.9260e-003
tblVehicleEF	LDT2	0.02	3.0980e-003
tblVehicleEF	LDT2	1.1030e-003	1.0890e-003
tblVehicleEF	LDT2	1.4290e-003	1.7710e-003
tblVehicleEF	LDT2	0.05	0.27
tblVehicleEF	LDT2	0.10	0.07
tblVehicleEF	LDT2	0.05	0.00
tblVehicleEF	LDT2	8.6200e-003	8.4950e-003
tblVehicleEF	LDT2	0.06	0.20
tblVehicleEF	LDT2	0.23	0.31
tblVehicleEF	LDT2	2.6900e-003	3.1680e-003
tblVehicleEF	LDT2	5.8200e-004	8.0600e-004
tblVehicleEF	LDT2	0.05	0.27
tblVehicleEF	LDT2	0.10	0.07
tblVehicleEF	LDT2	0.05	0.00
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.20
tblVehicleEF	LDT2	0.25	0.34
tblVehicleEF	LHD1	4.5230e-003	4.8530e-003
tblVehicleEF	LHD1	6.3000e-003	5.7620e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.18	0.19
tblVehicleEF	LHD1	0.57	0.71
tblVehicleEF	LHD1	0.96	2.15
tblVehicleEF	LHD1	8.56	8.33
tblVehicleEF	LHD1	734.83	729.06

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tblVehicleEF	LHD1	10.77	17.05
tblVehicleEF	LHD1	7.3900e-004	6.2200e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.05	0.04
tblVehicleEF	LHD1	0.44	0.46
tblVehicleEF	LHD1	0.26	0.38
tblVehicleEF	LHD1	8.8400e-004	6.8500e-004
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	9.8520e-003	9.4090e-003
tblVehicleEF	LHD1	8.1460e-003	0.01
tblVehicleEF	LHD1	2.2600e-004	1.7400e-004
tblVehicleEF	LHD1	8.4600e-004	6.5600e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.4630e-003	2.3520e-003
tblVehicleEF	LHD1	7.7480e-003	0.01
tblVehicleEF	LHD1	2.0700e-004	1.6000e-004
tblVehicleEF	LHD1	1.6310e-003	0.11
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	8.6800e-004	0.00
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.18	0.16
tblVehicleEF	LHD1	0.06	0.10
tblVehicleEF	LHD1	8.3000e-005	8.1000e-005
tblVehicleEF	LHD1	7.1690e-003	7.1170e-003
tblVehicleEF	LHD1	1.0700e-004	1.6900e-004
tblVehicleEF	LHD1	1.6310e-003	0.11
tblVehicleEF	LHD1	0.06	0.03

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tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	8.6800e-004	0.00
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.18	0.16
tblVehicleEF	LHD1	0.06	0.10
tblVehicleEF	LHD2	2.7350e-003	2.7890e-003
tblVehicleEF	LHD2	5.8140e-003	5.4840e-003
tblVehicleEF	LHD2	6.0230e-003	0.01
tblVehicleEF	LHD2	0.13	0.14
tblVehicleEF	LHD2	0.52	0.46
tblVehicleEF	LHD2	0.53	1.16
tblVehicleEF	LHD2	13.44	13.54
tblVehicleEF	LHD2	713.12	776.37
tblVehicleEF	LHD2	6.94	9.14
tblVehicleEF	LHD2	1.7040e-003	1.6800e-003
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.08	0.08
tblVehicleEF	LHD2	0.54	0.66
tblVehicleEF	LHD2	0.15	0.21
tblVehicleEF	LHD2	1.4770e-003	1.4220e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.1400e-004	7.4000e-005
tblVehicleEF	LHD2	1.4140e-003	1.3600e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.7030e-003	2.6620e-003
tblVehicleEF	LHD2	0.01	0.02

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tblVehicleEF	LHD2	1.0400e-004	6.8000e-005
tblVehicleEF	LHD2	7.8300e-004	0.06
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	4.3200e-004	0.00
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	1.2800e-004	1.3000e-004
tblVehicleEF	LHD2	6.8810e-003	7.4740e-003
tblVehicleEF	LHD2	6.9000e-005	9.0000e-005
tblVehicleEF	LHD2	7.8300e-004	0.06
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.3200e-004	0.00
tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	MCY	0.32	0.15
tblVehicleEF	MCY	0.25	0.17
tblVehicleEF	MCY	17.99	11.71
tblVehicleEF	MCY	9.14	7.90
tblVehicleEF	MCY	209.89	186.47
tblVehicleEF	MCY	59.90	45.31
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	7.0870e-003
tblVehicleEF	MCY	1.14	0.54
tblVehicleEF	MCY	0.27	0.12
tblVehicleEF	MCY	0.01	0.01

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tblVehicleEF	MCY	2.0840e-003	1.9590e-003
tblVehicleEF	MCY	2.9100e-003	3.4510e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	1.9450e-003	1.8300e-003
tblVehicleEF	MCY	2.7280e-003	3.2360e-003
tblVehicleEF	MCY	0.90	3.85
tblVehicleEF	MCY	0.65	3.56
tblVehicleEF	MCY	0.48	0.00
tblVehicleEF	MCY	2.15	0.96
tblVehicleEF	MCY	0.49	3.78
tblVehicleEF	MCY	1.90	1.23
tblVehicleEF	MCY	2.0770e-003	1.8430e-003
tblVehicleEF	MCY	5.9300e-004	4.4800e-004
tblVehicleEF	MCY	0.90	0.08
tblVehicleEF	MCY	0.65	3.56
tblVehicleEF	MCY	0.48	0.00
tblVehicleEF	MCY	2.69	1.17
tblVehicleEF	MCY	0.49	3.78
tblVehicleEF	MCY	2.07	1.34
tblVehicleEF	MDV	2.3750e-003	2.6750e-003
tblVehicleEF	MDV	0.05	0.08
tblVehicleEF	MDV	0.63	0.76
tblVehicleEF	MDV	2.55	3.20
tblVehicleEF	MDV	327.97	384.38
tblVehicleEF	MDV	69.67	97.04
tblVehicleEF	MDV	6.1060e-003	6.4690e-003
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.05	0.07
tblVehicleEF	MDV	0.22	0.32

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tblVehicleEF	MDV	0.04	8.9330e-003
tblVehicleEF	MDV	1.2330e-003	1.1780e-003
tblVehicleEF	MDV	1.5830e-003	1.8910e-003
tblVehicleEF	MDV	0.02	3.1260e-003
tblVehicleEF	MDV	1.1370e-003	1.0850e-003
tblVehicleEF	MDV	1.4560e-003	1.7380e-003
tblVehicleEF	MDV	0.06	0.31
tblVehicleEF	MDV	0.11	0.08
tblVehicleEF	MDV	0.06	0.00
tblVehicleEF	MDV	9.5210e-003	0.01
tblVehicleEF	MDV	0.06	0.24
tblVehicleEF	MDV	0.26	0.37
tblVehicleEF	MDV	3.2410e-003	3.7980e-003
tblVehicleEF	MDV	6.8900e-004	9.5900e-004
tblVehicleEF	MDV	0.06	0.31
tblVehicleEF	MDV	0.11	0.08
tblVehicleEF	MDV	0.06	0.00
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.06	0.24
tblVehicleEF	MDV	0.28	0.41
tblVehicleEF	MH	6.9300e-003	8.8150e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.58	0.77
tblVehicleEF	MH	1.80	2.17
tblVehicleEF	MH	1,418.06	1,669.13
tblVehicleEF	MH	16.70	21.21
tblVehicleEF	MH	0.06	0.07
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.17	1.40

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tblVehicleEF	MH	0.24	0.30
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.3200e-004	2.6700e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.2900e-003	3.3210e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.1400e-004	2.4600e-004
tblVehicleEF	MH	0.47	26.64
tblVehicleEF	MH	0.04	6.73
tblVehicleEF	MH	0.18	0.00
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	9.6720e-003	0.16
tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.6500e-004	2.1000e-004
tblVehicleEF	MH	0.47	26.64
tblVehicleEF	MH	0.04	6.73
tblVehicleEF	MH	0.18	0.00
tblVehicleEF	MH	0.06	0.08
tblVehicleEF	MH	9.6720e-003	0.16
tblVehicleEF	MH	0.09	0.11
tblVehicleEF	MHD	3.6950e-003	0.01
tblVehicleEF	MHD	1.2530e-003	9.5450e-003
tblVehicleEF	MHD	8.5300e-003	7.5570e-003
tblVehicleEF	MHD	0.40	0.66
tblVehicleEF	MHD	0.18	0.22
tblVehicleEF	MHD	0.94	0.88

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tblVehicleEF	MHD	68.38	154.32
tblVehicleEF	MHD	1,034.78	1,175.45
tblVehicleEF	MHD	8.72	7.64
tblVehicleEF	MHD	9.8750e-003	0.02
tblVehicleEF	MHD	0.13	0.15
tblVehicleEF	MHD	7.4170e-003	5.5230e-003
tblVehicleEF	MHD	0.37	0.81
tblVehicleEF	MHD	1.44	0.81
tblVehicleEF	MHD	1.70	1.37
tblVehicleEF	MHD	2.4000e-004	1.1860e-003
tblVehicleEF	MHD	0.13	0.04
tblVehicleEF	MHD	7.0420e-003	8.3150e-003
tblVehicleEF	MHD	1.1100e-004	9.3000e-005
tblVehicleEF	MHD	2.3000e-004	1.1340e-003
tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	6.7300e-003	7.9470e-003
tblVehicleEF	MHD	1.0200e-004	8.5000e-005
tblVehicleEF	MHD	3.1800e-004	0.02
tblVehicleEF	MHD	0.02	4.6660e-003
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	1.7500e-004	0.00
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.04	0.04
tblVehicleEF	MHD	6.4900e-004	1.4270e-003
tblVehicleEF	MHD	9.8700e-003	0.01
tblVehicleEF	MHD	8.6000e-005	7.6000e-005
tblVehicleEF	MHD	3.1800e-004	0.02
tblVehicleEF	MHD	0.02	4.6660e-003

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tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.7500e-004	0.00
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.05	0.04
tblVehicleEF	OBUS	7.0730e-003	7.5660e-003
tblVehicleEF	OBUS	2.7540e-003	0.01
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.62	0.54
tblVehicleEF	OBUS	0.33	0.37
tblVehicleEF	OBUS	1.69	1.70
tblVehicleEF	OBUS	96.38	89.08
tblVehicleEF	OBUS	1,261.24	1,320.54
tblVehicleEF	OBUS	14.17	13.66
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.13	0.16
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.41	0.36
tblVehicleEF	OBUS	1.44	0.90
tblVehicleEF	OBUS	1.12	1.00
tblVehicleEF	OBUS	1.3500e-004	3.7200e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	7.6000e-003	0.01
tblVehicleEF	OBUS	1.5100e-004	1.2700e-004
tblVehicleEF	OBUS	1.3000e-004	3.5600e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	7.2580e-003	0.01
tblVehicleEF	OBUS	1.3900e-004	1.1700e-004
tblVehicleEF	OBUS	1.0730e-003	0.07

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tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.04
tblVehicleEF	OBUS	4.8500e-004	0.00
tblVehicleEF	OBUS	0.02	0.04
tblVehicleEF	OBUS	0.04	0.08
tblVehicleEF	OBUS	0.08	0.08
tblVehicleEF	OBUS	9.1500e-004	8.4100e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.4000e-004	1.3500e-004
tblVehicleEF	OBUS	1.0730e-003	0.07
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	4.8500e-004	0.00
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	0.04	0.08
tblVehicleEF	OBUS	0.09	0.09
tblVehicleEF	SBUS	0.06	0.08
tblVehicleEF	SBUS	5.1390e-003	0.09
tblVehicleEF	SBUS	5.5510e-003	5.0470e-003
tblVehicleEF	SBUS	2.58	1.76
tblVehicleEF	SBUS	0.42	0.81
tblVehicleEF	SBUS	0.77	0.68
tblVehicleEF	SBUS	343.48	187.75
tblVehicleEF	SBUS	1,012.23	995.30
tblVehicleEF	SBUS	4.55	3.88
tblVehicleEF	SBUS	0.05	0.02
tblVehicleEF	SBUS	0.13	0.12
tblVehicleEF	SBUS	5.5840e-003	4.6260e-003
tblVehicleEF	SBUS	3.12	1.26

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tblVehicleEF	SBUS	3.92	2.08
tblVehicleEF	SBUS	1.00	0.51
tblVehicleEF	SBUS	2.7970e-003	1.0210e-003
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	5.7000e-005	4.3000e-005
tblVehicleEF	SBUS	2.6760e-003	9.7600e-004
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.6950e-003	2.6290e-003
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	5.3000e-005	4.0000e-005
tblVehicleEF	SBUS	6.7700e-004	0.03
tblVehicleEF	SBUS	6.5220e-003	8.5010e-003
tblVehicleEF	SBUS	0.29	0.19
tblVehicleEF	SBUS	3.1500e-004	0.00
tblVehicleEF	SBUS	0.07	0.05
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	3.2730e-003	1.7010e-003
tblVehicleEF	SBUS	9.6760e-003	9.2440e-003
tblVehicleEF	SBUS	4.5000e-005	3.8000e-005
tblVehicleEF	SBUS	6.7700e-004	0.03
tblVehicleEF	SBUS	6.5220e-003	8.5010e-003
tblVehicleEF	SBUS	0.41	0.31
tblVehicleEF	SBUS	3.1500e-004	0.00
tblVehicleEF	SBUS	0.09	0.15
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.03	0.03

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tblVehicleEF	UBUS	1.74	0.53
tblVehicleEF	UBUS	1.9120e-003	3.7050e-003
tblVehicleEF	UBUS	13.20	6.31
tblVehicleEF	UBUS	0.14	0.48
tblVehicleEF	UBUS	1,654.13	1,063.59
tblVehicleEF	UBUS	1.40	3.13
tblVehicleEF	UBUS	0.28	0.16
tblVehicleEF	UBUS	1.1770e-003	5.9640e-003
tblVehicleEF	UBUS	0.71	0.29
tblVehicleEF	UBUS	0.01	0.04
tblVehicleEF	UBUS	0.07	0.13
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	5.1700e-003	5.5380e-003
tblVehicleEF	UBUS	1.5000e-005	1.2000e-005
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	8.3320e-003	0.01
tblVehicleEF	UBUS	4.9450e-003	5.2950e-003
tblVehicleEF	UBUS	1.4000e-005	1.1000e-005
tblVehicleEF	UBUS	3.2000e-005	0.02
tblVehicleEF	UBUS	3.3900e-004	4.7600e-003
tblVehicleEF	UBUS	1.6000e-005	0.00
tblVehicleEF	UBUS	0.03	0.06
tblVehicleEF	UBUS	6.9000e-005	0.01
tblVehicleEF	UBUS	8.0430e-003	0.01
tblVehicleEF	UBUS	0.01	8.5740e-003
tblVehicleEF	UBUS	1.4000e-005	3.1000e-005
tblVehicleEF	UBUS	3.2000e-005	0.02
tblVehicleEF	UBUS	3.3900e-004	4.7600e-003
tblVehicleEF	UBUS	1.6000e-005	0.00

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tblVehicleEF	UBUS	1.78	0.60
tblVehicleEF	UBUS	6.9000e-005	0.01
tblVehicleEF	UBUS	8.8060e-003	0.01
tblVehicleTrips	ST_TR	4.91	4.86
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	8.14	4.86
tblVehicleTrips	ST_TR	122.40	91.56
tblVehicleTrips	ST_TR	8.57	7.38
tblVehicleTrips	ST_TR	9.54	7.02
tblVehicleTrips	SU_TR	4.09	4.05
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	6.28	4.05
tblVehicleTrips	SU_TR	142.64	106.70
tblVehicleTrips	SU_TR	1.42	1.22
tblVehicleTrips	SU_TR	8.55	6.30
tblVehicleTrips	WD_TR	5.44	5.39
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	7.32	5.39
tblVehicleTrips	WD_TR	112.18	83.92
tblVehicleTrips	WD_TR	34.80	29.98
tblVehicleTrips	WD_TR	9.44	6.95
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	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00

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tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	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
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	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					
2023	0.2654	2.6477	2.3474	4.7200e-003	0.6580	0.1170	0.7750	0.2913	0.1082	0.3995	0.0000	413.2970	413.2970	0.1260	0.0000	416.4474
2024	0.1928	1.7611	2.1179	3.5300e-003	0.0000	0.0803	0.0803	0.0000	0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179

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2025	0.1785	1.6273	2.0991	3.5200e-003	0.0000	0.0689	0.0689	0.0000	0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
2026	8.2878	1.3711	1.8741	3.0900e-003	0.0000	0.0596	0.0596	0.0000	0.0559	0.0559	0.0000	267.3231	267.3231	0.0664	0.0000	268.9840
Maximum	**8.2878**	**2.6477**	**2.3474**	**4.7200e-003**	**0.6580**	**0.1170**	**0.7750**	**0.2913**	**0.1082**	**0.3995**	**0.0000**	**413.2970**	**413.2970**	**0.1260**	**0.0000**	**416.4474**

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					
2023	0.0786	1.5984	2.9306	4.7200e-003	0.1283	8.4800e-003	0.1368	0.0568	8.4800e-003	0.0653	0.0000	413.2965	413.2965	0.1260	0.0000	416.4469
2024	0.0699	1.4295	2.3415	3.5300e-003	0.0000	0.0111	0.0111	0.0000	0.0111	0.0111	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
2025	0.0696	1.4240	2.3325	3.5200e-003	0.0000	0.0110	0.0110	0.0000	0.0110	0.0110	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
2026	8.1948	1.2710	2.1079	3.0900e-003	0.0000	8.6200e-003	8.6200e-003	0.0000	8.6200e-003	8.6200e-003	0.0000	267.3228	267.3228	0.0664	0.0000	268.9837
Maximum	**8.1948**	**1.5984**	**2.9306**	**4.7200e-003**	**0.1283**	**0.0111**	**0.1368**	**0.0568**	**0.0111**	**0.0653**	**0.0000**	**413.2965**	**413.2965**	**0.1260**	**0.0000**	**416.4469**

	ROG	NOx	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	**5.73**	**22.74**	**-15.10**	**0.00**	**80.50**	**87.96**	**82.97**	**80.50**	**87.12**	**83.88**	**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	**4-3-2023**	**7-2-2023**	0.8248	0.4491
2	**7-3-2023**	**10-2-2023**	1.2806	0.7142

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3	**10-3-2023**	**1-2-2024**	0.8128	0.5201
4	**1-3-2024**	**4-2-2024**	0.4847	0.3720
5	**4-3-2024**	**7-2-2024**	0.4847	0.3720
6	**7-3-2024**	**10-2-2024**	0.4901	0.3761
7	**10-3-2024**	**1-2-2025**	0.4893	0.3761
8	**1-3-2025**	**4-2-2025**	0.4448	0.3679
9	**4-3-2025**	**7-2-2025**	0.4497	0.3720
10	**7-3-2025**	**10-2-2025**	0.4546	0.3761
11	**10-3-2025**	**1-2-2026**	0.4546	0.3761
12	**1-3-2026**	**4-2-2026**	0.4448	0.3679
13	**4-3-2026**	**7-2-2026**	0.4497	0.3720
14	**7-3-2026**	**9-30-2026**	3.1642	3.1158
		Highest	3.1642	3.1158

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	4.9824	0.0729	6.3291	3.4000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	10.3557	10.3557	9.9900e-003	0.0000	10.6055
Energy	0.0574	0.5217	0.4382	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	6,597.2088	6,597.2088	0.2571	0.0403	6,615.6348
Mobile	8.9270	5.0333	50.9121	0.1104	10.9233	0.0731	10.9963	2.7223	0.0681	2.7904	0.0000	10,191.5911	10,191.5911	0.5941	0.4819	10,350.0529
Stationary	0.0550	0.0270	0.1403	2.6000e-004		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219
Waste						0.0000	0.0000		0.0000	0.0000	1,138.6819	0.0000	1,138.6819	67.2942	0.0000	2,821.0361

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Water						0.0000	0.0000		0.0000	0.0000	41.8485	295.3551	337.2036	0.1561	0.0925	368.6619
Total	**14.0218**	**5.6548**	**57.8197**	**0.1141**	**10.9233**	**0.1489**	**11.0721**	**2.7223**	**0.1439**	**2.8662**	**1,180.5304**	**17,120.0432**	**18,300.5735**	**68.3150**	**0.6146**	**20,191.6132**

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	4.9824	0.0729	6.3291	3.4000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	10.3557	10.3557	9.9900e-003	0.0000	10.6055
Energy	0.0574	0.5217	0.4382	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	567.9003	567.9003	0.0109	0.0104	571.2751
Mobile	8.9270	5.0333	50.9121	0.1104	10.9233	0.0731	10.9963	2.7223	0.0681	2.7904	0.0000	10,191.5911	10,191.5911	0.5941	0.4819	10,350.0529
Stationary	0.0550	0.0270	0.1403	2.6000e-004		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219
Waste						0.0000	0.0000		0.0000	0.0000	1,138.6819	0.0000	1,138.6819	67.2942	0.0000	2,821.0361
Water						0.0000	0.0000		0.0000	0.0000	41.8485	295.3551	337.2036	0.1561	0.0925	368.6619
Total	**14.0218**	**5.6548**	**57.8197**	**0.1141**	**10.9233**	**0.1489**	**11.0721**	**2.7223**	**0.1439**	**2.8662**	**1,180.5304**	**11,090.7346**	**12,271.2650**	**68.0688**	**0.5848**	**14,147.2534**

	ROG	NOx	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**	**35.22**	**32.95**	**0.36**	**4.86**	**29.94**

3.0 Construction Detail

Date: 8/24/2021 12:28 PM

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

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/3/2023	6/9/2023	5	50	
2	Site Preparation	Site Preparation	6/10/2023	7/21/2023	5	30	
3	Grading	Grading	7/22/2023	11/3/2023	5	75	
4	Trenching	Trenching	7/22/2023	11/3/2023	5	75	assume overlap with grading
5	Building Construction	Building Construction	11/4/2023	9/4/2026	5	740	
6	Paving	Paving	9/5/2026	11/20/2026	5	55	
7	Architectural Coating	Architectural Coating	9/5/2026	11/20/2026	5	55	overlap

Acres of Grading (Site Preparation Phase): 45

Acres of Grading (Grading Phase): 225

Acres of Paving: 0

Residential Indoor: 1,570,195; Residential Outdoor: 523,398; Non-Residential Indoor: 720,000; Non-Residential Outdoor: 240,000; Striped Parking

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	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38

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Trenching	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	50.00	20.00	LD_Mix	HHDT	HHDT
Site Preparation	7	0.00	0.00	0.00	10.80	50.00	20.00	LD_Mix	HHDT	HHDT
Grading	8	0.00	0.00	0.00	10.80	50.00	20.00	LD_Mix	HHDT	HHDT
Trenching	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.1200e-003	0.0000	8.1200e-003	1.2300e-003	0.0000	1.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0567	0.5371	0.4911	9.7000e-004		0.0249	0.0249		0.0232	0.0232	0.0000	84.9802	84.9802	0.0238	0.0000	85.5752
Total	**0.0567**	**0.5371**	**0.4911**	**9.7000e-004**	**8.1200e-003**	**0.0249**	**0.0331**	**1.2300e-003**	**0.0232**	**0.0244**	**0.0000**	**84.9802**	**84.9802**	**0.0238**	**0.0000**	**85.5752**

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**

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5800e-003	0.0000	1.5800e-003	2.4000e-004	0.0000	2.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0146	0.3389	0.6169	9.7000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	84.9801	84.9801	0.0238	0.0000	85.5751
Total	**0.0146**	**0.3389**	**0.6169**	**9.7000e-004**	**1.5800e-003**	**1.5400e-003**	**3.1200e-003**	**2.4000e-004**	**1.5400e-003**	**1.7800e-003**	**0.0000**	**84.9801**	**84.9801**	**0.0238**	**0.0000**	**85.5751**

Mitigated Construction Off-Site

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

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

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2949	0.0000	0.2949	0.1515	0.0000	0.1515	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0399	0.4129	0.2737	5.7000e-004		0.0190	0.0190		0.0175	0.0175	0.0000	50.1760	50.1760	0.0162	0.0000	50.5817
Total	**0.0399**	**0.4129**	**0.2737**	**5.7000e-004**	**0.2949**	**0.0190**	**0.3139**	**0.1515**	**0.0175**	**0.1690**	**0.0000**	**50.1760**	**50.1760**	**0.0162**	**0.0000**	**50.5817**

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0575	0.0000	0.0575	0.0296	0.0000	0.0296	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.1824	0.3444	5.7000e-004		9.3000e-004	9.3000e-004		9.3000e-004	9.3000e-004	0.0000	50.1760	50.1760	0.0162	0.0000	50.5817
Total	**0.0105**	**0.1824**	**0.3444**	**5.7000e-004**	**0.0575**	**9.3000e-004**	**0.0584**	**0.0296**	**9.3000e-004**	**0.0305**	**0.0000**	**50.1760**	**50.1760**	**0.0162**	**0.0000**	**50.5817**

Mitigated Construction Off-Site

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

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

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3550	0.0000	0.3550	0.1385	0.0000	0.1385	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1246	1.2943	1.0519	2.3300e-003		0.0534	0.0534		0.0491	0.0491	0.0000	204.5070	204.5070	0.0661	0.0000	206.1606
Total	**0.1246**	**1.2943**	**1.0519**	**2.3300e-003**	**0.3550**	**0.0534**	**0.4085**	**0.1385**	**0.0491**	**0.1877**	**0.0000**	**204.5070**	**204.5070**	**0.0661**	**0.0000**	**206.1606**

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0692	0.0000	0.0692	0.0270	0.0000	0.0270	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0379	0.7227	1.3771	2.3300e-003		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	204.5068	204.5068	0.0661	0.0000	206.1603
Total	**0.0379**	**0.7227**	**1.3771**	**2.3300e-003**	**0.0692**	**3.8100e-003**	**0.0730**	**0.0270**	**3.8100e-003**	**0.0308**	**0.0000**	**204.5068**	**204.5068**	**0.0661**	**0.0000**	**206.1603**

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**

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

3.5 Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0128	0.1157	0.2058	3.1000e-004		5.6900e-003	5.6900e-003		5.2300e-003	5.2300e-003	0.0000	27.2728	27.2728	8.8200e-003	0.0000	27.4933
Total	**0.0128**	**0.1157**	**0.2058**	**3.1000e-004**		**5.6900e-003**	**5.6900e-003**		**5.2300e-003**	**5.2300e-003**	**0.0000**	**27.2728**	**27.2728**	**8.8200e-003**	**0.0000**	**27.4933**

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.9900e-003	0.1362	0.2348	3.1000e-004		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	27.2727	27.2727	8.8200e-003	0.0000	27.4933
Total	**4.9900e-003**	**0.1362**	**0.2348**	**3.1000e-004**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**	**0.0000**	**27.2727**	**27.2727**	**8.8200e-003**	**0.0000**	**27.4933**

Mitigated Construction Off-Site

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

3.6 Building Construction - 2023

Unmitigated Construction On-Site

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0315	0.2877	0.3249	5.4000e-004		0.0140	0.0140		0.0132	0.0132	0.0000	46.3610	46.3610	0.0110	0.0000	46.6367
Total	**0.0315**	**0.2877**	**0.3249**	**5.4000e-004**		**0.0140**	**0.0140**		**0.0132**	**0.0132**	**0.0000**	**46.3610**	**46.3610**	**0.0110**	**0.0000**	**46.6367**

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

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0107	0.2182	0.3575	5.4000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	46.3609	46.3609	0.0110	0.0000	46.6366
Total	**0.0107**	**0.2182**	**0.3575**	**5.4000e-004**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**46.3609**	**46.3609**	**0.0110**	**0.0000**	**46.6366**

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 - 2024

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

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

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					

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

Off-Road	0.0699	1.4295	2.3415	3.5300e-003		0.0111	0.0111		0.0111	0.0111	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.0699**	**1.4295**	**2.3415**	**3.5300e-003**		**0.0111**	**0.0111**		**0.0111**	**0.0111**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

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 - 2025

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	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335

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

Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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	0.0696	1.4240	2.3325	3.5200e-003		0.0110	0.0110		0.0110	0.0110	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.0696**	**1.4240**	**2.3325**	**3.5200e-003**		**0.0110**	**0.0110**		**0.0110**	**0.0110**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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

Mitigated Construction 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 - 2026

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	0.1210	1.1036	1.4235	2.3900e-003		0.0467	0.0467		0.0439	0.0439	0.0000	205.2487	205.2487	0.0483	0.0000	206.4549
Total	**0.1210**	**1.1036**	**1.4235**	**2.3900e-003**		**0.0467**	**0.0467**		**0.0439**	**0.0439**	**0.0000**	**205.2487**	**205.2487**	**0.0483**	**0.0000**	**206.4549**

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

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	0.0472	0.9657	1.5818	2.3900e-003		7.4900e-003	7.4900e-003		7.4900e-003	7.4900e-003	0.0000	205.2485	205.2485	0.0483	0.0000	206.4547
Total	**0.0472**	**0.9657**	**1.5818**	**2.3900e-003**		**7.4900e-003**	**7.4900e-003**		**7.4900e-003**	**7.4900e-003**	**0.0000**	**205.2485**	**205.2485**	**0.0483**	**0.0000**	**206.4547**

Mitigated Construction Off-Site

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

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

3.7 Paving - 2026

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	0.0252	0.2360	0.4009	6.3000e-004		0.0115	0.0115		0.0106	0.0106	0.0000	55.0530	55.0530	0.0178	0.0000	55.4981
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0252**	**0.2360**	**0.4009**	**6.3000e-004**		**0.0115**	**0.0115**		**0.0106**	**0.0106**	**0.0000**	**55.0530**	**55.0530**	**0.0178**	**0.0000**	**55.4981**

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.1900e-003	0.2761	0.4756	6.3000e-004		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	55.0529	55.0529	0.0178	0.0000	55.4980
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.1900e-003**	**0.2761**	**0.4756**	**6.3000e-004**		**1.0300e-003**	**1.0300e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**55.0529**	**55.0529**	**0.0178**	**0.0000**	**55.4980**

Mitigated Construction Off-Site

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

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

3.8 Architectural Coating - 2026

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	8.1369					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7000e-003	0.0315	0.0498	8.0000e-005		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003	0.0000	7.0215	7.0215	3.8000e-004	0.0000	7.0310
Total	**8.1416**	**0.0315**	**0.0498**	**8.0000e-005**		**1.4200e-003**	**1.4200e-003**		**1.4200e-003**	**1.4200e-003**	**0.0000**	**7.0215**	**7.0215**	**3.8000e-004**	**0.0000**	**7.0310**

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	8.1369					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-003	0.0292	0.0504	8.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	7.0214	7.0214	3.8000e-004	0.0000	7.0310
Total	**8.1384**	**0.0292**	**0.0504**	**8.0000e-005**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**7.0214**	**7.0214**	**3.8000e-004**	**0.0000**	**7.0310**

Mitigated Construction Off-Site

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

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

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	8.9270	5.0333	50.9121	0.1104	10.9233	0.0731	10.9963	2.7223	0.0681	2.7904	0.0000	10,191.5911	10,191.5911	0.5941	0.4819	10,350.0529
Unmitigated	8.9270	5.0333	50.9121	0.1104	10.9233	0.0731	10.9963	2.7223	0.0681	2.7904	0.0000	10,191.5911	10,191.5911	0.5941	0.4819	10,350.0529

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	4,328.17	3,902.58	3252.15	9,500,926	9,500,926
City Park	0.00	0.00	0.00		
Condo/Townhouse	123.97	111.78	93.15	272,131	272,131
Enclosed Parking with Elevator	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	1,258.80	1,373.40	1600.50	1,536,174	1,536,174
Medical Office Building	13,940.70	3,431.70	567.30	20,607,744	20,607,744
Single Family Housing	166.80	168.48	151.20	380,650	380,650
Total	19,818.44	8,987.94	5,664.30	32,297,624	32,297,624

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
High Turnover (Sit Down Restaurant)	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624
City Park	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624
Condo/Townhouse	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624
Enclosed Parking with Elevator	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624
High Turnover (Sit Down Restaurant)	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624
Medical Office Building	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624
Single Family Housing	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6,029.3085	6,029.3085	0.2463	0.0299	6,044.3598
NaturalGas Mitigated	0.0574	0.5217	0.4382	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	567.9003	567.9003	0.0109	0.0104	571.2751
NaturalGas Unmitigated	0.0574	0.5217	0.4382	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	567.9003	567.9003	0.0109	0.0104	571.2751

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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

City Park	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
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	3.10905e+006	0.0168	0.1524	0.1280	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.9108	165.9108	3.1800e-003	3.0400e-003	166.8967
Medical Office Building	7.533e+006	0.0406	0.3693	0.3102	2.2200e-003		0.0281	0.0281		0.0281	0.0281	0.0000	401.9896	401.9896	7.7000e-003	7.3700e-003	404.3784
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0574**	**0.5217**	**0.4382**	**3.1300e-003**		**0.0396**	**0.0396**		**0.0396**	**0.0396**	**0.0000**	**567.9003**	**567.9003**	**0.0109**	**0.0104**	**571.2751**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	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
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	3.10905e+006	0.0168	0.1524	0.1280	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.9108	165.9108	3.1800e-003	3.0400e-003	166.8967
Medical Office Building	7.533e+006	0.0406	0.3693	0.3102	2.2200e-003		0.0281	0.0281		0.0281	0.0281	0.0000	401.9896	401.9896	7.7000e-003	7.3700e-003	404.3784
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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

Total		**0.0574**	**0.5217**	**0.4382**	**3.1300e-003**		**0.0396**	**0.0396**		**0.0396**	**0.0396**	**0.0000**	**567.9003**	**567.9003**	**0.0109**	**0.0104**	**571.2751**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	3.10474e+006	1,137.8684	0.0465	5.6300e-003	1,140.7090
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	111515	40.8695	1.6700e-003	2.0000e-004	40.9715
Enclosed Parking with Elevator	4.58048e+006	1,678.7164	0.0686	8.3100e-003	1,682.9071
High Turnover (Sit Down Restaurant)	482550	176.8515	7.2200e-003	8.8000e-004	177.2930
Medical Office Building	7.98405e+006	2,926.1029	0.1195	0.0145	2,933.4075
Single Family Housing	187997	68.8998	2.8100e-003	3.4000e-004	69.0718
Total		**6,029.3085**	**0.2462**	**0.0299**	**6,044.3598**

Mitigated

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.9824	0.0729	6.3291	3.4000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	10.3557	10.3557	9.9900e-003	0.0000	10.6055

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

Unmitigated	4.9824	0.0729	6.3291	3.4000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	10.3557	10.3557	9.9900e-003	0.0000	10.6055

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	0.8137					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9772					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1915	0.0729	6.3291	3.4000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	10.3557	10.3557	9.9900e-003	0.0000	10.6055
Total	**4.9824**	**0.0729**	**6.3291**	**3.4000e-004**		**0.0351**	**0.0351**		**0.0351**	**0.0351**	**0.0000**	**10.3557**	**10.3557**	**9.9900e-003**	**0.0000**	**10.6055**

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	0.8137					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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

Consumer Products	3.9772					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1915	0.0729	6.3291	3.4000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	10.3557	10.3557	9.9900e-003	0.0000	10.6055
Total	**4.9824**	**0.0729**	**6.3291**	**3.4000e-004**		**0.0351**	**0.0351**		**0.0351**	**0.0351**	**0.0000**	**10.3557**	**10.3557**	**9.9900e-003**	**0.0000**	**10.6055**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	337.2036	0.1561	0.0925	368.6619
Unmitigated	337.2036	0.1561	0.0925	368.6619

7.2 Water by Land Use

Unmitigated

Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

Land Use	Mgal	MT/yr			
Apartments Mid Rise	52.3187 / 32.9835	164.5723	0.0697	0.0410	178.5254
City Park	0 / 1.07233	1.3755	6.0000e-005	1.0000e-005	1.3790
Condo/Townhouse	1.49854 / 0.944733	4.7138	2.0000e-003	1.1700e-003	5.1134
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	4.55301 / 0.290617	11.0127	5.9300e-003	3.5500e-003	12.2187
Medical Office Building	58.3484 / 11.114	150.6106	0.0764	0.0455	166.0897
Single Family Housing	1.5637 / 0.985809	4.9187	2.0800e-003	1.2200e-003	5.3358
Total		**337.2036**	**0.1561**	**0.0925**	**368.6619**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	52.3187 / 32.9835	164.5723	0.0697	0.0410	178.5254
City Park	0 / 1.07233	1.3755	6.0000e-005	1.0000e-005	1.3790
Condo/Townhouse	1.49854 / 0.944733	4.7138	2.0000e-003	1.1700e-003	5.1134
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	4.55301 / 0.290617	11.0127	5.9300e-003	3.5500e-003	12.2187

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

Medical Office Building	58.3484 / 11.114	150.6106	0.0764	0.0455	166.0897
Single Family Housing	1.5637 / 0.985809	4.9187	2.0800e-003	1.2200e-003	5.3358
Total		**337.2036**	**0.1561**	**0.0925**	**368.6619**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1,138.6819	67.2942	0.0000	2,821.0361
Unmitigated	1,138.6819	67.2942	0.0000	2,821.0361

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

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

Apartments Mid Rise	369.38	74.9808	4.4312	0.0000	185.7618
City Park	0.08	0.0162	9.6000e-004	0.0000	0.0402
Condo/Townhouse	10.58	2.1476	0.1269	0.0000	5.3207
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	178.5	36.2339	2.1414	0.0000	89.7679
Medical Office Building	5022	1,019.4206	60.2460	0.0000	2,525.5714
Single Family Housing	28.98	5.8827	0.3477	0.0000	14.5741
Total		**1,138.6819**	**67.2942**	**0.0000**	**2,821.0361**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	369.38	74.9808	4.4312	0.0000	185.7618
City Park	0.08	0.0162	9.6000e-004	0.0000	0.0402
Condo/Townhouse	10.58	2.1476	0.1269	0.0000	5.3207
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	178.5	36.2339	2.1414	0.0000	89.7679
Medical Office Building	5022	1,019.4206	60.2460	0.0000	2,525.5714

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

Single Family Housing	28.98	5.8827	0.3477	0.0000	14.5741
Total		**1,138.6819**	**67.2942**	**0.0000**	**2,821.0361**

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
Emergency Generator	1	0	50	1341	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (766 - 9999 HP)	0.0550	0.0270	0.1403	2.6000e-004		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219

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

Total	0.0550	0.0270	0.1403	2.6000e-004		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219

11.0 Vegetation

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

1655 Berryessa Mixed Use

With VOC Mitigation

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	465.00	1000sqft	10.67	465,000.00	0
Enclosed Parking with Elevator	2,105.00	Space	0.00	842,000.00	0
City Park	0.90	Acre	0.90	39,204.00	0
High Turnover (Sit Down Restaurant)	15.00	1000sqft	0.34	15,000.00	0
Apartments Mid Rise	803.00	Dwelling Unit	21.13	709,205.00	2297
Condo/Townhouse	23.00	Dwelling Unit	1.44	23,000.00	66
Single Family Housing	24.00	Dwelling Unit	7.79	43,200.00	69

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2027
Utility Company	San Jose Clean Energy				
CO2 Intensity (lb/MWhr)	807.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Square footages of apartments from plan sheet

Construction Phase - Added Trenching

Off-road Equipment - Trenching equipment

Trips and VMT - Modeled in EMFAC2021 using CalEEMod defaults + water trucks (demo,site prep,grading @ 50mi/day)

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

Demolition - from PD

Grading - 10,000 Import and 165,000 export

Vehicle Trips - MF = 5.39/4.86/4.05, SF = 6.95/7.02/6.30, MOB = 29.98/7.38/1.22, Restaurant = 83.92/91.56/106.70

Vehicle Emission Factors - EMFAC2021 emission factors

Woodstoves - No fireplaces

Energy Use - Reach Code - no natural gas in residential uses

Water And Wastewater - Wastewater treatment, 100% aerobic, no septic tanks of lagoons.

Construction Off-road Equipment Mitigation - Tier 4 equipment and enhanced BMPs

Energy Mitigation - SJCE goes 100% renewable in 2021

Stationary Sources - Emergency Generators and Fire Pumps - Assume 1,000kw or 1,341 hp

Stationary Sources - Emergency Generators and Fire Pumps EF - Generators meet 2021 BAAQMD BACT standards NOx= 0.5 and PM = 0.02

Consumer Products - Adjusted ROG for Santa Clara County 2027

Architectural Coating - Construction - At least 60% of paints have to be super-compliant VOC = effectively 46gm/L interior and 66g/L exterior

Area Coating - Operational - At least 90% of paints have to be super-compliant VOC = 15g/L exterior

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	66.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	46.00
tblArchitecturalCoating	EF_Parking	150.00	66.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	66.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	46.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	15
tblAreaCoating	Area_EF_Residential_Exterior	150	15
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
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	6.00

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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
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConsumerProducts	ROG_EF	2.14E-05	1.712E-05
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	T24NG	5,226.68	0.00

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tblEnergyUse	T24NG	14,104.62	0.00
tblEnergyUse	T24NG	23,474.54	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	120.45	0.00
tblFireplaces	NumberGas	3.45	0.00
tblFireplaces	NumberGas	6.00	0.00
tblFireplaces	NumberNoFireplace	32.12	0.00
tblFireplaces	NumberNoFireplace	0.92	0.00
tblFireplaces	NumberNoFireplace	1.92	0.00
tblFireplaces	NumberWood	136.51	0.00
tblFireplaces	NumberWood	3.91	0.00
tblFireplaces	NumberWood	10.32	0.00
tblGrading	MaterialExported	0.00	165,000.00
tblGrading	MaterialImported	0.00	10,000.00
tblLandUse	LandUseSquareFeet	803,000.00	709,205.00
tblLandUse	LotAcreage	18.95	0.00
tblStationaryGeneratorsPumpsEF	NOX_EF	4.56	0.50
tblStationaryGeneratorsPumpsEF	PM10_EF	0.15	0.02
tblStationaryGeneratorsPumpsEF	PM2_5_EF	0.15	0.02
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,341.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00

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tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	75.00	0.00
tblTripsAndVMT	HaulingTripNumber	21,875.00	0.00
tblTripsAndVMT	VendorTripLength	7.30	50.00
tblTripsAndVMT	VendorTripLength	7.30	50.00
tblTripsAndVMT	VendorTripLength	7.30	50.00
tblTripsAndVMT	VendorTripNumber	314.00	0.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,129.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	226.00	0.00
tblVehicleEF	HHD	0.02	0.22
tblVehicleEF	HHD	0.05	0.11
tblVehicleEF	HHD	6.31	5.12
tblVehicleEF	HHD	0.41	0.71
tblVehicleEF	HHD	6.0890e-003	7.8200e-004
tblVehicleEF	HHD	991.82	777.09
tblVehicleEF	HHD	1,327.03	1,519.26
tblVehicleEF	HHD	0.05	0.01
tblVehicleEF	HHD	0.16	0.13
tblVehicleEF	HHD	0.21	0.24
tblVehicleEF	HHD	4.0000e-006	7.0000e-006
tblVehicleEF	HHD	5.29	3.97

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tblVehicleEF	HHD	2.62	1.63
tblVehicleEF	HHD	2.32	2.75
tblVehicleEF	HHD	2.3520e-003	1.9390e-003
tblVehicleEF	HHD	0.06	0.08
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	2.2500e-003	1.8490e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8950e-003	8.7840e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	2.0000e-006	9.2000e-005
tblVehicleEF	HHD	7.1000e-005	2.9000e-005
tblVehicleEF	HHD	0.42	0.32
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	3.1000e-005	2.6100e-004
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	9.2270e-003	6.7480e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	2.0000e-006	9.2000e-005
tblVehicleEF	HHD	7.1000e-005	2.9000e-005
tblVehicleEF	HHD	0.49	0.57
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	0.07	0.12
tblVehicleEF	HHD	3.1000e-005	2.6100e-004
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	LDA	1.2360e-003	1.5380e-003

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tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.45	0.54
tblVehicleEF	LDA	1.86	2.42
tblVehicleEF	LDA	214.18	230.34
tblVehicleEF	LDA	45.42	59.41
tblVehicleEF	LDA	3.4320e-003	3.5100e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.14	0.20
tblVehicleEF	LDA	0.04	7.1090e-003
tblVehicleEF	LDA	1.1160e-003	1.0170e-003
tblVehicleEF	LDA	1.5010e-003	1.7230e-003
tblVehicleEF	LDA	0.02	2.4880e-003
tblVehicleEF	LDA	1.0270e-003	9.3500e-004
tblVehicleEF	LDA	1.3800e-003	1.5840e-003
tblVehicleEF	LDA	0.03	0.25
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	4.3670e-003	5.6030e-003
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.15	0.24
tblVehicleEF	LDA	2.1190e-003	2.2770e-003
tblVehicleEF	LDA	4.5000e-004	5.8700e-004
tblVehicleEF	LDA	0.03	0.25
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	6.3460e-003	8.1650e-003
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.16	0.26

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tblVehicleEF	LDT1	2.3950e-003	4.4930e-003
tblVehicleEF	LDT1	0.04	0.09
tblVehicleEF	LDT1	0.65	1.12
tblVehicleEF	LDT1	2.00	4.20
tblVehicleEF	LDT1	258.06	311.08
tblVehicleEF	LDT1	55.33	80.98
tblVehicleEF	LDT1	4.5300e-003	7.3650e-003
tblVehicleEF	LDT1	0.02	0.04
tblVehicleEF	LDT1	0.05	0.09
tblVehicleEF	LDT1	0.17	0.32
tblVehicleEF	LDT1	0.04	9.1980e-003
tblVehicleEF	LDT1	1.3260e-003	1.5760e-003
tblVehicleEF	LDT1	1.7710e-003	2.4760e-003
tblVehicleEF	LDT1	0.02	3.2190e-003
tblVehicleEF	LDT1	1.2200e-003	1.4490e-003
tblVehicleEF	LDT1	1.6290e-003	2.2770e-003
tblVehicleEF	LDT1	0.06	0.51
tblVehicleEF	LDT1	0.12	0.14
tblVehicleEF	LDT1	0.05	0.00
tblVehicleEF	LDT1	9.7520e-003	0.02
tblVehicleEF	LDT1	0.07	0.39
tblVehicleEF	LDT1	0.20	0.42
tblVehicleEF	LDT1	2.5540e-003	3.0750e-003
tblVehicleEF	LDT1	5.4800e-004	8.0100e-004
tblVehicleEF	LDT1	0.06	0.51
tblVehicleEF	LDT1	0.12	0.14
tblVehicleEF	LDT1	0.05	0.00
tblVehicleEF	LDT1	0.01	0.03
tblVehicleEF	LDT1	0.07	0.39

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tblVehicleEF	LDT1	0.22	0.46
tblVehicleEF	LDT2	2.2120e-003	2.2390e-003
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.62	0.71
tblVehicleEF	LDT2	2.44	3.08
tblVehicleEF	LDT2	271.88	320.53
tblVehicleEF	LDT2	58.84	81.54
tblVehicleEF	LDT2	4.6700e-003	5.0850e-003
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.04	0.05
tblVehicleEF	LDT2	0.20	0.28
tblVehicleEF	LDT2	0.04	8.8520e-003
tblVehicleEF	LDT2	1.1980e-003	1.1830e-003
tblVehicleEF	LDT2	1.5540e-003	1.9260e-003
tblVehicleEF	LDT2	0.02	3.0980e-003
tblVehicleEF	LDT2	1.1030e-003	1.0890e-003
tblVehicleEF	LDT2	1.4290e-003	1.7710e-003
tblVehicleEF	LDT2	0.05	0.27
tblVehicleEF	LDT2	0.10	0.07
tblVehicleEF	LDT2	0.05	0.00
tblVehicleEF	LDT2	8.6200e-003	8.4950e-003
tblVehicleEF	LDT2	0.06	0.20
tblVehicleEF	LDT2	0.23	0.31
tblVehicleEF	LDT2	2.6900e-003	3.1680e-003
tblVehicleEF	LDT2	5.8200e-004	8.0600e-004
tblVehicleEF	LDT2	0.05	0.27
tblVehicleEF	LDT2	0.10	0.07
tblVehicleEF	LDT2	0.05	0.00
tblVehicleEF	LDT2	0.01	0.01

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tblVehicleEF	LDT2	0.06	0.20
tblVehicleEF	LDT2	0.25	0.34
tblVehicleEF	LHD1	4.5230e-003	4.8530e-003
tblVehicleEF	LHD1	6.3000e-003	5.7620e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.18	0.19
tblVehicleEF	LHD1	0.57	0.71
tblVehicleEF	LHD1	0.96	2.15
tblVehicleEF	LHD1	8.56	8.33
tblVehicleEF	LHD1	734.83	729.06
tblVehicleEF	LHD1	10.77	17.05
tblVehicleEF	LHD1	7.3900e-004	6.2200e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.05	0.04
tblVehicleEF	LHD1	0.44	0.46
tblVehicleEF	LHD1	0.26	0.38
tblVehicleEF	LHD1	8.8400e-004	6.8500e-004
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	9.8520e-003	9.4090e-003
tblVehicleEF	LHD1	8.1460e-003	0.01
tblVehicleEF	LHD1	2.2600e-004	1.7400e-004
tblVehicleEF	LHD1	8.4600e-004	6.5600e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.4630e-003	2.3520e-003
tblVehicleEF	LHD1	7.7480e-003	0.01
tblVehicleEF	LHD1	2.0700e-004	1.6000e-004
tblVehicleEF	LHD1	1.6310e-003	0.11
tblVehicleEF	LHD1	0.06	0.03

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tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	8.6800e-004	0.00
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.18	0.16
tblVehicleEF	LHD1	0.06	0.10
tblVehicleEF	LHD1	8.3000e-005	8.1000e-005
tblVehicleEF	LHD1	7.1690e-003	7.1170e-003
tblVehicleEF	LHD1	1.0700e-004	1.6900e-004
tblVehicleEF	LHD1	1.6310e-003	0.11
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	8.6800e-004	0.00
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.18	0.16
tblVehicleEF	LHD1	0.06	0.10
tblVehicleEF	LHD2	2.7350e-003	2.7890e-003
tblVehicleEF	LHD2	5.8140e-003	5.4840e-003
tblVehicleEF	LHD2	6.0230e-003	0.01
tblVehicleEF	LHD2	0.13	0.14
tblVehicleEF	LHD2	0.52	0.46
tblVehicleEF	LHD2	0.53	1.16
tblVehicleEF	LHD2	13.44	13.54
tblVehicleEF	LHD2	713.12	776.37
tblVehicleEF	LHD2	6.94	9.14
tblVehicleEF	LHD2	1.7040e-003	1.6800e-003
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.08	0.08
tblVehicleEF	LHD2	0.54	0.66

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tblVehicleEF	LHD2	0.15	0.21
tblVehicleEF	LHD2	1.4770e-003	1.4220e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.1400e-004	7.4000e-005
tblVehicleEF	LHD2	1.4140e-003	1.3600e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.7030e-003	2.6620e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.0400e-004	6.8000e-005
tblVehicleEF	LHD2	7.8300e-004	0.06
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	4.3200e-004	0.00
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	1.2800e-004	1.3000e-004
tblVehicleEF	LHD2	6.8810e-003	7.4740e-003
tblVehicleEF	LHD2	6.9000e-005	9.0000e-005
tblVehicleEF	LHD2	7.8300e-004	0.06
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.3200e-004	0.00
tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	MCY	0.32	0.15

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tblVehicleEF	MCY	0.25	0.17
tblVehicleEF	MCY	17.99	11.71
tblVehicleEF	MCY	9.14	7.90
tblVehicleEF	MCY	209.89	186.47
tblVehicleEF	MCY	59.90	45.31
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	7.0870e-003
tblVehicleEF	MCY	1.14	0.54
tblVehicleEF	MCY	0.27	0.12
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	2.0840e-003	1.9590e-003
tblVehicleEF	MCY	2.9100e-003	3.4510e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	1.9450e-003	1.8300e-003
tblVehicleEF	MCY	2.7280e-003	3.2360e-003
tblVehicleEF	MCY	0.90	3.85
tblVehicleEF	MCY	0.65	3.56
tblVehicleEF	MCY	0.48	0.00
tblVehicleEF	MCY	2.15	0.96
tblVehicleEF	MCY	0.49	3.78
tblVehicleEF	MCY	1.90	1.23
tblVehicleEF	MCY	2.0770e-003	1.8430e-003
tblVehicleEF	MCY	5.9300e-004	4.4800e-004
tblVehicleEF	MCY	0.90	0.08
tblVehicleEF	MCY	0.65	3.56
tblVehicleEF	MCY	0.48	0.00
tblVehicleEF	MCY	2.69	1.17
tblVehicleEF	MCY	0.49	3.78
tblVehicleEF	MCY	2.07	1.34

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tblVehicleEF	MDV	2.3750e-003	2.6750e-003
tblVehicleEF	MDV	0.05	0.08
tblVehicleEF	MDV	0.63	0.76
tblVehicleEF	MDV	2.55	3.20
tblVehicleEF	MDV	327.97	384.38
tblVehicleEF	MDV	69.67	97.04
tblVehicleEF	MDV	6.1060e-003	6.4690e-003
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.05	0.07
tblVehicleEF	MDV	0.22	0.32
tblVehicleEF	MDV	0.04	8.9330e-003
tblVehicleEF	MDV	1.2330e-003	1.1780e-003
tblVehicleEF	MDV	1.5830e-003	1.8910e-003
tblVehicleEF	MDV	0.02	3.1260e-003
tblVehicleEF	MDV	1.1370e-003	1.0850e-003
tblVehicleEF	MDV	1.4560e-003	1.7380e-003
tblVehicleEF	MDV	0.06	0.31
tblVehicleEF	MDV	0.11	0.08
tblVehicleEF	MDV	0.06	0.00
tblVehicleEF	MDV	9.5210e-003	0.01
tblVehicleEF	MDV	0.06	0.24
tblVehicleEF	MDV	0.26	0.37
tblVehicleEF	MDV	3.2410e-003	3.7980e-003
tblVehicleEF	MDV	6.8900e-004	9.5900e-004
tblVehicleEF	MDV	0.06	0.31
tblVehicleEF	MDV	0.11	0.08
tblVehicleEF	MDV	0.06	0.00
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.06	0.24

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tblVehicleEF	MDV	0.28	0.41
tblVehicleEF	MH	6.9300e-003	8.8150e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.58	0.77
tblVehicleEF	MH	1.80	2.17
tblVehicleEF	MH	1,418.06	1,669.13
tblVehicleEF	MH	16.70	21.21
tblVehicleEF	MH	0.06	0.07
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.17	1.40
tblVehicleEF	MH	0.24	0.30
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.3200e-004	2.6700e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.2900e-003	3.3210e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.1400e-004	2.4600e-004
tblVehicleEF	MH	0.47	26.64
tblVehicleEF	MH	0.04	6.73
tblVehicleEF	MH	0.18	0.00
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	9.6720e-003	0.16
tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.6500e-004	2.1000e-004
tblVehicleEF	MH	0.47	26.64
tblVehicleEF	MH	0.04	6.73

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tblVehicleEF	MH	0.18	0.00
tblVehicleEF	MH	0.06	0.08
tblVehicleEF	MH	9.6720e-003	0.16
tblVehicleEF	MH	0.09	0.11
tblVehicleEF	MHD	3.6950e-003	0.01
tblVehicleEF	MHD	1.2530e-003	9.5450e-003
tblVehicleEF	MHD	8.5300e-003	7.5570e-003
tblVehicleEF	MHD	0.40	0.66
tblVehicleEF	MHD	0.18	0.22
tblVehicleEF	MHD	0.94	0.88
tblVehicleEF	MHD	68.38	154.32
tblVehicleEF	MHD	1,034.78	1,175.45
tblVehicleEF	MHD	8.72	7.64
tblVehicleEF	MHD	9.8750e-003	0.02
tblVehicleEF	MHD	0.13	0.15
tblVehicleEF	MHD	7.4170e-003	5.5230e-003
tblVehicleEF	MHD	0.37	0.81
tblVehicleEF	MHD	1.44	0.81
tblVehicleEF	MHD	1.70	1.37
tblVehicleEF	MHD	2.4000e-004	1.1860e-003
tblVehicleEF	MHD	0.13	0.04
tblVehicleEF	MHD	7.0420e-003	8.3150e-003
tblVehicleEF	MHD	1.1100e-004	9.3000e-005
tblVehicleEF	MHD	2.3000e-004	1.1340e-003
tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	6.7300e-003	7.9470e-003
tblVehicleEF	MHD	1.0200e-004	8.5000e-005
tblVehicleEF	MHD	3.1800e-004	0.02
tblVehicleEF	MHD	0.02	4.6660e-003

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tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	1.7500e-004	0.00
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.04	0.04
tblVehicleEF	MHD	6.4900e-004	1.4270e-003
tblVehicleEF	MHD	9.8700e-003	0.01
tblVehicleEF	MHD	8.6000e-005	7.6000e-005
tblVehicleEF	MHD	3.1800e-004	0.02
tblVehicleEF	MHD	0.02	4.6660e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.7500e-004	0.00
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.05	0.04
tblVehicleEF	OBUS	7.0730e-003	7.5660e-003
tblVehicleEF	OBUS	2.7540e-003	0.01
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.62	0.54
tblVehicleEF	OBUS	0.33	0.37
tblVehicleEF	OBUS	1.69	1.70
tblVehicleEF	OBUS	96.38	89.08
tblVehicleEF	OBUS	1,261.24	1,320.54
tblVehicleEF	OBUS	14.17	13.66
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.13	0.16
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.41	0.36
tblVehicleEF	OBUS	1.44	0.90

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tblVehicleEF	OBUS	1.12	1.00
tblVehicleEF	OBUS	1.3500e-004	3.7200e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	7.6000e-003	0.01
tblVehicleEF	OBUS	1.5100e-004	1.2700e-004
tblVehicleEF	OBUS	1.3000e-004	3.5600e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	7.2580e-003	0.01
tblVehicleEF	OBUS	1.3900e-004	1.1700e-004
tblVehicleEF	OBUS	1.0730e-003	0.07
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.04
tblVehicleEF	OBUS	4.8500e-004	0.00
tblVehicleEF	OBUS	0.02	0.04
tblVehicleEF	OBUS	0.04	0.08
tblVehicleEF	OBUS	0.08	0.08
tblVehicleEF	OBUS	9.1500e-004	8.4100e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.4000e-004	1.3500e-004
tblVehicleEF	OBUS	1.0730e-003	0.07
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	4.8500e-004	0.00
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	0.04	0.08
tblVehicleEF	OBUS	0.09	0.09
tblVehicleEF	SBUS	0.06	0.08
tblVehicleEF	SBUS	5.1390e-003	0.09
tblVehicleEF	SBUS	5.5510e-003	5.0470e-003

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tblVehicleEF	SBUS	2.58	1.76
tblVehicleEF	SBUS	0.42	0.81
tblVehicleEF	SBUS	0.77	0.68
tblVehicleEF	SBUS	343.48	187.75
tblVehicleEF	SBUS	1,012.23	995.30
tblVehicleEF	SBUS	4.55	3.88
tblVehicleEF	SBUS	0.05	0.02
tblVehicleEF	SBUS	0.13	0.12
tblVehicleEF	SBUS	5.5840e-003	4.6260e-003
tblVehicleEF	SBUS	3.12	1.26
tblVehicleEF	SBUS	3.92	2.08
tblVehicleEF	SBUS	1.00	0.51
tblVehicleEF	SBUS	2.7970e-003	1.0210e-003
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	5.7000e-005	4.3000e-005
tblVehicleEF	SBUS	2.6760e-003	9.7600e-004
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.6950e-003	2.6290e-003
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	5.3000e-005	4.0000e-005
tblVehicleEF	SBUS	6.7700e-004	0.03
tblVehicleEF	SBUS	6.5220e-003	8.5010e-003
tblVehicleEF	SBUS	0.29	0.19
tblVehicleEF	SBUS	3.1500e-004	0.00
tblVehicleEF	SBUS	0.07	0.05
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.03	0.03

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

tblVehicleEF	SBUS	3.2730e-003	1.7010e-003
tblVehicleEF	SBUS	9.6760e-003	9.2440e-003
tblVehicleEF	SBUS	4.5000e-005	3.8000e-005
tblVehicleEF	SBUS	6.7700e-004	0.03
tblVehicleEF	SBUS	6.5220e-003	8.5010e-003
tblVehicleEF	SBUS	0.41	0.31
tblVehicleEF	SBUS	3.1500e-004	0.00
tblVehicleEF	SBUS	0.09	0.15
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	UBUS	1.74	0.53
tblVehicleEF	UBUS	1.9120e-003	3.7050e-003
tblVehicleEF	UBUS	13.20	6.31
tblVehicleEF	UBUS	0.14	0.48
tblVehicleEF	UBUS	1,654.13	1,063.59
tblVehicleEF	UBUS	1.40	3.13
tblVehicleEF	UBUS	0.28	0.16
tblVehicleEF	UBUS	1.1770e-003	5.9640e-003
tblVehicleEF	UBUS	0.71	0.29
tblVehicleEF	UBUS	0.01	0.04
tblVehicleEF	UBUS	0.07	0.13
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	5.1700e-003	5.5380e-003
tblVehicleEF	UBUS	1.5000e-005	1.2000e-005
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	8.3320e-003	0.01
tblVehicleEF	UBUS	4.9450e-003	5.2950e-003
tblVehicleEF	UBUS	1.4000e-005	1.1000e-005
tblVehicleEF	UBUS	3.2000e-005	0.02

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

tblVehicleEF	UBUS	3.3900e-004	4.7600e-003
tblVehicleEF	UBUS	1.6000e-005	0.00
tblVehicleEF	UBUS	0.03	0.06
tblVehicleEF	UBUS	6.9000e-005	0.01
tblVehicleEF	UBUS	8.0430e-003	0.01
tblVehicleEF	UBUS	0.01	8.5740e-003
tblVehicleEF	UBUS	1.4000e-005	3.1000e-005
tblVehicleEF	UBUS	3.2000e-005	0.02
tblVehicleEF	UBUS	3.3900e-004	4.7600e-003
tblVehicleEF	UBUS	1.6000e-005	0.00
tblVehicleEF	UBUS	1.78	0.60
tblVehicleEF	UBUS	6.9000e-005	0.01
tblVehicleEF	UBUS	8.8060e-003	0.01
tblVehicleTrips	ST_TR	4.91	4.86
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	8.14	4.86
tblVehicleTrips	ST_TR	122.40	91.56
tblVehicleTrips	ST_TR	8.57	7.38
tblVehicleTrips	ST_TR	9.54	7.02
tblVehicleTrips	SU_TR	4.09	4.05
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	6.28	4.05
tblVehicleTrips	SU_TR	142.64	106.70
tblVehicleTrips	SU_TR	1.42	1.22
tblVehicleTrips	SU_TR	8.55	6.30
tblVehicleTrips	WD_TR	5.44	5.39
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	7.32	5.39
tblVehicleTrips	WD_TR	112.18	83.92

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tblVehicleTrips	WD_TR	34.80	29.98
tblVehicleTrips	WD_TR	9.44	6.95
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	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	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
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	0.00

2.0 Emissions Summary

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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2654	2.6477	2.3474	4.7200e-003	0.6580	0.1170	0.7750	0.2913	0.1082	0.3995	0.0000	413.2970	413.2970	0.1260	0.0000	416.4474
2024	0.1928	1.7611	2.1179	3.5300e-003	0.0000	0.0803	0.0803	0.0000	0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
2025	0.1785	1.6273	2.0991	3.5200e-003	0.0000	0.0689	0.0689	0.0000	0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
2026	3.8373	1.3711	1.8741	3.0900e-003	0.0000	0.0596	0.0596	0.0000	0.0559	0.0559	0.0000	267.3231	267.3231	0.0664	0.0000	268.9840
Maximum	**3.8373**	**2.6477**	**2.3474**	**4.7200e-003**	**0.6580**	**0.1170**	**0.7750**	**0.2913**	**0.1082**	**0.3995**	**0.0000**	**413.2970**	**413.2970**	**0.1260**	**0.0000**	**416.4474**

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					
2023	0.0786	1.5984	2.9306	4.7200e-003	0.1283	8.48E-03	0.1368	0.0568	8.48E-03	0.0653	0.0000	413.2965	413.2965	0.1260	0.0000	416.4469
2024	0.0699	1.4295	2.3415	3.5300e-003	0.0000	0.0111	0.0111	0.0000	0.0111	0.0111	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
2025	0.0696	1.424	2.3325	3.5200e-003	0.0000	0.011	0.0110	0.0000	0.011	0.0110	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
2026	3.7443	1.271	2.1079	3.0900e-003	0.0000	8.62E-03	8.6200e-003	0.0000	8.62E-03	8.6200e-003	0.0000	267.3228	267.3228	0.0664	0.0000	268.9837

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Maximum	3.7443	1.5984	2.9306	4.7200e-003	0.1283	0.0111	0.1368	0.0568	0.0111	0.0653	0.0000	413.2965	413.2965	0.1260	0.0000	416.4469

	ROG	NOx	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	11.43	22.74	-15.10	0.00	80.50	87.96	82.97	80.50	87.12	83.88	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	4-3-2023	7-2-2023	0.8248	0.4491
2	7-3-2023	10-2-2023	1.2806	0.7142
3	10-3-2023	1-2-2024	0.8128	0.5201
4	1-3-2024	4-2-2024	0.4847	0.3720
5	4-3-2024	7-2-2024	0.4847	0.3720
6	7-3-2024	10-2-2024	0.4901	0.3761
7	10-3-2024	1-2-2025	0.4893	0.3761
8	1-3-2025	4-2-2025	0.4448	0.3679
9	4-3-2025	7-2-2025	0.4497	0.3720
10	7-3-2025	10-2-2025	0.4546	0.3761
11	10-3-2025	1-2-2026	0.4546	0.3761
12	1-3-2026	4-2-2026	0.4448	0.3679
13	4-3-2026	7-2-2026	0.4497	0.3720
14	7-3-2026	9-30-2026	1.6614	1.6130
		Highest	1.6614	1.6130

2.2 Overall Operational

Unmitigated Operational

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7435	0.0729	6.3291	3.4000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	10.3557	10.3557	9.9900e-003	0.0000	10.6055
Energy	0.0574	0.5217	0.4382	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	6,597.2088	6,597.2088	0.2571	0.0403	6,615.6348
Mobile	8.9270	5.0333	50.9121	0.1104	10.9233	0.0731	10.9963	2.7223	0.0681	2.7904	0.0000	10,191.5911	10,191.5911	0.5941	0.4819	10,350.0529
Stationary	0.0550	0.0270	0.1403	2.6000e-004		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219
Waste						0.0000	0.0000		0.0000	0.0000	1,138.6819	0.0000	1,138.6819	67.2942	0.0000	2,821.0361
Water						0.0000	0.0000		0.0000	0.0000	41.8485	295.3551	337.2036	0.1561	0.0925	368.6619
Total	**13.7829**	**5.6548**	**57.8197**	**0.1141**	**10.9233**	**0.1489**	**11.0721**	**2.7223**	**0.1439**	**2.8662**	**1,180.5304**	**17,120.0432**	**18,300.5735**	**68.3150**	**0.6146**	**20,191.6132**

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	4.7435	0.0729	6.3291	3.4000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	10.3557	10.3557	9.9900e-003	0.0000	10.6055
Energy	0.0574	0.5217	0.4382	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	567.9003	567.9003	0.0109	0.0104	571.2751
Mobile	8.9270	5.0333	50.9121	0.1104	10.9233	0.0731	10.9963	2.7223	0.0681	2.7904	0.0000	10,191.5911	10,191.5911	0.5941	0.4819	10,350.05
Stationary	0.0550	0.0270	0.1403	2.6000e-004		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219
Waste						0.0000	0.0000		0.0000	0.0000	1,138.6819	0.0000	1,138.6819	67.2942	0.0000	2,821.04

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Water						0.0000	0.0000		0.0000	0.0000	41.8485	295.3551	337.2036	0.1561	0.0925	368.6619
Total	**13.7829**	**5.6548**	**57.8197**	**0.1141**	**10.9233**	**0.1489**	**11.0721**	**2.7223**	**0.1439**	**2.8662**	**1,180.5304**	**11,090.7346**	**12,271.2650**	**68.0688**	**0.5848**	**14,147.2534**

	ROG	NOx	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**	**35.22**	**32.95**	**0.36**	**4.86**	**29.94**

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	4/3/2023	6/9/2023	5	50	
2	Site Preparation	Site Preparation	6/10/2023	7/21/2023	5	30	
3	Grading	Grading	7/22/2023	11/3/2023	5	75	
4	Trenching	Trenching	7/22/2023	11/3/2023	5	75	assume overlap with grading
5	Building Construction	Building Construction	11/4/2023	9/4/2026	5	740	
6	Paving	Paving	9/5/2026	11/20/2026	5	55	
7	Architectural Coating	Architectural Coating	9/5/2026	11/20/2026	5	55	overlap

Acres of Grading (Site Preparation Phase): 45

Acres of Grading (Grading Phase): 225

Acres of Paving: 0

Residential Indoor: 1,570,195; Residential Outdoor: 523,398; Non-Residential Indoor: 720,000; Non-Residential Outdoor: 240,000; Striped Parking

OffRoad Equipment

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

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

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	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	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	50.00	20.00	LD_Mix	HHDT	HHDT
Site Preparation	7	0.00	0.00	0.00	10.80	50.00	20.00	LD_Mix	HHDT	HHDT
Grading	8	0.00	0.00	0.00	10.80	50.00	20.00	LD_Mix	HHDT	HHDT
Trenching	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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

Building Construction	9	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.1200e-003	0.0000	8.1200e-003	1.2300e-003	0.0000	1.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0567	0.5371	0.4911	9.7000e-004		0.0249	0.0249		0.0232	0.0232	0.0000	84.9802	84.9802	0.0238	0.0000	85.5752
Total	**0.0567**	**0.5371**	**0.4911**	**9.7000e-004**	**8.1200e-003**	**0.0249**	**0.0331**	**1.2300e-003**	**0.0232**	**0.0244**	**0.0000**	**84.9802**	**84.9802**	**0.0238**	**0.0000**	**85.5752**

Unmitigated Construction Off-Site

Date: 8/24/2021 12:33 PM

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5800e-003	0.0000	1.5800e-003	2.4000e-004	0.0000	2.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0146	0.3389	0.6169	9.7000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	84.9801	84.9801	0.0238	0.0000	85.5751
Total	**0.0146**	**0.3389**	**0.6169**	**9.7000e-004**	**1.5800e-003**	**1.5400e-003**	**3.1200e-003**	**2.4000e-004**	**1.5400e-003**	**1.7800e-003**	**0.0000**	**84.9801**	**84.9801**	**0.0238**	**0.0000**	**85.5751**

Mitigated Construction Off-Site

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

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

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2949	0.0000	0.2949	0.1515	0.0000	0.1515	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0399	0.4129	0.2737	5.7000e-004		0.0190	0.0190		0.0175	0.0175	0.0000	50.1760	50.1760	0.0162	0.0000	50.5817
Total	**0.0399**	**0.4129**	**0.2737**	**5.7000e-004**	**0.2949**	**0.0190**	**0.3139**	**0.1515**	**0.0175**	**0.1690**	**0.0000**	**50.1760**	**50.1760**	**0.0162**	**0.0000**	**50.5817**

Unmitigated Construction Off-Site

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0575	0.0000	0.0575	0.0296	0.0000	0.0296	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.1824	0.3444	5.7000e-004		9.3000e-004	9.3000e-004		9.3000e-004	9.3000e-004	0.0000	50.1760	50.1760	0.0162	0.0000	50.5817
Total	**0.0105**	**0.1824**	**0.3444**	**5.7000e-004**	**0.0575**	**9.3000e-004**	**0.0584**	**0.0296**	**9.3000e-004**	**0.0305**	**0.0000**	**50.1760**	**50.1760**	**0.0162**	**0.0000**	**50.5817**

Mitigated Construction Off-Site

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

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

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3550	0.0000	0.3550	0.1385	0.0000	0.1385	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1246	1.2943	1.0519	2.3300e-003		0.0534	0.0534		0.0491	0.0491	0.0000	204.5070	204.5070	0.0661	0.0000	206.1606
Total	**0.1246**	**1.2943**	**1.0519**	**2.3300e-003**	**0.3550**	**0.0534**	**0.4085**	**0.1385**	**0.0491**	**0.1877**	**0.0000**	**204.5070**	**204.5070**	**0.0661**	**0.0000**	**206.1606**

Unmitigated Construction Off-Site

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0692	0.0000	0.0692	0.0270	0.0000	0.0270	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0379	0.7227	1.3771	2.3300e-003		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	204.5068	204.5068	0.0661	0.0000	206.1603
Total	**0.0379**	**0.7227**	**1.3771**	**2.3300e-003**	**0.0692**	**3.8100e-003**	**0.0730**	**0.0270**	**3.8100e-003**	**0.0308**	**0.0000**	**204.5068**	**204.5068**	**0.0661**	**0.0000**	**206.1603**

Mitigated Construction Off-Site

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

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

3.5 Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0128	0.1157	0.2058	3.1000e-004		5.6900e-003	5.6900e-003		5.2300e-003	5.2300e-003	0.0000	27.2728	27.2728	8.8200e-003	0.0000	27.4933
Total	**0.0128**	**0.1157**	**0.2058**	**3.1000e-004**		**5.6900e-003**	**5.6900e-003**		**5.2300e-003**	**5.2300e-003**	**0.0000**	**27.2728**	**27.2728**	**8.8200e-003**	**0.0000**	**27.4933**

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.9900e-003	0.1362	0.2348	3.1000e-004		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	27.2727	27.2727	8.8200e-003	0.0000	27.4933
Total	**4.9900e-003**	**0.1362**	**0.2348**	**3.1000e-004**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**	**0.0000**	**27.2727**	**27.2727**	**8.8200e-003**	**0.0000**	**27.4933**

Mitigated Construction Off-Site

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

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

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

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	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	0.0315	0.2877	0.3249	5.4000e-004		0.0140	0.0140		0.0132	0.0132	0.0000	46.3610	46.3610	0.0110	0.0000	46.6367
Total	**0.0315**	**0.2877**	**0.3249**	**5.4000e-004**		**0.0140**	**0.0140**		**0.0132**	**0.0132**	**0.0000**	**46.3610**	**46.3610**	**0.0110**	**0.0000**	**46.6367**

Unmitigated Construction Off-Site

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

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0107	0.2182	0.3575	5.4000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	46.3609	46.3609	0.0110	0.0000	46.6366
Total	**0.0107**	**0.2182**	**0.3575**	**5.4000e-004**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**46.3609**	**46.3609**	**0.0110**	**0.0000**	**46.6366**

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

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

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

3.6 Building Construction - 2024

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	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

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

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

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	0.0699	1.4295	2.3415	3.5300e-003		0.0111	0.0111		0.0111	0.0111	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.0699**	**1.4295**	**2.3415**	**3.5300e-003**		**0.0111**	**0.0111**		**0.0111**	**0.0111**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

Mitigated Construction Off-Site

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

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

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

3.6 Building Construction - 2025

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	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0696	1.4240	2.3325	3.5200e-003		0.0110	0.0110		0.0110	0.0110	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.0696**	**1.4240**	**2.3325**	**3.5200e-003**		**0.0110**	**0.0110**		**0.0110**	**0.0110**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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**

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

3.6 Building Construction - 2026

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	0.1210	1.1036	1.4235	2.3900e-003		0.0467	0.0467		0.0439	0.0439	0.0000	205.2487	205.2487	0.0483	0.0000	206.4549
Total	**0.1210**	**1.1036**	**1.4235**	**2.3900e-003**		**0.0467**	**0.0467**		**0.0439**	**0.0439**	**0.0000**	**205.2487**	**205.2487**	**0.0483**	**0.0000**	**206.4549**

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

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0472	0.9657	1.5818	2.3900e-003		7.4900e-003	7.4900e-003		7.4900e-003	7.4900e-003	0.0000	205.2485	205.2485	0.0483	0.0000	206.4547
Total	**0.0472**	**0.9657**	**1.5818**	**2.3900e-003**		**7.4900e-003**	**7.4900e-003**		**7.4900e-003**	**7.4900e-003**	**0.0000**	**205.2485**	**205.2485**	**0.0483**	**0.0000**	**206.4547**

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 - 2026

Unmitigated Construction On-Site

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0252	0.2360	0.4009	6.3000e-004		0.0115	0.0115		0.0106	0.0106	0.0000	55.0530	55.0530	0.0178	0.0000	55.4981
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0252**	**0.2360**	**0.4009**	**6.3000e-004**		**0.0115**	**0.0115**		**0.0106**	**0.0106**	**0.0000**	**55.0530**	**55.0530**	**0.0178**	**0.0000**	**55.4981**

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

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.1900e-003	0.2761	0.4756	6.3000e-004		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	55.0529	55.0529	0.0178	0.0000	55.4980
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.1900e-003**	**0.2761**	**0.4756**	**6.3000e-004**		**1.0300e-003**	**1.0300e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**55.0529**	**55.0529**	**0.0178**	**0.0000**	**55.4980**

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 - 2026

Unmitigated Construction On-Site

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.6864					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7000e-003	0.0315	0.0498	8.0000e-005		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003	0.0000	7.0215	7.0215	3.8000e-004	0.0000	7.0310
Total	**3.6911**	**0.0315**	**0.0498**	**8.0000e-005**		**1.4200e-003**	**1.4200e-003**		**1.4200e-003**	**1.4200e-003**	**0.0000**	**7.0215**	**7.0215**	**3.8000e-004**	**0.0000**	**7.0310**

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

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.6864					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-003	0.0292	0.0504	8.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	7.0214	7.0214	3.8000e-004	0.0000	7.0310
Total	**3.6879**	**0.0292**	**0.0504**	**8.0000e-005**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**7.0214**	**7.0214**	**3.8000e-004**	**0.0000**	**7.0310**

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

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.9270	5.0333	50.9121	0.1104	10.9233	0.0731	10.9963	2.7223	0.0681	2.7904	0.0000	10,191.5911	10,191.5911	0.5941	0.4819	10,350.0529
Unmitigated	8.9270	5.0333	50.9121	0.1104	10.9233	0.0731	10.9963	2.7223	0.0681	2.7904	0.0000	10,191.5911	10,191.5911	0.5941	0.4819	10,350.0529

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	4,328.17	3,902.58	3252.15	9,500,926	9,500,926
City Park	0.00	0.00	0.00		
Condo/Townhouse	123.97	111.78	93.15	272,131	272,131
Enclosed Parking with Elevator	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	1,258.80	1,373.40	1600.50	1,536,174	1,536,174
Medical Office Building	13,940.70	3,431.70	567.30	20,607,744	20,607,744
Single Family Housing	166.80	168.48	151.20	380,650	380,650
Total	19,818.44	8,987.94	5,664.30	32,297,624	32,297,624

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43

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

Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624
City Park	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624
Condo/Townhouse	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624
Enclosed Parking with Elevator	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624
High Turnover (Sit Down Restaurant)	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624
Medical Office Building	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624
Single Family Housing	0.575564	0.056293	0.184251	0.115043	0.020151	0.005257	0.008159	0.006240	0.000877	0.000356	0.024310	0.000874	0.002624

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6,029.3085	6,029.3085	0.2463	0.0299	6,044.3598

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

NaturalGas Mitigated	0.0574	0.5217	0.4382	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	567.9003	567.9003	0.0109	0.0104	571.2751
NaturalGas Unmitigated	0.0574	0.5217	0.4382	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	567.9003	567.9003	0.0109	0.0104	571.2751

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	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
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	3.10905e+006	0.0168	0.1524	0.1280	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.9108	165.9108	3.1800e-003	3.0400e-003	166.8967
Medical Office Building	7.533e+006	0.0406	0.3693	0.3102	2.2200e-003		0.0281	0.0281		0.0281	0.0281	0.0000	401.9896	401.9896	7.7000e-003	7.3700e-003	404.3784
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0574**	**0.5217**	**0.4382**	**3.1300e-003**		**0.0396**	**0.0396**		**0.0396**	**0.0396**	**0.0000**	**567.9003**	**567.9003**	**0.0109**	**0.0104**	**571.2751**

Mitigated

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	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
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	3.10905e+006	0.0168	0.1524	0.1280	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.9108	165.9108	3.1800e-003	3.0400e-003	166.8967
Medical Office Building	7.533e+006	0.0406	0.3693	0.3102	2.2200e-003		0.0281	0.0281		0.0281	0.0281	0.0000	401.9896	401.9896	7.7000e-003	7.3700e-003	404.3784
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0574**	**0.5217**	**0.4382**	**3.1300e-003**		**0.0396**	**0.0396**		**0.0396**	**0.0396**	**0.0000**	**567.9003**	**567.9003**	**0.0109**	**0.0104**	**571.2751**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	3.10474e+006	1,137.8684	0.0465	5.6300e-003	1,140.7090
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	111515	40.8695	1.6700e-003	2.0000e-004	40.9715
Enclosed Parking with Elevator	4.58048e+006	1,678.7164	0.0686	8.3100e-003	1,682.9071

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

High Turnover (Sit Down Restaurant)	482550	176.8515	7.2200e-003	8.8000e-004	177.2930
Medical Office Building	7.98405e+006	2,926.1029	0.1195	0.0145	2,933.4075
Single Family Housing	187997	68.8998	2.8100e-003	3.4000e-004	69.0718
Total		**6,029.3085**	**0.2462**	**0.0299**	**6,044.3598**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

1655 Berryessa Mixed Use - Santa Clara County, Annual

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

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	4.7435	0.0729	6.3291	3.4000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	10.3557	10.3557	9.9900e-003	0.0000	10.6055
Unmitigated	4.7435	0.0729	6.3291	3.4000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	10.3557	10.3557	9.9900e-003	0.0000	10.6055

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	0.5749					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9772					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1915	0.0729	6.3291	3.4000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	10.3557	10.3557	9.9900e-003	0.0000	10.6055
Total	**4.7435**	**0.0729**	**6.3291**	**3.4000e-004**		**0.0351**	**0.0351**		**0.0351**	**0.0351**	**0.0000**	**10.3557**	**10.3557**	**9.9900e-003**	**0.0000**	**10.6055**

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

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	0.5749					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9772					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1915	0.0729	6.3291	3.4000e-004		0.0351	0.0351		0.0351	0.0351	0.0000	10.3557	10.3557	9.9900e-003	0.0000	10.6055
Total	**4.7435**	**0.0729**	**6.3291**	**3.4000e-004**		**0.0351**	**0.0351**		**0.0351**	**0.0351**	**0.0000**	**10.3557**	**10.3557**	**9.9900e-003**	**0.0000**	**10.6055**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			

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

Mitigated	337.2036	0.1561	0.0925	368.6619
Unmitigated	337.2036	0.1561	0.0925	368.6619

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	52.3187 / 32.9835	164.5723	0.0697	0.0410	178.5254
City Park	0 / 1.07233	1.3755	6.0000e-005	1.0000e-005	1.3790
Condo/Townhouse	1.49854 / 0.944733	4.7138	2.0000e-003	1.1700e-003	5.1134
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	4.55301 / 0.290617	11.0127	5.9300e-003	3.5500e-003	12.2187
Medical Office Building	58.3484 / 11.114	150.6106	0.0764	0.0455	166.0897
Single Family Housing	1.5637 / 0.985809	4.9187	2.0800e-003	1.2200e-003	5.3358
Total		**337.2036**	**0.1561**	**0.0925**	**368.6619**

Mitigated

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

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	52.3187 / 32.9835	164.5723	0.0697	0.0410	178.5254
City Park	0 / 1.07233	1.3755	6.0000e-005	1.0000e-005	1.3790
Condo/Townhouse	1.49854 / 0.944733	4.7138	2.0000e-003	1.1700e-003	5.1134
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	4.55301 / 0.290617	11.0127	5.9300e-003	3.5500e-003	12.2187
Medical Office Building	58.3484 / 11.114	150.6106	0.0764	0.0455	166.0897
Single Family Housing	1.5637 / 0.985809	4.9187	2.0800e-003	1.2200e-003	5.3358
Total		**337.2036**	**0.1561**	**0.0925**	**368.6619**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1,138.6819	67.2942	0.0000	2,821.0361
Unmitigated	1,138.6819	67.2942	0.0000	2,821.0361

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	369.38	74.9808	4.4312	0.0000	185.7618
City Park	0.08	0.0162	9.6000e-004	0.0000	0.0402
Condo/Townhouse	10.58	2.1476	0.1269	0.0000	5.3207
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	178.5	36.2339	2.1414	0.0000	89.7679
Medical Office Building	5022	1,019.4206	60.2460	0.0000	2,525.5714
Single Family Housing	28.98	5.8827	0.3477	0.0000	14.5741
Total		**1,138.6819**	**67.2942**	**0.0000**	**2,821.0361**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

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

Land Use	tons	MT/yr			
Apartments Mid Rise	369.38	74.9808	4.4312	0.0000	185.7618
City Park	0.08	0.0162	9.6000e-004	0.0000	0.0402
Condo/Townhouse	10.58	2.1476	0.1269	0.0000	5.3207
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	178.5	36.2339	2.1414	0.0000	89.7679
Medical Office Building	5022	1,019.4206	60.2460	0.0000	2,525.5714
Single Family Housing	28.98	5.8827	0.3477	0.0000	14.5741
Total		**1,138.6819**	**67.2942**	**0.0000**	**2,821.0361**

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
Emergency Generator	1	0	50	1341	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

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

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750 - 9999 HP)	0.0550	0.0270	0.1403	2.6000e-004		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219
Total	**0.0550**	**0.0270**	**0.1403**	**2.6000e-004**		**1.0800e-003**	**1.0800e-003**		**1.0800e-003**	**1.0800e-003**	**0.0000**	**25.5325**	**25.5325**	**3.5800e-003**	**0.0000**	**25.6219**

11.0 Vegetation

Attachment 3: EMFAC2021 Emissions and Adjustment Factors

Summary of Construction Traffic Emissions (EMFAC2021)

Pollutants YEAR	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2	CH4	N2O	CO2e
					Tons							*Metric Tons*		
Criteria Pollutants														
2023	0.3612	1.2945	3.2754	0.0132	0.7686	0.0929	0.8615	0.1156	0.0380	0.1537	1256.0774	0.0640	0.1205	1293.5752
2024	0.4843	1.7355	4.3912	0.0176	1.0304	0.1246	1.1549	0.1550	0.0510	0.2060	1683.9719	0.0858	0.1615	1734.2437
2025	0.4830	1.7308	4.3792	0.0176	1.0276	0.1242	1.1518	0.1546	0.0508	0.2054	1679.3709	0.0856	0.1611	1729.5054
2026	0.4287	1.5364	3.8873	0.0156	0.9121	0.1103	1.0224	0.1372	0.0451	0.1824	1490.7292	0.0760	0.1430	1535.2322
Toxic Air Contaminants (1 Mile Trip Length)														
2023	0.3197	0.4432	1.1880	0.0018	0.0750	0.0103	0.0853	0.0113	0.0046	0.0158	170.0037	0.0264	0.0231	177.5597
2024	0.4285	0.5942	1.5927	0.0024	0.1005	0.0139	0.1144	0.0151	0.0061	0.0212	227.9171	0.0354	0.0310	238.0471
2025	0.4274	0.5926	1.5883	0.0024	0.1002	0.0138	0.1141	0.0151	0.0061	0.0212	227.2944	0.0353	0.0309	237.3967
2026	0.3794	0.5260	1.4099	0.0021	0.0890	0.0123	0.1012	0.0134	0.0054	0.0188	201.7627	0.0314	0.0275	210.7302

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	1	750	50	75	10.8	50	20	LD_Mix	HDT_Mix	HHDT	8100	2500	1500
Site Preparation	18	1	540	30	0	10.8	50	20	LD_Mix	HDT_Mix	HHDT	5832	1500	0
Grading	20	1	1500	75	21,875	10.8	50	20	LD_Mix	HDT_Mix	HHDT	16200	3750	437500
Trenching	5	0	375	0	0	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	4050	0	0
Building Construction	1,129	314	835460	232360	0	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	9022968	1696228	0
Paving	15	0	825	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	8910	0	0
Architectural Coating	226	0	12430	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	134244	0	0

Number of Days Per Year					
2023	4/3/23	12/31/23	273	195	
2024	1/1/24	12/31/24	366	262	
2025	1/1/25	12/31/25	365	261	
2026	1/1/26	11/20/26	324	232	
			1328	**950**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	4/3/2023	6/9/2023	5	50
Site Preparation	6/10/2023	7/21/2023	5	30
Grading	7/22/2023	11/3/2023	5	75
Trenching	7/22/2023	11/3/2023	5	75
Building Construction	11/4/2023	9/4/2026	5	740
Paving	9/5/2026	11/20/2026	5	55
Architectural Coating	9/5/2026	11/20/2026	5	55

CalEEMod EMFAC2021 Emission Factors Input - 2027

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004853	0.002789	0.014761	0.218219477	0.007566	0	0	0.078917	0
A	CH4_RUNEX	0.001538	0.004493	0.002239	0.002675	0.005762	0.005484	0.009545	0.10604745	0.010157	0.533948107	0.151026	0.08989	0.008815
A	CH4_STREX	0.053702	0.085745	0.069469	0.078225	0.01948	0.010299	0.007557	6.86812E-08	0.015372	0.003705389	0.168253	0.005047	0.024503
A	CO_IDLEX	0	0	0	0	0.191268	0.138583	0.659814	5.124777958	0.540387	0	0	1.761417	0
A	CO_RUNEX	0.544775	1.115721	0.709007	0.758324	0.707092	0.45901	0.224798	0.708774151	0.368247	6.308397807	11.71041	0.810356	0.76998
A	CO_STREX	2.41599	4.203275	3.084615	3.203013	2.154654	1.156785	0.875978	0.000781552	1.69805	0.484950424	7.90164	0.676847	2.168054
A	CO2_NBIO_IDLEX	0	0	0	0	8.334523	13.53813	154.3221	777.0894715	89.07619	0	0	187.7451	0
A	CO2_NBIO_RUNEX	230.3437	311.0786	320.5327	384.3773	729.0592	776.3679	1175.453	1519.263619	1320.543	1063.591211	186.4654	995.3014	1669.128
A	CO2_NBIO_STREX	59.41318	80.98453	81.53887	97.04411	17.04736	9.141066	7.63784	0.012735171	13.65764	3.127643155	45.31465	3.877311	21.20521
A	NOX_IDLEX	0	0	0	0	0.042288	0.083489	0.810816	3.96507916	0.356426	0	0	1.262512	0
A	NOX_RUNEX	0.027958	0.092558	0.051348	0.065728	0.455172	0.65614	0.814699	1.633848814	0.90016	0.293792506	0.535092	2.082244	1.398837
A	NOX_STREX	0.198989	0.319548	0.27791	0.321671	0.381542	0.206004	1.371111	2.745433901	0.995087	0.037556507	0.117492	0.511229	0.298605
A	PM10_IDLEX	0	0	0	0	0.000685	0.001422	0.001186	0.001939125	0.000372	0	0	0.001021	0
A	PM10_PMBW	0.007109	0.009198	0.008852	0.008933	0.076704	0.089518	0.044837	0.081781797	0.049977	0.125979361	0.012	0.044568	0.044943
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009409	0.010648	0.012	0.03513541	0.012	0.044383261	0.004	0.010516	0.013285
A	PM10_RUNEX	0.001017	0.001576	0.001183	0.001178	0.011274	0.019444	0.008315	0.024472959	0.014286	0.005538264	0.001959	0.010893	0.026527
A	PM10_STREX	0.001723	0.002476	0.001926	0.001891	0.000174	7.39E-05	9.25E-05	2.86377E-07	0.000127	1.2111E-05	0.003451	4.34E-05	0.000267
A	PM25_IDLEX	0	0	0	0	0.000656	0.00136	0.001134	0.001848696	0.000356	0	0	0.000976	0
A	PM25_PMBW	0.002488	0.003219	0.003098	0.003126	0.026846	0.031331	0.015693	0.028623629	0.017492	0.044092776	0.0042	0.015599	0.01573
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002352	0.002662	0.003	0.008783853	0.003	0.011095815	0.001	0.002629	0.003321
A	PM25_RUNEX	0.000935	0.001449	0.001089	0.001085	0.010751	0.018587	0.007947	0.023410841	0.013659	0.005294889	0.00183	0.010405	0.025338
A	PM25_STREX	0.001584	0.002277	0.001771	0.001738	0.00016	6.79E-05	8.51E-05	2.63313E-07	0.000117	1.11356E-05	0.003236	3.99E-05	0.000246
A	ROG_DIURN	0.24955	0.50873	0.274048	0.313625	0.110209	0.057088	0.019771	9.1592E-05	0.072594	0.015803094	3.845178	0.034937	26.64487
A	ROG_HTSK	0.070665	0.139679	0.072649	0.080632	0.02672	0.013817	0.004666	2.90398E-05	0.015605	0.004759601	3.558844	0.008501	6.728387
A	ROG_IDLEX	0	0	0	0	0.019735	0.014654	0.023376	0.321590124	0.040418	0	0	0.19229	0
A	ROG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	ROG_RUNEX	0.005603	0.019412	0.008495	0.010814	0.066535	0.097184	0.023627	0.016287015	0.03901	0.059061252	0.961131	0.048783	0.065156
A	ROG_RUNLS	0.187625	0.39349	0.204937	0.237024	0.155779	0.077843	0.038655	0.000261472	0.08075	0.012090992	3.781493	0.022938	0.16219
A	ROG_STREX	0.237505	0.424158	0.312968	0.374715	0.095037	0.049675	0.040569	3.72501E-07	0.081469	0.013094076	1.228813	0.028623	0.099567
A	SO2_IDLEX	0	0	0	0	8.11E-05	0.00013	0.001427	0.006748096	0.000841	0	0	0.001701	0
A	SO2_RUNEX	0.002277	0.003075	0.003168	0.003798	0.007117	0.007474	0.011139	0.013717513	0.012583	0.00857389	0.001843	0.009244	0.016358
A	SO2_STREX	0.000587	0.000801	0.000806	0.000959	0.000169	9.04E-05	7.55E-05	1.259E-07	0.000135	3.09199E-05	0.000448	3.83E-05	0.00021
A	TOG_DIURN	0.24955	0.50873	0.274048	0.313625	0.110209	0.057088	0.019771	9.1592E-05	0.072594	0.015803094	0.084734	0.034937	26.64487
A	TOG_HTSK	0.070665	0.139679	0.072649	0.080632	0.02672	0.013817	0.004666	2.90398E-05	0.015605	0.004759601	3.558844	0.008501	6.728387
A	TOG_IDLEX	0	0	0	0	0.027926	0.01961	0.041291	0.570405698	0.053451	0	0	0.313614	0
A	TOG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	TOG_RUNEX	0.008165	0.028322	0.012381	0.015738	0.08106	0.112355	0.036334	0.124403846	0.054529	0.601085521	1.168054	0.146261	0.083601
A	TOG_RUNLS	0.187625	0.39349	0.204937	0.237024	0.155779	0.077843	0.038655	0.000261472	0.08075	0.012090992	3.781493	0.022938	0.16219
A	TOG_STREX	0.260038	0.4644	0.34266	0.410266	0.104053	0.054388	0.044418	4.07842E-07	0.089199	0.014336365	1.336388	0.031339	0.109013
A	N2O_IDLEX	0	0	0	0	0.000622	0.00168	0.02384	0.125416043	0.012876	0	0	0.024561	0
A	N2O_RUNEX	0.00351	0.007365	0.005085	0.006469	0.038764	0.079286	0.150702	0.242608661	0.155325	0.163486082	0.038022	0.121582	0.068779
A	N2O_STREX	0.027208	0.035136	0.033545	0.034764	0.03193	0.016916	0.005523	7.35107E-06	0.013429	0.005963729	0.007087	0.004626	0.032482

CalEEMod EMFAC2021 Fleet Mix Input - 2027

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.538301	0.033737	0.229575	0.125512	0.025083	0.006204	0.011015	0.022944	0.001707	0.001241	0.003508	0.000532	0.00064

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Con	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PM	PM10_PMI	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNI	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNI	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNI	TOG_DIUR	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2023	HHDT	Aggregate	Aggregate	Gasoline	3.454009	114.3093	114.3093	0	69.10781	0	8.107874	0	1.602501	0.00493	0	0.0017	0.005	0.035266	0.005362	0	0.001849	0.02	0.100759	2306.817	0	49.81185	0.340225	0	0.00018	0.208909	0	0.045697	2.104867	0	0.000979	0.158374	1.426645	10.65375	3.071416	0	0.001072	0.158374	1.426645	10.65375	0.040468	83.0074	0	1.02738	0.022805	0	0.000492
Santa Clara	2023	HHDT	Aggregate	Aggregate	Diesel	8235.059	991289	991289	0	120860.8	0	1.969368	63.40488	2.849455	0.025957	0.031631	0	0.008769	0.027531	0.027131	0.033061	0	0.035077	0.078661	1656.801	12241.32	0	0.000809	0.237446	0	0.26103	1.928625	0	0.017417	5.112156	0	0	0	0	0.019828	5.819801	0	0	0	0	0	0.214624	0.087393	74.20136	0	0.015689	0.115918	0
Santa Clara	2023	HHDT	Aggregate	Aggregate	Electricity	6.70171	411.5054	0	411.5054	103.2044	754.9233	0	0	0	0	0	0	0.00874	0.013383	0	0	0	0.03496	0.038238	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	HHDT	Aggregate	Aggregate	Natural Ga	753.7366	53295.97	53295.97	0	6914.034	0	1.208844	13.92832	0	0.001774	0.024237	0	0.009	0.046729	0.001929	0.02636	0	0.036	0.133512	1398.51	10630.2	0	2.44811	37.44665	0	0.285095	2.167036	0	0.054572	0.572265	0	0	0	0	2.520799	38.25947	0	0	0	0	0	0.860105	13.78246	74.03965	0	0	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Gasoline	601938.3	22370251	22370251	0	2795479	0	0.047412	0	0.27189	0.001217	0	0.001992	0.002	0.002656	0.001323	0	0.002167	0.008	0.007588	282.586	0	71.87767	0.002603	0	0.076449	0.004995	0	0.034134	0.01016	0	0.353794	0.094758	0.240611	1.480552	0.014823	0	0.387359	0.094758	0.240611	1.480552	0.033781	0.787617	0	3.436611	0.002794	0	0.000711
Santa Clara	2023	LDA	Aggregate	Aggregate	Diesel	1871.125	56220.8	56220.8	0	8000.531	0	0.238318	0	0	0.018559	0	0	0.002	0.002698	0.019399	0	0	0.008	0.007709	234.6327	0	0	0.001413	0	0	0.036966	0	0	0.030417	0	0	0	0	0	0.034627	0	0	0	0	0	0	0.00231	0.342459	0	0	0.002223	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Electricity	53751.15	2268185	0	2268185	265250.1	875706.7	0	0	0	0	0	0	0.002	0.001532	0	0	0	0.008	0.004377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Plug-in Hyb	15805.32	700610.9	356649.7	343961.3	65355	103886.6	0.00334	0	0.11551	0.000664	0	0.002171	0.002	0.001373	0.000722	0	0.002361	0.008	0.003922	141.9339	0	66.50966	0.000457	0	0.042604	0.000605	0	0.020916	0.001444	0	0.173285	0.040642	0.036088	0.447056	0.002108	0	0.189725	0.040642	0.036088	0.447056	0.019705	0.219019	0	1.339893	0.001403	0	0.000658
Santa Clara	2023	LDT1	Aggregate	Aggregate	Gasoline	53782.25	1744480	1744480	0	239737.9	0	0.143293	0	0.404336	0.00185	0	0.002837	0.002	0.003239	0.002012	0	0.003085	0.008	0.009253	333.6435	0	88.48953	0.006987	0	0.112557	0.010257	0	0.039834	0.031222	0	0.583212	0.174145	0.503091	2.807011	0.045546	0	0.638542	0.174145	0.503091	2.807011	0.035775	1.553409	0	5.660037	0.003298	0	0.000875
Santa Clara	2023	LDT1	Aggregate	Aggregate	Diesel	26.04714	391.8698	391.8698	0	75.17737	0	1.659056	0	0	0.24041	0	0	0.002	0.003728	0.25128	0	0	0.008	0.010651	415.6155	0	0	0.013928	0	0	0.06548	0	0	0.299852	0	0	0	0	0	0.341362	0	0	0	0	0	0	0.0031	1.601395	0	0	0.003938	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Electricity	194.8941	7068.184	0	7068.184	916.4832	2728.903	0	0	0	0	0	0	0.002	0.00154	0	0	0	0.008	0.0044	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Plug-in Hyb	43.27677	2048.369	944.1579	1104.211	178.9495	333.5047	0.003025	0	0.11551	0.000387	0	0.00141	0.002	0.001383	0.000421	0	0.001534	0.008	0.003951	128.5161	0	72.39136	0.000412	0	0.042439	0.000544	0	0.020762	0.001308	0	0.173285	0.024584	0.021781	0.285922	0.001909	0	0.189725	0.024584	0.021781	0.285922	0.019359	0.198314	0	1.339893	0.001271	0	0.000716
Santa Clara	2023	LDT2	Aggregate	Aggregate	Gasoline	280180.4	10140967	10140967	0	1311796	0	0.077207	0	0.358346	0.001265	0	0.002003	0.002	0.003125	0.001375	0	0.002179	0.008	0.008929	351.1382	0	90.07377	0.003121	0	0.087759	0.006381	0	0.038646	0.012417	0	0.410727	0.085119	0.224187	1.404898	0.018118	0	0.449694	0.085119	0.224187	1.404898	0.035545	0.896823	0	3.892097	0.003471	0	0.00089
Santa Clara	2023	LDT2	Aggregate	Aggregate	Diesel	978.4967	36936.87	36936.87	0	4673.401	0	0.046157	0	0	0.005431	0	0	0.002	0.003102	0.005677	0	0	0.008	0.008863	315.6668	0	0	0.00065	0	0	0.049733	0	0	0.013984	0	0	0	0	0	0.015919	0	0	0	0	0	0	0.0031	0.132099	0	0	0.002991	0	0
Santa Clara	2023	LDT2	Aggregate	Aggregate	Electricity	1105.879	38931.7	0	38931.7	5663.051	15030.85	0	0	0	0	0	0	0.002	0.001525	0	0	0	0.008	0.004357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	LDT2	Aggregate	Aggregate	Plug-in Hyb	1696.55	77270.66	37142.68	40127.98	7015.234	12119.85	0.003154	0	0.11551	0.000504	0	0.001759	0.002	0.001378	0.000548	0	0.001913	0.008	0.003938	134.0231	0	78.93358	0.000429	0	0.042457	0.000568	0	0.020778	0.001364	0	0.173285	0.02624	0.024448	0.318232	0.00199	0	0.189725	0.02624	0.024448	0.318232	0.020144	0.206812	0	1.339893	0.001325	0	0.000778
Santa Clara	2023	LHDT1	Aggregate	Aggregate	Gasoline	19180.96	711085.5	711085.5	0	285767.8	0	0.197814	0.037373	0.6588	0.001595	0	0.000328	0.002	0.0273	0.001734	0	0.000356	0.008	0.078	889.7424	120.2664	25.83956	0.009485	0.115635	0.034516	0.011082	0.003012	0.051891	0.047656	0.428153	0.172233	0.050564	0.277601	2.913784	0.069539	0.62476	0.188574	0.050564	0.277601	2.913784	0.044872	1.225109	3.753425	3.080251	0.008796	0.001189	0.000255
Santa Clara	2023	LHDT1	Aggregate	Aggregate	Diesel	9807.465	384084.8	384084.8	0	123365.6	0	1.780633	2.029274	0	0.038253	0.026974	0	0.003	0.0273	0.039983	0.028193	0	0.012	0.078	635.427	132.908	0	0.008623	0.005098	0	0.100112	0.02094	0	0.185652	0.10976	0	0	0	0	0.211352	0.124954	0	0	0	0	0	0.16551	0.518876	0.909745	0	0.006021	0.001259	0
Santa Clara	2023	LHDT2	Aggregate	Aggregate	Gasoline	2494.382	90793.04	90793.04	0	37162.58	0	0.187016	0.036817	0.642061	0.001446	0	0.00026	0.002	0.03185	0.001572	0	0.000283	0.008	0.091	997.3845	138.7974	25.72325	0.007074	0.114568	0.033461	0.01097	0.002967	0.050452	0.033047	0.42203	0.165607	0.046993	0.25097	2.676301	0.048222	0.615826	0.181319	0.046993	0.25097	2.676301	0.044967	0.961891	3.759407	3.119312	0.00986	0.001372	0.000254
Santa Clara	2023	LHDT2	Aggregate	Aggregate	Diesel	4479.532	176769.2	176769.2	0	56346.87	0	1.416942	1.998258	0	0.034177	0.027026	0	0.003	0.03185	0.035723	0.028248	0	0.012	0.091	764.5039	212.1206	0	0.007824	0.005098	0	0.120448	0.03342	0	0.168448	0.10976	0	0	0	0	0.191767	0.124954	0	0	0	0	0	0.178982	0.44054	0.909745	0	0.007244	0.00201	0
Santa Clara	2023	MCY	Aggregate	Aggregate	Gasoline	27894.5	164894.5	164894.5	0	55788.99	0	0.586927	0	0.142374	0.001778	0	0.003413	0.001	0.0042	0.001899	0	0.003626	0.004	0.012	188.3093	0	49.59811	0.167622	0	0.187482	0.040223	0	0.008379	1.105923	0	1.392636	3.5601	3.745685	3.947874	1.324135	0	1.513873	3.5601	3.745685	3.947874	0.00876	13.08956	0	8.051197	0.001862	0	0.00049
Santa Clara	2023	MDV	Aggregate	Aggregate	Gasoline	153799.1	5358084	5358084	0	712433.9	0	0.11759	0	0.470106	0.001289	0	0.002144	0.002	0.003187	0.001402	0	0.002331	0.008	0.009106	426.0995	0	109.7064	0.004406	0	0.110292	0.008479	0	0.043081	0.018826	0	0.559259	0.101975	0.285798	1.72733	0.02744	0	0.612315	0.101975	0.285798	1.72733	0.035428	1.067328	0	4.333252	0.004212	0	0.001085
Santa Clara	2023	MDV	Aggregate	Aggregate	Diesel	2374.918	86834.44	86834.44	0	11267.05	0	0.053096	0	0	0.00515	0	0	0.002	0.003181	0.005383	0	0	0.008	0.00909	413.3141	0	0	0.000529	0	0	0.013397	0	0	0.011397	0	0	0	0	0	0.012975	0	0	0	0	0	0	0.00231	0.202592	0	0	0.003916	0	0
Santa Clara	2023	MDV	Aggregate	Aggregate	Electricity	1130.115	40073.7	0	40073.7	5799.833	15471.76	0	0	0	0	0	0	0.002	0.001524	0	0	0	0.008	0.004354	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	MDV	Aggregate	Aggregate	Plug-in Hyb	986.0895	41899.14	20787.35	21111.79	4077.48	6376.389	0.003256	0	0.11551	0.000638	0	0.002151	0.002	0.001376	0.000693	0	0.002339	0.008	0.00393	138.3296	0	98.37574	0.000441	0	0.042261	0.000581	0	0.020595	0.001408	0	0.173285	0.02985	0.028058	0.359617	0.002054	0	0.189725	0.02985	0.028058	0.359617	0.020837	0.213457	0	1.339893	0.001368	0	0.000973
Santa Clara	2023	MH	Aggregate	Aggregate	Gasoline	2522.745	22546.87	22546.87	0	252.3754	0	0.479133	0	0.412521	0.001781	0	0.000428	0.003	0.015756	0.001937	0	0.000466	0.012	0.045017	1948.243	0	31.87585	0.018146	0	0.038028	0.02809	0	0.042647	0.082252	0	0.163779	13.03985	0.30297	4.773625	0.120022	0	0.179318	13.03985	0.30297	4.773625	0.044742	2.111943	0	3.629376	0.01926	0	0.000315
Santa Clara	2023	MH	Aggregate	Aggregate	Diesel	959.1578	9344.849	9344.849	0	95.91578	0	4.269554	0	0	0.097907	0	0	0.004	0.015675	0.102334	0	0	0.016	0.044785	1081.435	0	0	0.005704	0	0	0.17038	0	0	0.122812	0	0	0	0	0	0.139813	0	0	0	0	0	0	0.150005	0.410284	0	0	0.010247	0	0
Santa Clara	2023	MHDT	Aggregate	Aggregate	Gasoline	1418.703	70785.86	70785.86	0	28385.41	0	0.562864	0.088304	0.453053	0.001386	0	0.000555	0.003	0.015756	0.001507	0	0.000603	0.012	0.045017	1792.411	536.9661	47.19918	0.018074	0.254589	0.049387	0.026381	0.007064	0.032566	0.09086	1.010025	0.279571	0.037187	0.302385	3.037923	0.132583	1.473826	0.306095	0.037187	0.302385	3.037923	0.04497	1.909686	15.08517	6.156285	0.01772	0.005308	0.000467
Santa Clara	2023	MHDT	Aggregate	Aggregate	Diesel	10273.55	431550.4	431550.4	0	122418.2	0	1.337342	13.57242	1.624162	0.016518	0.035742	0	0.003	0.015941	0.017265	0.037358	0	0.012	0.045546	1151.562	2263.789	0	0.010721	0.012298	0	0.181429	0.356661	0	0.037048	0.26478	0	0	0	0	0.042176	0.301431	0	0	0	0	0	0.209014	0.132571	7.583386	0	0.010905	0.021437	0
Santa Clara	2023	MHDT	Aggregate	Aggregate	Electricity	4.749835	101.8022	0	101.8022	59.6458	108.685	0	0	0	0	0	0	0.003	0.00799	0	0	0	0.012	0.022828	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	MHDT	Aggregate	Aggregate	Natural Ga	83.841	4047.874	4047.874	0	762.81	0	0.141319	6.52743	0	0.001137	0.017647	0	0.003	0.016002	0.001236	0.019193	0	0.012	0.045721	989.385	5296.533	0	0.740055	17.59163	0	0.201693	1.079733	0	0.010574	0.25135	0	0	0	0	0.755281	17.95355	0	0	0	0	0	1.06	2.992708	33.64344	0	0	0	0
Santa Clara	2023	OBUS	Aggregate	Aggregate	Gasoline	458.8974	20830.08	20830.08	0	9181.619	0	0.553081	0.064991	0.405616	0.000893	0	0.000264	0.003	0.01568	0.000972	0	0.000287	0.012	0.044799	1784.092	381.8461	31.89445	0.015808	0.194938	0.036281	0.026177	0.005253	0.030766	0.078109	0.745234	0.192301	0.034706	0.154035	2.766253	0.113977	1.087444	0.210546	0.034706	0.154035	2.766253	0.044918	1.743956	5.768375	4.071703	0.017638	0.003775	0.000315
Santa Clara	2023	OBUS	Aggregate	Aggregate	Diesel	870.4209	61645.66	61645.66	0	8910.755	0	1.203188	7.410097	1.541404	0.020323	0.008632	0	0.003	0.018018	0.021242	0.009022	0	0.012	0.05148	1282.538	1552.949	0	0.001991	0.020568	0	0.202064	0.244668	0	0.04286	0.442828	0	0	0	0	0.048793	0.504126	0	0	0	0	0	0.215865	0.153454	7.510858	0	0.012145	0.014706	0
Santa Clara	2023	OBUS	Aggregate	Aggregate	Natural Ga	6.1456	409.5466	409.5466	0	54.69584	0	0.219315	1.549107	0	0.000923	0.00362	0	0.003	0.016148	0.001004	0.003937	0	0.012	0.046137	1017.405	1188.285	0	0.774069	4.381267	0	0.207405	0.24224	0	0.01106	0.0626	0	0	0	0	0.789994	4.471404	0	0	0	0	0	1.06	3.211954	6.724204	0	0	0	0
Santa Clara	2023	SBUS	Aggregate	Aggregate	Gasoline	166.9867	8309.308	8309.308	0	667.9468	0	0.519317	0.925703	0.7051	0.000862	0	0.000056	0.002	0.015721	0.000937	0	0.000609	0.008	0.044917	815.0909	2602.033	58.66947	0.011871	2.46208	0.074918	0.027733	0.086224	0.064904	0.057744	10.62943	0.427061	0.112221	0.259299	1.591441	0.084259	15.51043	0.467578	0.112221	0.259299	1.591441	0.045	1.469507	82.16746	10.56434	0.008058	0.025724	0.00058
Santa Clara	2023	SBUS	Aggregate	Aggregate	Diesel	667.1185	15392.68	15392.68	0	9659.876	0	4.028015	22.39863	0.467155	0.020908	0.02125	0	0.003	0.015721	0.021853	0.022211	0	0.012	0.044917	1148.524	2237.814	0	0.002748	0.008083	0	0.18095	0.352568	0	0.059161	0.174017	0	0	0	0	0.06735	0.198106	0	0	0	0	0	0.144154	0.181489	4.581854	0	0.010876	0.021191	0
Santa Clara	2023	SBUS	Aggregate	Aggregate	Electricity	0.302373	3.510494	0	3.510494	4.378365	3.69815	0	0	0	0	0	0	0.003	0.00786	0	0	0	0.012	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	SBUS	Aggregate	Aggregate	Natural Ga	23.50762	595.8705	595.8705	0	340.3903	0	0.587321	5.282702	0	0.003378	0.011076	0	0.003	0.015721	0.003674	0.012046	0	0.012	0.044917	1271.127	4058.811	0	3.490611	15.40242	0	0.259128	0.827415	0	0.049874	0.22007	0	0	0	0	0.3562424	15.7193	0	0	0	0	0	1.06	11.90284	20.11199	0	0	0	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Gasoline	45.94709	4798.244	4798.244	0	183.7884	0	0.026807	0	0.443444	0.001143	0	0.000128	0.002	0.03185	0.001243	0	0.00014	0.008	0.091	926.2924	0	36.84613	0.002031	0	0.041715	0.004215	0	0.070149	0.005614	0	0.147842	0.038144	0.09212	0.456803	0.008192	0	0.161868	0.038144	0.09212	0.456803	0.045	0.571128	0	6.073786	0.009157	0	0.000364
Santa Clara	2023	UBUS	Aggregate	Aggregate	Diesel	436.6681	48829.71	48829.71	0	1746.672	0	0.386256	0	0	0.007022	0	0	0.0083	0.0385	0.00734	0	0	0.0332	0.11	1100.965	0	0	0.003215	0	0	0.173457	0	0	0.069208	0	0	0	0	0	0.078788	0	0	0	0	0	0	0.18785	0.079368	0	0	0.010432	0	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Electricity	5.046757	199.0027	0	199.0027	20.18703	346.9103	0	0	0	0	0	0	0.009	0.01925	0	0	0	0.036	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Natural Ga	42.26114	4829.673	4829.673	0	169.0446	0	0.05878	0	0	0.000282	0	0	0.008182	0.0385	0.000295	0	0	0.032727	0.11	1299.127	0	0	4.245742	0	0	0.264835	0	0	0.060663	0	0	0	0	0	4.333091	0	0	0	0	0	0	0.97	49.04231	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2027
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Con	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STF	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PM	PM10_PM	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNI	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNI	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNI	TOG_DIUR	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2027	HHDT	Aggregate	Aggregate	Gasoline	1.833105	147.0378	147.0378	0	36.67677	0	3.730042	0	0.773498	0.002199	0	0.001027	0.005	0.032692	0.002391	0	0.001117	0.02	0.093405	2000.505	0	49.66925	0.135639	0	0.000268	0.136273	0	0.02867	0.73131	0	0.001453	0.11326	1.019783	7.147336	1.067126	0	0.001591	0.11326	1.019783	7.147336	0.044505	30.82312	0	3.048179	0.019777	0	0.000491
Santa Clara	2027	HHDT	Aggregate	Aggregate	Diesel	9011.071	1021241	1021241	0	132754.8	0	1.704043	61.72079	2.958034	0.025062	0.026785	0	0.008776	0.027672	0.026195	0.027996	0	0.035105	0.079063	1556.123	11312.44	0	0.000701	0.234878	0	0.245168	1.782279	0	0.015102	5.056861	0	0	0	0	0.017193	5.756851	0	0	0	0	0.21628	0.070456	73.92424	0	0.014736	0.107122	0
Santa Clara	2027	HHDT	Aggregate	Aggregate	Electricity	177.8052	18594.17	0	18594.17	2312.242	34279.09	0	0	0	0	0	0	0.008561	0.015051	0	0	0	0.034243	0.043002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2027	HHDT	Aggregate	Aggregate	Natural Ga	889.1692	57261.81	57261.81	0	7941.659	0	0.907136	12.38898	0	0.001615	0.025966	0	0.009	0.049992	0.001756	0.028241	0	0.036	0.142836	1353.997	10371.37	0	2.019211	32.72582	0	0.276021	2.114271	0	0.040872	0.488388	0	0	0	0	0.827361	12.24575	75.28309	0	0	0	0.827361	12.24575	75.28309	0	0	0	0
Santa Clara	2027	LDA	Aggregate	Aggregate	Gasoline	599340.5	21995339	21995339	0	2782742	0	0.032349	0	0.225312	0.001054	0	0.001765	0.002	0.002654	0.001146	0	0.001919	0.008	0.007584	263.8358	0	66.33426	0.001782	0	0.060463	0.004024	0	0.030664	0.009466	0	0.267784	0.080009	0.214602	1.316821	0.037295	0.628802	0	2.737589	0.002608	0	0.000656
Santa Clara	2027	LDA	Aggregate	Aggregate	Diesel	1347.748	38343.79	38343.79	0	5721.586	0	0.140881	0	0	0.011715	0	0	0.002	0.00272	0.012244	0	0	0.008	0.007772	225.3761	0	0	0.000974	0	0	0.035508	0	0	0.020977	0	0	0	0	0	0.023881	0	0	0	0	0	0.0031	0.295578	0	0	0.002136	0	0
Santa Clara	2027	LDA	Aggregate	Aggregate	Electricity	67294.12	2805164	0	2805164	324882.8	1083025	0	0	0	0	0	0	0.002	0.001535	0	0	0	0.008	0.004387	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2027	LDA	Aggregate	Aggregate	Plug-in Hyb	21617.53	903738.3	422627.3	481111	89388.5	145309.9	0.003069	0	0.11551	0.000505	0	0.001811	0.002	0.001389	0.000549	0	0.00197	0.008	0.00397	130.3968	0	63.69406	0.000412	0	0.041864	0.000538	0	0.020225	0.001327	0	0.173285	0.041139	0.041737	0.463414	0.001936	0	0.189725	0.041139	0.041737	0.463414	0.018819	0.201249	0	1.339893	0.001289	0	0.00063
Santa Clara	2027	LDT1	Aggregate	Aggregate	Gasoline	49888.15	1593479	1593479	0	222126.9	0	0.093626	0	0.322281	0.001455	0	0.002295	0.002	0.003241	0.001582	0	0.002496	0.008	0.009259	314.3854	0	81.55325	0.004547	0	0.086445	0.007451	0	0.035413	0.019635	0	0.427723	0.140959	0.397237	2.286124	0.028652	0	0.468303	0.140959	0.397237	2.286124	0.037251	1.12869	0	4.23978	0.003108	0	0.000806
Santa Clara	2027	LDT1	Aggregate	Aggregate	Diesel	6.227876	90.54084	90.54084	0	17.39549	0	1.298199	0	0	0.195794	0	0	0.002	0.003665	0.204647	0	0	0.008	0.010473	394.8653	0	0	0.011321	0	0	0.062211	0	0	0.243739	0	0	0	0	0	0.27748	0	0	0	0	0	0.0031	1.74279	0	0	0.003742	0	0
Santa Clara	2027	LDT1	Aggregate	Aggregate	Electricity	300.4983	12309.71	0	12309.71	1437.605	4752.566	0	0	0	0	0	0	0.002	0.001535	0	0	0	0.008	0.004385	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2027	LDT1	Aggregate	Aggregate	Plug-in Hyb	168.315	7479.707	3153.075	4326.632	695.9826	1306.772	0.002766	0	0.11551	0.000305	0	0.001223	0.002	0.0014	0.000332	0	0.00133	0.008	0.003999	117.5444	0	68.77997	0.000369	0	0.041651	0.00048	0	0.020025	0.001196	0	0.173285	0.023215	0.020021	0.275602	0.001745	0	0.189725	0.023215	0.020021	0.275602	0.017705	0.181413	0	1.339893	0.001162	0	0.00068
Santa Clara	2027	LDT2	Aggregate	Aggregate	Gasoline	301290.3	10685987	10685987	0	1406457	0	0.052589	0	0.283866	0.001098	0	0.001802	0.002	0.003137	0.001194	0	0.00196	0.008	0.008963	326.5481	0	82.86482	0.002292	0	0.07083	0.005044	0	0.034203	0.008665	0	0.319239	0.07425	0.209956	1.308636	0.012643	0	0.349526	0.07425	0.209956	1.308636	0.038412	0.725393	0	3.150133	0.003228	0	0.000819
Santa Clara	2027	LDT2	Aggregate	Aggregate	Diesel	1103.123	39708.7	39708.7	0	5205.703	0	0.033914	0	0	0.004292	0	0	0.002	0.003135	0.004487	0	0	0.008	0.008958	297.5211	0	0	0.000577	0	0	0.046875	0	0	0.012423	0	0	0	0	0	0.014142	0	0	0	0	0	0.0031	0.127877	0	0	0.002819	0	0
Santa Clara	2027	LDT2	Aggregate	Aggregate	Electricity	3306.06	108939.5	0	108939.5	16647.44	42059.66	0	0	0	0	0	0	0.002	0.001529	0	0	0	0.008	0.004368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2027	LDT2	Aggregate	Aggregate	Plug-in Hyb	3429.213	144081.9	63603.3	80478.56	14179.8	24306.92	0.002897	0	0.11551	0.000381	0	0.001463	0.002	0.001395	0.000414	0	0.001581	0.008	0.003987	123.0899	0	75.68447	0.000386	0	0.0416	0.000501	0	0.019977	0.001253	0	0.173285	0.025755	0.022981	0.300816	0.001828	0	0.189725	0.025755	0.022981	0.300816	0.018524	0.189972	0	1.339893	0.001217	0	0.000748
Santa Clara	2027	LHDT1	Aggregate	Aggregate	Gasoline	19670.43	736983.5	736983.5	0	293060.1	0	0.118942	0.033105	0.571033	0.001405	0	0.000239	0.002	0.0273	0.001528	0	0.00026	0.008	0.078	829.449	115.9534	25.51381	0.005601	0.105399	0.029155	0.00682	0.002869	0.047788	0.026962	0.379506	0.142236	0.03999	0.233145	2.457411	0.039343	0.553775	0.15573	0.03999	0.233145	2.457411	0.044981	0.93654	3.763109	3.224747	0.0082	0.001146	0.000252
Santa Clara	2027	LHDT1	Aggregate	Aggregate	Diesel	10848.44	422662.3	422662.3	0	136459.7	0	1.08439	1.64968	0	0.028062	0.026509	0	0.003	0.0273	0.029331	0.027708	0	0.012	0.078	622.7952	126.7206	0	0.006587	0.005098	0	0.098122	0.019965	0	0.141815	0.10976	0	0	0	0	0.161447	0.124954	0	0	0	0	0.188998	0.373722	0.909745	0	0.005901	0.001201	0
Santa Clara	2027	LHDT1	Aggregate	Aggregate	Electricity	649.0881	39875.83	0	39875.83	9086.427	26117.1	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2027	LHDT2	Aggregate	Aggregate	Gasoline	2509.546	90648.2	90648.2	0	37388.49	0	0.111653	0.032331	0.561944	0.001268	0	0.000185	0.002	0.03185	0.00138	0	0.000201	0.008	0.091	938.4469	134.3401	24.9353	0.003988	0.102929	0.028094	0.007002	0.002754	0.046144	0.017533	0.370918	0.135504	0.037689	0.212342	2.320101	0.025583	0.541243	0.14836	0.037689	0.212342	2.320101	0.044994	0.742979	3.770326	3.155517	0.009278	0.001328	0.000247
Santa Clara	2027	LHDT2	Aggregate	Aggregate	Diesel	5135.734	196396.2	196396.2	0	64601.07	0	0.939745	1.642203	0	0.027496	0.027012	0	0.003	0.03185	0.028739	0.028234	0	0.012	0.091	739.7686	203.2066	0	0.006444	0.005098	0	0.116551	0.032015	0	0.13873	0.10976	0	0	0	0	0.157935	0.124954	0	0	0	0	0.195561	0.350532	0.909745	0	0.00701	0.001925	0
Santa Clara	2027	LHDT2	Aggregate	Aggregate	Electricity	164.9398	9665.772	0	9665.772	2187.868	6234.965	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2027	MCY	Aggregate	Aggregate	Gasoline	29075.8	167761.7	167761.7	0	58151.6	0	0.535092	0	0.117492	0.00183	0	0.003236	0.001	0.0042	0.001959	0	0.003451	0.004	0.012	186.4654	0	45.31465	0.151026	0	0.168253	0.038022	0	0.007087	0.961131	0	1.228813	3.558844	3.781493	3.845178	1.168054	0	1.336388	3.558844	3.781493	3.845178	0.088923	11.71041	0	7.90164	0.001843	0	0.000448
Santa Clara	2027	MDV	Aggregate	Aggregate	Gasoline	165596	5720178	5720178	0	767968.9	0	0.06839	0	0.336026	0.001074	0	0.001805	0.002	0.003182	0.001168	0	0.001963	0.008	0.009092	395.7552	0	100.7218	0.002795	0	0.081565	0.005877	0	0.036232	0.011189	0	0.391	0.084223	0.248249	1.520956	0.016327	0	0.428096	0.084223	0.248249	1.520956	0.038107	0.790051	0	3.34381	0.003912	0	0.000996
Santa Clara	2027	MDV	Aggregate	Aggregate	Diesel	2435.715	83100.92	83100.92	0	13312.15	0	0.036863	0	0	0.004069	0	0	0.002	0.003253	0.004253	0	0	0.008	0.009296	394.7915	0	0	0.000446	0	0	0.0622	0	0	0.009604	0	0	0	0	0	0.010934	0	0	0	0	0	0.0031	0.194438	0	0	0.003741	0	0
Santa Clara	2027	MDV	Aggregate	Aggregate	Electricity	3455.571	113998.9	0	113998.9	17408.95	44012.98	0	0	0	0	0	0	0.002	0.001529	0	0	0	0.008	0.004368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2027	MDV	Aggregate	Aggregate	Plug-in Hyb	2094.107	84934.84	37715.29	47219.56	8659.133	14261.71	0.002914	0	0.11551	0.000422	0	0.001593	0.002	0.001395	0.000459	0	0.001732	0.008	0.003987	123.818	0	92.75106	0.000387	0	0.041448	0.0005	0	0.019836	0.00126	0	0.173285	0.029525	0.02765	0.340516	0.001839	0	0.189725	0.029525	0.02765	0.340516	0.01865	0.191096	0	1.339893	0.001224	0	0.000917
Santa Clara	2027	MH	Aggregate	Aggregate	Gasoline	2196.554	20762.47	20762.47	0	219.7432	0	0.298167	0	0.437987	0.001494	0	0.00036	0.003	0.015756	0.001625	0	0.000392	0.012	0.045017	1946.251	0	31.10334	0.010537	0	0.035941	0.020581	0	0.047644	0.043279	0	0.146043	9.869053	0.237897	3.909775	0.063153	0	0.159898	9.869053	0.237897	3.909775	0.044964	0.962497	0	3.180054	0.019241	0	0.000307
Santa Clara	2027	MH	Aggregate	Aggregate	Diesel	1025.714	9821.237	9821.237	0	102.5714	0	3.725695	0	0	0.075744	0	0	0.004	0.015675	0.079169	0	0	0.016	0.044785	1083.28	0	0	0.005175	0	0	0.170671	0	0	0.111405	0	0	0	0	0	0.126828	0	0	0	0	0	0.169608	0.362991	0	0	0.010265	0	0
Santa Clara	2027	MHDT	Aggregate	Aggregate	Gasoline	1408.047	72579.6	72579.6	0	28383.8	0.08115	0.393455	0.001336	0	0.000488	0.003	0.015756	0.001453	0	0.000531	0.012	0.045017	1709.11	517.1016	43.80548	0.009103	0.265767	0.043342	0.015723	0.007017	0.031676	0.04359	1.018957	0.232679	0.026764	0.221698	2.268825	0.063606	1.48686	0.254754	0.026764	0.221698	2.268825	0.045	0.873344	15.1889	5.024018	0.016896	0.005112	0.000433
Santa Clara	2027	MHDT	Aggregate	Aggregate	Diesel	10767.26	434295.5	434295.5	0	128657.2	0	0.939446	12.08814	1.635782	0.009401	0.016812	0	0.003	0.015941	0.009826	0.017572	0	0.012	0.045545	1128.563	2191.462	0	0.000987	0.009987	0	0.177806	0.345266	0	0.021244	0.215016	0	0	0	0	0.024185	0.244779	0	0	0	0	0.214146	0.090922	7.512068	0	0.010687	0.020752	0
Santa Clara	2027	MHDT	Aggregate	Aggregate	Electricity	282.6209	14714.25	0	14714.25	3656.161	16080.41	0	0	0	0	0	0	0.003	0.00795	0	0	0	0.012	0.022715	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2027	MHDT	Aggregate	Aggregate	Natural Ga	116.0954	5192.025	5192.025	0	1091.191	0	0.109888	6.361962	0	0.001299	0.019267	0	0.003	0.016009	0.001413	0.020955	0	0.012	0.045741	968.913	5260.482	0	0.758684	16.39433	0	0.197519	1.072384	0	0.01084	0.234243	0	0	0	0	0.774293	16.73162	0	0	0	0	1.06	2.994053	37.37847	0	0	0	0
Santa Clara	2027	OBUS	Aggregate	Aggregate	Gasoline	407.8269	17375.97	17375.97	0	8159.8	0	0.387611	0.061312	0.399202	0.001003	0	0.000264	0.003	0.01568	0.001091	0	0.000287	0.012	0.044799	1706.278	372.2847	30.84881	0.010578	0.195621	0.034722	0.019382	0.004991	0.030332	0.051093	0.746785	0.184017	0.035247	0.182391	3.280727	0.074554	1.089707	0.201475	0.035247	0.182391	3.280727	0.04499	1.115566	5.777658	3.835425	0.016868	0.00368	0.000305
Santa Clara	2027	OBUS	Aggregate	Aggregate	Diesel	975.8726	63044.62	63044.62	0	10038.86	0	1.057611	6.690487	1.502438	0.017399	0.006668	0	0.003	0.018093	0.018186	0.006697	0	0.012	0.051694	1229.962	1514.616	0	0.001687	0.020933	0	0.193781	0.238628	0	0.036317	0.450692	0	0	0	0	0.041344	0.513079	0	0	0	0	0.216551	0.134702	7.701933	0	0.011647	0.014343	0
Santa Clara	2027	OBUS	Aggregate	Aggregate	Electricity	7.148004	573.2173	0	573.2173	143.0173	635.037	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.022399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2027	OBUS	Aggregate	Aggregate	Natural Ga	10.00472	655.306	655.306	0	89.042	0	0.130414	1.511841	0	0.001347	0.004509	0	0.003	0.016148	0.001465	0.004904	0	0.012	0.046137	962.0387	1183.268	0	0.822734	3.921152	0	0.196118	0.241217	0	0.011755	0.056026	0	0	0	0	0.839661	4.001823	0	0	0	0	1.06	3.343066	8.72839	0	0	0	0
Santa Clara	2027	SBUS	Aggregate	Aggregate	Gasoline	188.5987	9259.272	9259.272	0	754.3948	0	0.450353	0.871777	0.740409	0.000875	0	0.000586	0.002	0.015721	0.000952	0	0.000637	0.008	0.044917	798.7707	2554.986	56.83783	0.009468	2.468092	0.07398	0.025075	0.081195	0.067806	0.045802	10.63953	0.419588	0.124616	0.336253	2.048577	0.066835	15.52518	0.459397	0.124616	0.336253	2.048577	0.045	1.177716	82.22881	9.921963	0.007897	0.025259	0.000562
Santa Clara	2027	SBUS	Aggregate	Aggregate	Diesel	674.8268	15110.62	15110.62	0	9771.491	0	3.20468	20.2361	0.521414	0.016822	0.015508	0	0.003	0.015721	0.017582	0.016209	0	0.012	0.044917	1131.356	2199.096	0	0.002413	0.007856	0	0.178246	0.346468	0	0.05196	0.169144	0	0	0	0	0.059153	0.192557	0	0	0	0	0.159585	0.164971	4.989511	0	0.010713	0.020824	0
Santa Clara	2027	SBUS	Aggregate	Aggregate	Electricity	12.30338	395.5247	0	395.5247	141.8818	416.6678	0	0	0	0	0	0	0.003	0.00257	0.00786	0	0	0	0.010282	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2027	SBUS	Aggregate	Aggregate	Natural Ga	27.00068	655.8362	655.8362	0	390.9698	0	0.516279	5.240894	0	0.003378	0.012073	0	0.003	0.015721	0.003674	0.01313	0	0.012	0.044917	1235.508	4086.873	0	3.295023	14.88623	0	0.251866	0.833136	0	0.047079	0.212695	0	0	0	0	0.362812	15.19249	0	0	0	0	1.06	10.98242	22.36041	0	0	0	0
Santa Clara	2027	UBUS	Aggregate	Aggregate	Gasoline	46.49126	4855.072	4855.072	0	185.9651	0	0.026613	0	0.433152	0.001143	0	0.000128	0.002	0.03185	0.001244	0	0.00014	0.008	0.091	925.4384	0	36.07215	0.001903	0	0.042735	0.004171	0	0.068782	0.005254	0	0.151018	0.054894	0.139449	0.729049	0.007666	0	0.165346	0.054894	0.139449	0.729049	0.045	0.595487	0	5.593095	0.009149	0	0.000357
Santa Clara	2027	UBUS	Aggregate	Aggregate	Diesel	397.2804	44140.83	44140.83	0	1589.121	0	0.382078	0	0	0.006946	0	0	0.008	0.08221	0.0385	0.00726	0	0	0.032883	0.11	1110.45	0	0	0.003187	0	0	0.174952	0	0	0.068626	0	0	0	0	0.078125	0	0	0	0	0	0.22	0.078519	0	0	0.010522	0	0
Santa Clara	2027	UBUS	Aggregate	Aggregate	Electricity	29.37609	3075.292	0	3075.292	117.5043	5360.985	0	0	0	0	0	0	0.008	0.08954	0.01925	0	0	0	0.035816	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2027	UBUS	Aggregate	Aggregate	Natural Ga	63.05154	7280.138	7280.138	0	252.2062	0	0.060784	0	0	0.000288	0	0	0.008	0.08445	0.0385	0.000301	0	0	0.03378	0.11	1320.896	0	0	4.332417	0	0	0.269273	0	0	0.061902	0	0	0	0	0.442149	0	0	0	0	0	0.97	50.55602	0	0	0	0	0

Attachment 4: Project Construction and Operation Dispersion Modeling Inputs and Risk Calculations

Construction Emissions and Health Risks

	DPM					
	Unmitigated DPM	DPM EMFAC2021	Unmitigated Emissions	Mitigated DPM	DPM EMFAC2021	Mitigated Emissions
2023	0.117	0.010	0.127	0.008	0.010	0.019
2024	0.080	0.014	0.094	0.011	0.014	0.025
2025	0.069	0.014	0.083	0.011	0.014	0.025
2026	0.060	0.012	0.072	0.009	0.012	0.021
	Fugitive PM2.5					
	Unmitigated Fug PM2.5	Fug PM2.5 EMFAC2021	Unmitigated Emissions	Mitigated Fug PM2.5	Fug PM2.5 EMFAC2021	Mitigated Emissions
2023	0.291	0.011	0.303	0.057	0.011	0.068
2024	0.000	0.015	0.015	0.000	0.015	0.015
2025	0.000	0.015	0.015	0.000	0.015	0.015
2026	0.000	0.013	0.013	0.000	0.013	0.013

1655 Berryessa Road, San Jose, CA

DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Emissions per Point Source (g/s)
2023	Construction	0.1273	Point	134	254.7	0.07753	9.77E-03	7.29E-05
2024	Construction	0.0942	Point	134	188.4	0.05734	7.22E-03	5.39E-05
2025	Construction	0.0827	Point	134	165.5	0.05037	6.35E-03	4.74E-05
2026	Construction	0.0719	Point	134	143.8	0.04376	5.51E-03	4.12E-05
Total		***0.3761***		***536***	***752***	***0.2290***		

Construction Hours

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

1655 Berryessa Road, San Jose, CA

PM2.5 Fugitive Construction Emissions and Modeling Emission Rates

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2023	Construction	FUG	0.3026	605.2	0.18422	2.32E-02	52,718	4.40E-07
2024	Construction	FUG	0.0151	30.2	0.00921	1.16E-03	52,718	2.20E-08
2025	Construction	FUG	0.0151	30.2	0.00918	1.16E-03	52,718	2.19E-08
2026	Construction	FUG	0.0134	26.8	0.00815	1.03E-03	52,718	1.95E-08
Total			***0.3462***	***692***	***0.2108***	***0.0266***		

Construction Hours

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

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Emissions per Point Source (g/s)
2023	Construction	0.0188	Point	134	37.7	0.01146	1.44E-03	1.08E-05
2024	Construction	0.0250	Point	134	50.0	0.01521	1.92E-03	1.43E-05
2025	Construction	0.0248	Point	134	49.7	0.01512	1.91E-03	1.42E-05
2026	Construction	0.0209	Point	134	41.8	0.01273	1.60E-03	1.20E-05
Total		***0.0895***		***536***	***179***	***0.0545***		

Construction Hours

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

PM2.5 Fugitive Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2023	Construction	FUG	0.0681	136.2	0.04145	5.22E-03	52,718	9.91E-08
2024	Construction	FUG	0.0151	30.2	0.00921	1.16E-03	52,718	2.20E-08
2025	Construction	FUG	0.0151	30.2	0.00918	1.16E-03	52,718	2.19E-08
2026	Construction	FUG	0.0134	26.8	0.00815	1.03E-03	52,718	1.95E-08
Total			***0.1117***	***223.3***	***0.0680***	***0.0086***		

Construction Hours

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

1655 Berryessa Road, San Jose, CA
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 ($\mu g/m^3$)
2023	0.0707	0.3614	12.58	0.20	0.01	0.40
2024	0.0523	0.0181	8.59	0.15	0.01	0.07
2025	0.0459	0.0180	1.19	0.13	0.01	0.06
2026	0.0399	0.0160	1.03	0.11	0.01	0.05
Total	-	-	**23.38**	**0.60**	-	-
Maximum	0.0707	0.3614	**-**	**-**	**0.01**	**0.40**

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 ($\mu g/m^3$)
2023	0.0102	0.0814	1.81	0.01	0.002	0.09
2024	0.0135	0.0181	2.22	0.01	0.003	0.03
2025	0.0134	0.0180	0.35	0.01	0.003	0.03
2026	0.0113	0.0160	0.29	0.01	0.002	0.03
Total	-	-	**4.67**	**0.05**	-	-
Maximum	0.0135	0.0814	**-**	**-**	**0.003**	**0.09**

1655 Berryessa Road, San Jose, CA
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			Infant/Child	Adult - Exposure Information			Adult	Maximum		
				DPM Conc (ug/m3)	Age	Cancer	Modeled	DPM Conc (ug/m3)	Age	Cancer			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Risk (per million)	Year	Annual	Sensitivity Factor	Risk (per million)	Hazard Index	Fugitive PM2.5*	Total PM2.5
0	0.25	-0.25 - 0*	2023	0.0707	10	0.96	2023	0.0707	-	-	**0.01**	**0.36**	**0.40**
1	1	0 - 1	2023	0.0707	10	11.61	2023	0.0707	1	0.20	0.01	0.36	0.40
2	1	1 - 2	2024	0.0523	10	8.59	2024	0.0523	1	0.15	0.01	0.02	0.07
3	1	2 - 3	2025	0.0459	3	1.19	2025	0.0459	1	0.13	0.01	0.02	0.06
4	1	3 - 4	2026	0.0399	3	1.03	2026	0.0399	1	0.11	0.01	0.02	0.05
5	1	4 - 5	2027	0.0000	3	0.00	2027	0.0000	1	0.00			
6	1	5 - 6	2028	0.0000	3	0.00	2028	0.0000	1	0.00			
7	1	6 - 7	2029	0.0000	3	0.00	2029	0.0000	1	0.00			
8	1	7 - 8	2030	0.0000	3	0.00	2030	0.0000	1	0.00			
9	1	8 - 9	2031	0.0000	3	0.00	2031	0.0000	1	0.00			
10	1	9 - 10	2032	0.0000	3	0.00	2032	0.0000	1	0.00			
11	1	10 - 11	2033	0.0000	3	0.00	2033	0.0000	1	0.00			
12	1	11 - 12	2034	0.0000	3	0.00	2034	0.0000	1	0.00			
13	1	12 - 13	2035	0.0000	3	0.00	2035	0.0000	1	0.00			
14	1	13 - 14	2036	0.0000	3	0.00	2036	0.0000	1	0.00			
15	1	14 - 15	2037	0.0000	3	0.00	2037	0.0000	1	0.00			
16	1	15 - 16	2038	0.0000	3	0.00	2038	0.0000	1	0.00			
17	1	16-17	2039	0.0000	1	0.00	2039	0.0000	1	0.00			
18	1	17-18	2040	0.0000	1	0.00	2040	0.0000	1	0.00			
19	1	18-19	2041	0.0000	1	0.00	2041	0.0000	1	0.00			
20	1	19-20	2042	0.0000	1	0.00	2042	0.0000	1	0.00			
21	1	20-21	2043	0.0000	1	0.00	2043	0.0000	1	0.00			
22	1	21-22	2044	0.0000	1	0.00	2044	0.0000	1	0.00			
23	1	22-23	2045	0.0000	1	0.00	2045	0.0000	1	0.00			
24	1	23-24	2046	0.0000	1	0.00	2046	0.0000	1	0.00			
25	1	24-25	2047	0.0000	1	0.00	2047	0.0000	1	0.00			
26	1	25-26	2048	0.0000	1	0.00	2048	0.0000	1	0.00			
27	1	26-27	2049	0.0000	1	0.00	2049	0.0000	1	0.00			
28	1	27-28	2050	0.0000	1	0.00	2050	0.0000	1	0.00			
29	1	28-29	2051	0.0000	1	0.00	2051	0.0000	1	0.00			
30	1	29-30	2052	0.0000	1	0.00	2052	0.0000	1	0.00			
Total Increased Cancer Risk						**23.38**				**0.60**			

* Third trimester of pregnancy

1655 Berryessa Road, San Jose, CA
Maximum DPM Cancer Risk Calculations From Construction - Unmitigated Emissions
Impacts at Off-Site Receptors - 15 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			Infant/Child	Adult - Exposure Information			Adult	Maximum		
				DPM Conc (ug/m3)	Age	Cancer		Modeled DPM Conc (ug/m3)	Age	Cancer			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Risk (per million)	Year	Annual	Sensitivity Factor	Risk (per million)	Hazard Index	Fugitive PM2.5*	Total PM2.5
0	0.25	-0.25 - 0*	2023	0.0689	10	0.94	2023	0.0689	-	-	**0.01**	**0.28**	**0.34**
1	1	0 - 1	2023	0.0689	10	11.32	2023	0.0689	1	0.20	0.01	0.28	0.34
2	1	1 - 2	2024	0.0510	10	8.37	2024	0.0510	1	0.15	0.01	0.01	0.06
3	1	2 - 3	2025	0.0448	3	1.16	2025	0.0448	1	0.13	0.01	0.01	0.06
4	1	3 - 4	2026	0.0389	3	1.01	2026	0.0389	1	0.11	0.01	0.01	0.05
5	1	4 - 5	2027	0.0000	3	0.00	2027	0.0000	1	0.00			
6	1	5 - 6	2028	0.0000	3	0.00	2028	0.0000	1	0.00			
7	1	6 - 7	2029	0.0000	3	0.00	2029	0.0000	1	0.00			
8	1	7 - 8	2030	0.0000	3	0.00	2030	0.0000	1	0.00			
9	1	8 - 9	2031	0.0000	3	0.00	2031	0.0000	1	0.00			
10	1	9 - 10	2032	0.0000	3	0.00	2032	0.0000	1	0.00			
11	1	10 - 11	2033	0.0000	3	0.00	2033	0.0000	1	0.00			
12	1	11 - 12	2034	0.0000	3	0.00	2034	0.0000	1	0.00			
13	1	12 - 13	2035	0.0000	3	0.00	2035	0.0000	1	0.00			
14	1	13 - 14	2036	0.0000	3	0.00	2036	0.0000	1	0.00			
15	1	14 - 15	2037	0.0000	3	0.00	2037	0.0000	1	0.00			
16	1	15 - 16	2038	0.0000	3	0.00	2038	0.0000	1	0.00			
17	1	16-17	2039	0.0000	1	0.00	2039	0.0000	1	0.00			
18	1	17-18	2040	0.0000	1	0.00	2040	0.0000	1	0.00			
19	1	18-19	2041	0.0000	1	0.00	2041	0.0000	1	0.00			
20	1	19-20	2042	0.0000	1	0.00	2042	0.0000	1	0.00			
21	1	20-21	2043	0.0000	1	0.00	2043	0.0000	1	0.00			
22	1	21-22	2044	0.0000	1	0.00	2044	0.0000	1	0.00			
23	1	22-23	2045	0.0000	1	0.00	2045	0.0000	1	0.00			
24	1	23-24	2046	0.0000	1	0.00	2046	0.0000	1	0.00			
25	1	24-25	2047	0.0000	1	0.00	2047	0.0000	1	0.00			
26	1	25-26	2048	0.0000	1	0.00	2048	0.0000	1	0.00			
27	1	26-27	2049	0.0000	1	0.00	2049	0.0000	1	0.00			
28	1	27-28	2050	0.0000	1	0.00	2050	0.0000	1	0.00			
29	1	28-29	2051	0.0000	1	0.00	2051	0.0000	1	0.00			
30	1	29-30	2052	0.0000	1	0.00	2052	0.0000	1	0.00			
Total Increased Cancer Risk						**22.78**				**0.58**			

* Third trimester of pregnancy

1655 Berryessa Road, San Jose, CA
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 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled		Age	Adult			
Exposure	**Exposure**				**Sensitivity**	**Cancer**	**DPM Conc (ug/m3)**		**Sensitivity**	**Cancer**	**Hazard**	**Fugitive**	**Total**
Year	**Duration (years)**	**Age**	**Year**	**Annual**	**Factor**	**Risk (per million)**	**Year**	**Annual**	**Factor**	**Risk (per million)**	**Index**	**PM2.5**	**PM2.5**
0	0.25	-0.25 - 0*	2023	0.0102	10	0.14	2023	0.0102	-	-	**0.003**	**0.08**	**0.09**
1	1	0 - 1	2023	0.0102	10	1.67	2023	0.0102	1	0.03	0.002	0.08	0.09
2	1	1 - 2	2024	0.0135	10	2.22	2024	0.0135	1	0.04	0.003	0.02	0.03
3	1	2 - 3	2025	0.0134	3	0.35	2025	0.0134	1	0.04	0.003	0.02	0.03
4	1	3 - 4	2026	0.0113	3	0.29	2026	0.0113	1	0.03	0.002	0.02	0.03
5	1	4 - 5	2027	0.0000	3	0.00	2027	0.0000	1	0.00			
6	1	5 - 6	2028	0.0000	3	0.00	2028	0.0000	1	0.00			
7	1	6 - 7	2029	0.0000	3	0.00	2029	0.0000	1	0.00			
8	1	7 - 8	2030	0.0000	3	0.00	2030	0.0000	1	0.00			
9	1	8 - 9	2031	0.0000	3	0.00	2031	0.0000	1	0.00			
10	1	9 - 10	2032	0.0000	3	0.00	2032	0.0000	1	0.00			
11	1	10 - 11	2033	0.0000	3	0.00	2033	0.0000	1	0.00			
12	1	11 - 12	2034	0.0000	3	0.00	2034	0.0000	1	0.00			
13	1	12 - 13	2035	0.0000	3	0.00	2035	0.0000	1	0.00			
14	1	13 - 14	2036	0.0000	3	0.00	2036	0.0000	1	0.00			
15	1	14 - 15	2037	0.0000	3	0.00	2037	0.0000	1	0.00			
16	1	15 - 16	2038	0.0000	3	0.00	2038	0.0000	1	0.00			
17	1	16-17	2039	0.0000	1	0.00	2039	0.0000	1	0.00			
18	1	17-18	2040	0.0000	1	0.00	2040	0.0000	1	0.00			
19	1	18-19	2041	0.0000	1	0.00	2041	0.0000	1	0.00			
20	1	19-20	2042	0.0000	1	0.00	2042	0.0000	1	0.00			
21	1	20-21	2043	0.0000	1	0.00	2043	0.0000	1	0.00			
22	1	21-22	2044	0.0000	1	0.00	2044	0.0000	1	0.00			
23	1	22-23	2045	0.0000	1	0.00	2045	0.0000	1	0.00			
24	1	23-24	2046	0.0000	1	0.00	2046	0.0000	1	0.00			
25	1	24-25	2047	0.0000	1	0.00	2047	0.0000	1	0.00			
26	1	25-26	2048	0.0000	1	0.00	2048	0.0000	1	0.00			
27	1	26-27	2049	0.0000	1	0.00	2049	0.0000	1	0.00			
28	1	27-28	2050	0.0000	1	0.00	2050	0.0000	1	0.00			
29	1	28-29	2051	0.0000	1	0.00	2051	0.0000	1	0.00			
30	1	29-30	2052	0.0000	1	0.00	2052	0.0000	1	0.00			
Total Increased Cancer Risk						**4.67**				**0.14**			

* Third trimester of pregnancy

1655 Berryessa Road, San Jose, CA
Project Construction and Operation Health Impacts Summary at School Receptors

Project Construction Impacts - Genuis Kids Berryessa (Infant Exposure) - Unmitigated

Emissions Year	Maximum Concentrations		Cancer Risk (per million)	Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM (µg/m3)	Fugitive PM2.5 (µg/m3)	Infant	(-)	(µg/m3)
2023	0.0218	0.0627	9.44	0.004	0.08
2024	0.0161	0.0031	6.98	0.003	0.02
2025	0.0141	0.0031	0.80	0.003	0.02
2026	0.0123	0.0028	0.69	0.002	0.02
Total	-	-	**17.92**	-	-
Maximum	0.0218	0.0627	-	0.004	0.08

Project Construction Impacts - Genuis Kids Berryessa (Infant Exposure) - Mitigated

Emissions Year	Maximum Concentrations		Cancer Risk (per million)	Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM (µg/m3)	Fugitive PM2.5 (µg/m3)	Infant	(-)	(µg/m3)
2023	0.0032	0.0141	1.40	0.001	0.02
2024	0.0043	0.0031	1.85	0.001	0.01
2025	0.0042	0.0031	0.24	0.001	0.01
2026	0.0036	0.0028	0.20	0.001	0.01
Total	-	-	**3.69**	-	-
Maximum	0.0043	0.0141	-	0.001	0.02

1655 Berryesaa Road, San Jose CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations
Genuis Kids Berryessa Preschool and Daycare - 1.0 meters - Infant 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/10 hrs) x (7 days/5 days) = 3.36
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 =	250	250	250
AT =	70	70	70
SAF =	3.36	3.36	0.73

* 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	2023	0.0218	10	9.44	0.004	0.06	0.08
2	1	2024	0.0161	10	6.98	0.004	0.063	0.084
3	1	2025	0.0141	3	0.80	0.003	0.003	0.019
4	1	2026	0.0123	3	0.69	0.003	0.003	0.017
				TOTAL	**17.92**	0.002	0.003	0.015

*The preschool/daycare provides full-time services for infants (2 months) to children (12 years old)
The program operates Monday through Friday from 8:00am to 6:30pm
Link: https://geniuskidsonline.com/fd/GeniusKidsSanJoseBerryessa-SanJose

1655 Berryesaa Road, San Jose CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations
Genuis Kids Berryessa Preschool and Daycare - 1.0 meters - Infant 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/10 hrs) x (7 days/5 days) = 3.36
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 =	250	250	250
AT =	70	70	70
SAF =	3.36	3.36	0.73

* 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
						0.001	0.01	0.02
1	1	2023	0.0032	10	1.40	0.001	0.014	0.017
2	1	2024	0.0043	10	1.85	0.001	0.003	0.007
3	1	2025	0.0042	3	0.24	0.001	0.003	0.007
4	1	2026	0.0036	3	0.20	0.001	0.003	0.006
				TOTAL	**3.69**			

*The preschool/daycare provides full-time services for infants (2 months) to children (12 years old)
The program operates Monday through Friday from 8:00am to 6:30pm
Link: https://geniuskidsonline.com/fd/GeniusKidsSanJoseBerryessa-SanJose

Project Traffic Emissions and Health Risks

CT-EMFAC2017 Emission Factors - 2027

File Name:	Berryessa - Santa Clara (SF) - 2027 - Annual.EF
CT-EMFAC2017 Version:	1.0.2.27401
Run Date:	8/17/2021 9:58
Area:	Santa Clara (SF)
Analysis Year:	2027
Season:	Annual

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.014	0.513	0.487
Truck 2	0.021	0.934	0.05
Non-Truck	0.965	0.015	0.947

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

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

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph
PM2.5	0.007689	0.004985	0.003381	0.002418	0.001835	0.001483	0.001278	0.001175	0.001148
TOG	0.156497	0.10271	0.069024	0.048886	0.037067	0.029657	0.024905	0.021934	0.020253
Diesel PM	0.000674	0.000567	0.000446	0.000362	0.000316	0.000299	0.000306	0.000333	0.00038

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

Pollutant Name	Emission Factor
TOG	1.164145

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

Pollutant Name	Emission Factor
PM2.5	0.002113

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

Pollutant Name	Emission Factor
PM2.5	0.016799

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

Pollutant Name	Emission Factor
PM2.5	0.014902

==========END==========

```
          File Name:   Berryessa - Santa Clara (SF) - 2027 - Annual.EM
CT-EMFAC2017 Version:  1.0.2.27401
            Run Date:  8/18/2021 2:04:59 PM
                Area:  Santa Clara (SF)
       Analysis Year:  2027
              Season:  Annual
```

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.014	0.513	0.487
Truck 2	0.021	0.934	0.050
Non-Truck	0.965	0.015	0.947

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

     Road Length:          0.25 miles
          Volume:       14,239 vehicles per hour
 Number of Hours:            1 hours

VMT Distribution by Speed Bin (mph):
        <= 5 mph                  0.00%
          10 mph                  0.00%
          15 mph                  0.00%
          20 mph                  0.00%
          25 mph                100.00%
          30 mph                  0.00%
          35 mph                  0.00%
          40 mph                  0.00%
          45 mph                  0.00%
          50 mph                  0.00%
          55 mph                  0.00%
          60 mph                  0.00%
          65 mph                  0.00%
          70 mph                  0.00%
          75 mph                  0.00%
```

Summary of Emissions and Consumption

Pollutant Name	Running Exhaust (grams)	Running Loss (grams)	Tire Wear (grams)	Brake Wear (grams)	Road Dust (grams)	Total (grams)	Total (US tons)
PM2.5	6.5	-	7.5	59.8	53.0	126.9	< 0.001
TOG	131.9	184.2	-	-	-	316.1	< 0.001
Diesel PM	1.1	-	-	-	-	1.1	< 0.001

END

Project Traffic Emissions and Calculations

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Project Traffic Operation - Berryessa Road
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2027

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_BER	Berryessa Road Eastbound	EB	3	710.0	0.44	17.0	55.7	3.4	40	7,120
DPM_BER	Berryessa Road Westbound	WB	3	719.3	0.45	17.0	55.7	3.4	40	7,120
									Total	14,239

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.00033			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and DPM Emissions - DPM_BER

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.95%	282	1.15E-05	9	6.40%	456	1.86E-05	17	5.61%	400	1.63E-05
2	2.66%	189	7.71E-06	10	7.41%	528	2.15E-05	18	3.24%	231	9.41E-06
3	2.88%	205	8.37E-06	11	6.34%	451	1.84E-05	19	2.21%	158	6.43E-06
4	3.28%	233	9.52E-06	12	6.96%	495	2.02E-05	20	0.86%	61	2.49E-06
5	2.15%	153	6.24E-06	13	6.22%	443	1.81E-05	21	3.06%	218	8.89E-06
6	3.28%	233	9.52E-06	14	6.17%	439	1.79E-05	22	4.19%	298	1.22E-05
7	6.06%	431	1.76E-05	15	5.16%	367	1.50E-05	23	2.61%	186	7.58E-06
8	4.54%	323	1.32E-05	16	3.92%	279	1.14E-05	24	0.85%	60	2.46E-06
								Total		7,120	

2027 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_BER

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.95%	282	1.16E-05	9	6.40%	456	1.88E-05	17	5.61%	400	1.65E-05
2	2.66%	189	7.82E-06	10	7.41%	528	2.18E-05	18	3.24%	231	9.54E-06
3	2.88%	205	8.48E-06	11	6.34%	451	1.87E-05	19	2.21%	158	6.51E-06
4	3.28%	233	9.65E-06	12	6.96%	495	2.05E-05	20	0.86%	61	2.52E-06
5	2.15%	153	6.32E-06	13	6.22%	443	1.83E-05	21	3.06%	218	9.01E-06
6	3.28%	233	9.65E-06	14	6.17%	439	1.82E-05	22	4.19%	298	1.23E-05
7	6.06%	431	1.78E-05	15	5.16%	367	1.52E-05	23	2.61%	186	7.68E-06
8	4.54%	323	1.34E-05	16	3.92%	279	1.15E-05	24	0.85%	60	2.49E-06
								Total		7,120	

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Project Traffic Operation - Berryessa Road
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2027

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM25_BER	Berryessa Road Eastbound	EB	3	710.0	0.44	17.0	56	1.3	40	7,120
PM25_BER	Berryessa Road Westbound	WB	3	719.3	0.45	17.0	56	1.3	40	7,120
									Total	14,239

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.001175			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and PM2.5 Emissions - PM25_BER

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	82	1.18E-05	9	7.11%	506	7.29E-05	17	7.39%	526	7.57E-05
2	0.42%	30	4.30E-06	10	4.39%	313	4.50E-05	18	8.18%	582	8.38E-05
3	0.40%	29	4.14E-06	11	4.66%	332	4.78E-05	19	5.69%	405	5.84E-05
4	0.26%	19	2.68E-06	12	5.89%	419	6.04E-05	20	4.27%	304	4.38E-05
5	0.49%	35	5.07E-06	13	6.15%	438	6.31E-05	21	3.26%	232	3.34E-05
6	0.90%	64	9.27E-06	14	6.04%	430	6.19E-05	22	3.30%	235	3.38E-05
7	3.79%	270	3.88E-05	15	7.01%	499	7.19E-05	23	2.46%	175	2.53E-05
8	7.76%	553	7.96E-05	16	7.14%	508	7.32E-05	24	1.87%	133	1.91E-05
								Total		7,120	

2027 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_BER

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	82	1.20E-05	9	7.11%	506	7.39E-05	17	7.39%	526	7.67E-05
2	0.42%	30	4.35E-06	10	4.39%	313	4.56E-05	18	8.18%	582	8.49E-05
3	0.40%	29	4.20E-06	11	4.66%	332	4.84E-05	19	5.69%	405	5.91E-05
4	0.26%	19	2.71E-06	12	5.89%	419	6.12E-05	20	4.27%	304	4.44E-05
5	0.49%	35	5.14E-06	13	6.15%	438	6.39E-05	21	3.26%	232	3.38E-05
6	0.90%	64	9.39E-06	14	6.04%	430	6.27E-05	22	3.30%	235	3.43E-05
7	3.79%	270	3.93E-05	15	7.01%	499	7.28E-05	23	2.46%	175	2.56E-05
8	7.76%	553	8.06E-05	16	7.14%	508	7.42E-05	24	1.87%	133	1.94E-05
								Total		7,120	

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Project Traffic Operation - Berryessa Road
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2027

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_BER	Berryessa Road Eastbound	EB	3	710.0	0.44	17.0	56	1.3	40	7,120
TEXH_BER	Berryessa Road Westbound	WB	3	719.3	0.45	17.0	56	1.3	40	7,120
									Total	14,239

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.02193			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_BER

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	82	2.21E-04	9	7.11%	506	1.36E-03	17	7.39%	526	1.41E-03
2	0.42%	30	8.02E-05	10	4.39%	313	8.40E-04	18	8.18%	582	1.56E-03
3	0.40%	29	7.74E-05	11	4.66%	332	8.92E-04	19	5.69%	405	1.09E-03
4	0.26%	19	5.00E-05	12	5.89%	419	1.13E-03	20	4.27%	304	8.18E-04
5	0.49%	35	9.46E-05	13	6.15%	438	1.18E-03	21	3.26%	232	6.23E-04
6	0.90%	64	1.73E-04	14	6.04%	430	1.16E-03	22	3.30%	235	6.31E-04
7	3.79%	270	7.25E-04	15	7.01%	499	1.34E-03	23	2.46%	175	4.72E-04
8	7.76%	553	1.49E-03	16	7.14%	508	1.37E-03	24	1.87%	133	3.57E-04
								Total		7,120	

2027 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_BER

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	82	2.23E-04	9	7.11%	506	1.38E-03	17	7.39%	526	1.43E-03
2	0.42%	30	8.13E-05	10	4.39%	313	8.51E-04	18	8.18%	582	1.59E-03
3	0.40%	29	7.84E-05	11	4.66%	332	9.04E-04	19	5.69%	405	1.10E-03
4	0.26%	19	5.07E-05	12	5.89%	419	1.14E-03	20	4.27%	304	8.29E-04
5	0.49%	35	9.59E-05	13	6.15%	438	1.19E-03	21	3.26%	232	6.31E-04
6	0.90%	64	1.75E-04	14	6.04%	430	1.17E-03	22	3.30%	235	6.39E-04
7	3.79%	270	7.34E-04	15	7.01%	499	1.36E-03	23	2.46%	175	4.78E-04
8	7.76%	553	1.51E-03	16	7.14%	508	1.38E-03	24	1.87%	133	3.62E-04
								Total		7,120	

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Project Traffic Operation - Berryessa Road
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2027

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_BER	Berryessa Road Eastbound	EB	3	710.0	0.44	17.0	56	1.3	40	7,120
TEVAP_BER	Berryessa Road Westbound	WB	3	719.3	0.45	17.0	56	1.3	40	7,120
									Total	14,239

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle per Hour (g/hour)	1.16415			
Emissions per Vehicle per Mile (g/VMT)	0.02910			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_BER

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	82	2.93E-04	9	7.11%	506	1.81E-03	17	7.39%	526	1.88E-03
2	0.42%	30	1.06E-04	10	4.39%	313	1.11E-03	18	8.18%	582	2.08E-03
3	0.40%	29	1.03E-04	11	4.66%	332	1.18E-03	19	5.69%	405	1.45E-03
4	0.26%	19	6.64E-05	12	5.89%	419	1.50E-03	20	4.27%	304	1.09E-03
5	0.49%	35	1.26E-04	13	6.15%	438	1.56E-03	21	3.26%	232	8.27E-04
6	0.90%	64	2.30E-04	14	6.04%	430	1.53E-03	22	3.30%	235	8.37E-04
7	3.79%	270	9.62E-04	15	7.01%	499	1.78E-03	23	2.46%	175	6.26E-04
8	7.76%	553	1.97E-03	16	7.14%	508	1.81E-03	24	1.87%	133	4.74E-04
								Total		7,120	

2027 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_BER

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	82	2.96E-04	9	7.11%	506	1.83E-03	17	7.39%	526	1.90E-03
2	0.42%	30	1.08E-04	10	4.39%	313	1.13E-03	18	8.18%	582	2.10E-03
3	0.40%	29	1.04E-04	11	4.66%	332	1.20E-03	19	5.69%	405	1.47E-03
4	0.26%	19	6.72E-05	12	5.89%	419	1.51E-03	20	4.27%	304	1.10E-03
5	0.49%	35	1.27E-04	13	6.15%	438	1.58E-03	21	3.26%	232	8.38E-04
6	0.90%	64	2.33E-04	14	6.04%	430	1.55E-03	22	3.30%	235	8.48E-04
7	3.79%	270	9.74E-04	15	7.01%	499	1.80E-03	23	2.46%	175	6.34E-04
8	7.76%	553	2.00E-03	16	7.14%	508	1.84E-03	24	1.87%	133	4.80E-04
								Total		7,120	

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Project Traffic Operation - Berryessa Road
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2027

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_BER	Berryessa Road Eastbound	EB	3	710.0	0.44	17.0	56	1.3	40	7,120
FUG_BER	Berryessa Road Westbound	WB	3	719.3	0.45	17.0	56	1.3	40	7,120
									Total	14,239

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680			
Road Dust - Emissions per Vehicle (g/VMT)	0.01490			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03381			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_BER

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	82	3.40E-04	9	7.11%	506	2.10E-03	17	7.39%	526	2.18E-03
2	0.42%	30	1.24E-04	10	4.39%	313	1.30E-03	18	8.18%	582	2.41E-03
3	0.40%	29	1.19E-04	11	4.66%	332	1.38E-03	19	5.69%	405	1.68E-03
4	0.26%	19	7.71E-05	12	5.89%	419	1.74E-03	20	4.27%	304	1.26E-03
5	0.49%	35	1.46E-04	13	6.15%	438	1.82E-03	21	3.26%	232	9.61E-04
6	0.90%	64	2.67E-04	14	6.04%	430	1.78E-03	22	3.30%	235	9.73E-04
7	3.79%	270	1.12E-03	15	7.01%	499	2.07E-03	23	2.46%	175	7.27E-04
8	7.76%	553	2.29E-03	16	7.14%	508	2.11E-03	24	1.87%	133	5.50E-04
								Total		7,120	

2027 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_BER

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	82	3.44E-04	9	7.11%	506	2.13E-03	17	7.39%	526	2.21E-03
2	0.42%	30	1.25E-04	10	4.39%	313	1.31E-03	18	8.18%	582	2.44E-03
3	0.40%	29	1.21E-04	11	4.66%	332	1.39E-03	19	5.69%	405	1.70E-03
4	0.26%	19	7.81E-05	12	5.89%	419	1.76E-03	20	4.27%	304	1.28E-03
5	0.49%	35	1.48E-04	13	6.15%	438	1.84E-03	21	3.26%	232	9.73E-04
6	0.90%	64	2.70E-04	14	6.04%	430	1.80E-03	22	3.30%	235	9.86E-04
7	3.79%	270	1.13E-03	15	7.01%	499	2.10E-03	23	2.46%	175	7.37E-04
8	7.76%	553	2.32E-03	16	7.14%	508	2.13E-03	24	1.87%	133	5.57E-04
								Total		7,120	

1655 Berryessa Road, San Jose, CA

On-Site Project Traffic Emissions and Modeling Emission Rates

Area Source	Activity	Emissions (grams/day)	Emissions (g/s)	Modeled Area (m^2)	Emission Rate $g/s/m^2$
DPM	OnSite Roadways	1.1	1.27E-05	52,718	2.41E-10
PM2.5	OnSite Roadways	6.5	7.52E-05	52,718	1.43E-09
TOG Exhaust	OnSite Roadways	131.9	1.53E-03	52,718	2.90E-08
TOG Evaporative	OnSite Roadways	184.2	2.13E-03	52,718	4.04E-08
Fugitive PM2.5	OnSite Roadways	120.3	1.39E-03	52,718	2.64E-08
Total		***444.0***	***5.14E-03***		

1655 Berryessa Road, San Jose, CA - Project Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Unmitigated Project Cancer Risk and PM2.5 MEI Receptors (1.5m receptor height)

Emission Year	2027
Receptor Information	Unmitigated Project MEI receptors
Number of Receptors	2
Receptor Height	1.5 meters
Receptor Distances	At Unmitigated Project MEI locations

Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Unmitigated Project MEI Cancer Risk Maximum Concentrations - Cancer Risk MEI Locatio

Meteorological Data Years	Concentration (µg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0014	0.1346	0.1850

Unmitigated Project MEI PM2.5 Maximum Concentrations - PM2.5 MEI Location

Meteorological Data Years	PM2.5 Concentration (µg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.10136	0.0964	0.0050

1655 Berryessa Road, San Jose, CA - Project Traffic Cancer Risk
Impacts at Unmitigated Project MEIs - 1.5 meter receptor heights
26 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Project Traffic Cancer Risk by Year - Maximum Impact Receptor Location

	Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL			
	Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG		Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
Construction	0	0.25	-0.25 - 0*	2023	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00			
	1	1	0 - 1	2023	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00			
	2	1	1 - 2	2024	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00			
	3	1	2 - 3	2025	3	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00			
	4	1	3 - 4	2026	3	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00			
	5	1	4 - 5	2027	3	0.0014	0.1346	0.1850	0.036	0.020	0.0016	0.06	0.000	0.10	0.10
	6	1	5 - 6	2028	3	0.0014	0.1346	0.1850	0.036	0.020	0.0016	0.06			
	7	1	6 - 7	2029	3	0.0014	0.1346	0.1850	0.036	0.020	0.0016	0.06			
	8	1	7 - 8	2030	3	0.0014	0.1346	0.1850	0.036	0.020	0.0016	0.06			
	9	1	8 - 9	2031	3	0.0014	0.1346	0.1850	0.036	0.020	0.0016	0.06			
	10	1	9 - 10	2032	3	0.0014	0.1346	0.1850	0.036	0.020	0.0016	0.06			
	11	1	10 - 11	2033	3	0.0014	0.1346	0.1850	0.036	0.020	0.0016	0.06			
	12	1	11 - 12	2034	3	0.0014	0.1346	0.1850	0.036	0.020	0.0016	0.06			
	13	1	12 - 13	2035	3	0.0014	0.1346	0.1850	0.036	0.020	0.0016	0.06			
	14	1	13 - 14	2036	3	0.0014	0.1346	0.1850	0.036	0.020	0.0016	0.06			
	15	1	14 - 15	2037	3	0.0014	0.1346	0.1850	0.036	0.020	0.0016	0.06			
	16	1	15 - 16	2038	3	0.0014	0.1346	0.1850	0.036	0.020	0.0016	0.06			
	17	1	16-17	2039	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	18	1	17-18	2040	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	19	1	18-19	2041	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	20	1	19-20	2042	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	21	1	20-21	2043	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	22	1	21-22	2044	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	23	1	22-23	2045	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	24	1	23-24	2046	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	25	1	24-25	2047	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	26	1	25-26	2048	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	27	1	26-27	2049	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	28	1	27-28	2050	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	29	1	28-29	2051	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	30	1	29-30	2052	1	0.0014	0.1346	0.1850	0.004	0.002	0.0002	0.01			
	Total Increased Cancer Risk								0.48	0.269	0.022	**0.77**			

* Third trimester of pregnancy

1655 Berryessa Road, San Jose, CA - Project Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Mitigated Project Cancer Risk and PM2.5 MEI Receptor (1.5m receptor height)

Emission Year	2027
Receptor Information	Mitigated Project MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	Mitigated Project MEI location
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Mitigated Project MEI Cancer Risk Maximum Concentrations - Cancer Risk MEI Location

Meteorological Data Years	Concentration (µg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0018	0.1704	0.2322

Mitigated Project MEI PM2.5 Maximum Concentrations - PM2.5 MEI Location

Meteorological Data Years	PM2.5 Concentration (µg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.21244	0.2037	0.0087

1655 Berryessa Road, San Jose, CA - Project Traffic Cancer Risk
Impacts at Mitigated Project MEIs - 1.5 meter receptor heights
26 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Project Traffic Cancer Risk by Year - Maximum Impact Receptor Location

	Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL			
	Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG		Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
Construction	0	0.25	-0.25 - 0*	2023	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00			
	1	1	0 - 1	2023	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00			
	2	1	1 - 2	2024	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00			
	3	1	2 - 3	2025	3	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00			
	4	1	3 - 4	2026	3	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00			
	5	1	4 - 5	2027	3	0.0018	0.1704	0.2322	0.048	0.025	0.0020	0.07	0.000	0.20	0.21
	6	1	5 - 6	2028	3	0.0018	0.1704	0.2322	0.048	0.025	0.0020	0.07			
	7	1	6 - 7	2029	3	0.0018	0.1704	0.2322	0.048	0.025	0.0020	0.07			
	8	1	7 - 8	2030	3	0.0018	0.1704	0.2322	0.048	0.025	0.0020	0.07			
	9	1	8 - 9	2031	3	0.0018	0.1704	0.2322	0.048	0.025	0.0020	0.07			
	10	1	9 - 10	2032	3	0.0018	0.1704	0.2322	0.048	0.025	0.0020	0.07			
	11	1	10 - 11	2033	3	0.0018	0.1704	0.2322	0.048	0.025	0.0020	0.07			
	12	1	11 - 12	2034	3	0.0018	0.1704	0.2322	0.048	0.025	0.0020	0.07			
	13	1	12 - 13	2035	3	0.0018	0.1704	0.2322	0.048	0.025	0.0020	0.07			
	14	1	13 - 14	2036	3	0.0018	0.1704	0.2322	0.048	0.025	0.0020	0.07			
	15	1	14 - 15	2037	3	0.0018	0.1704	0.2322	0.048	0.025	0.0020	0.07			
	16	1	15 - 16	2038	3	0.0018	0.1704	0.2322	0.048	0.025	0.0020	0.07			
	17	1	16-17	2039	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	18	1	17-18	2040	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	19	1	18-19	2041	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	20	1	19-20	2042	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	21	1	20-21	2043	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	22	1	21-22	2044	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	23	1	22-23	2045	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	24	1	23-24	2046	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	25	1	24-25	2047	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	26	1	25-26	2048	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	27	1	26-27	2049	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	28	1	27-28	2050	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	29	1	28-29	2051	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	30	1	29-30	2052	1	0.0018	0.1704	0.2322	0.005	0.003	0.0002	0.01			
	Total Increased Cancer Risk								0.64	0.341	0.027	**1.01**			

* Third trimester of pregnancy

1655 Berryessa Road, San Jose, CA
Maximum DPM Cancer Risk Calculations From - Project Traffic Emissions on Berryessa Road and Project Site
Genuis Kids Berryessa Preschool and Daycare - 1.0 meters - Infant Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

	Infant	School Child	Adult
Age --> / Parameter	0 - 2	2 - 16	16 - 30
ASF =	10	3	1
8-Hr BR* =	1200	520	230
A =	1	1	1
EF =	250	350	350
AT =	70	70	70
FAH =	3.36	3.36	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
1	1	0 - 1	2023	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00
2	1	1 - 2	2024	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00
3	1	2 - 3	2025	3	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00
4	1	3 - 4	2026	3	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00
5	1	4 - 5	2027	3	0.0010	0.0842	0.1135	0.076	0.038	0.0030	0.12
6	1	5 - 6	2028	3	0.0010	0.0842	0.1135	0.076	0.038	0.0030	0.12
7	1	6 - 7	2029	3	0.0010	0.0842	0.1135	0.125	0.063	0.0050	0.19
8	1	7 - 8	2030	3	0.0010	0.0842	0.1135	0.125	0.063	0.0050	0.19
9	1	8 - 9	2031	3	0.0010	0.0842	0.1135	0.125	0.063	0.0050	0.19
10	1	9 - 10	2032	3	0.0010	0.0842	0.1135	0.125	0.063	0.0050	0.19
11	1	10 - 11	2033	3	0.0010	0.0842	0.1135	0.125	0.063	0.0050	0.19
12	1	11 - 12	2034	3	0.0010	0.0842	0.1135	0.076	0.038	0.0030	0.12
Total Increased Cancer Risk								0.89	0.435	0.035	**1.31**

* Third trimester of pregnancy

Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.02	0.11	0.12

Project Generators Emissions and Health Risks

1655 Berryesaa Road, San Jose, CA

Standby Emergency Generator Impacts - w/ BAAQMD BACT Requirements for engines >1,000-hp
Off-site Sensitive Receptors
MEI Locations = 1.5 meter receptor height

DPM Emission Rates		
	DPM Emissions per Generator	
Source Type	Max Daily (lb/day)	Annual (lb/year)
One, 1,000-kW, 1,341-hp Generator BACT Requirements	0.0059	2.16
CalEEMod DPM Emissions	1.08E-03	tons/year

Modeling Information		
Model	AERMOD	
Source	Diesel Generator Engine	
Source Type	Point	
Meteorological Data	2013-2017 BAAQMD San Jose Airport Meteorological Data	
Point Source Stack Parameters		
Generator Engine Size (hp)	1341	
Stack Height (ft)*	12.00	near ground level release
Stack Diameter (ft)*	0.60	
Exhaust Gas Flowrate (CFM)**	2527.73	
Stack Exit Velocity (ft/sec)*	149.00	
Exhaust Temperature (˚F)*	872.00	
Emissions Rate (lb/hr)	0.000247	

*BAAQMD Default Generator Parameters

**AERMOD Default

1655 Berryessa Road, San Jose, CA - Cancer Risks from Project Operation
Project Emergency Generator
Impacts at Off-Site Receptors - 5 Feet Receptor Height
Impact at Unmitigated Project MEI (26-year Exposure)

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

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

	Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)
Construction	0	0.25	-0.25 - 0*	2023	0.0000	10	0.00
	1	1	0 - 1	2023	0.0000	10	0.00
	2	1	1 - 2	2024	0.0000	10	0.00
	3	1	2 - 3	2025	0.0000	3	0.00
	4	1	3 - 4	2026	0.0000	3	0.00
	5	1	4 - 5	2027	0.0001	3	0.0031
	6	1	5 - 6	2028	0.0001	3	0.0031
	7	1	6 - 7	2029	0.0001	3	0.0031
	8	1	7 - 8	2030	0.0001	3	0.0031
	9	1	8 - 9	2031	0.0001	3	0.0031
	10	1	9 - 10	2032	0.0001	3	0.0031
	11	1	10 - 11	2033	0.0001	3	0.0031
	12	1	11 - 12	2034	0.0001	3	0.0031
	13	1	12 - 13	2035	0.0001	3	0.0031
	14	1	13 - 14	2036	0.0001	3	0.0031
	15	1	14 - 15	2037	0.0001	3	0.0031
	16	1	15 - 16	2038	0.0001	3	0.0031
	17	1	16-17	2039	0.0001	1	0.0003
	18	1	17-18	2040	0.0001	1	0.0003
	19	1	18-19	2041	0.0001	1	0.0003
	20	1	19-20	2042	0.0001	1	0.0003
	21	1	20-21	2043	0.0001	1	0.0003
	22	1	21-22	2044	0.0001	1	0.0003
	23	1	22-23	2045	0.0001	1	0.0003
	24	1	23-24	2046	0.0001	1	0.0003
	25	1	24-25	2047	0.0001	1	0.0003
	26	1	25-26	2048	0.0001	1	0.0003
	27	1	26-27	2049	0.0001	1	0.0003
	28	1	27-28	2050	0.0001	1	0.0003
	29	1	28-29	2051	0.0001	1	0.0003
	30	1	29-30	2052	0.0001	1	0.0003
Total Increased Cancer Risk							**0.04**

Hazard Index	Maximum Total PM2.5
0.00002	0.0001

* Third trimester of pregnancy

1655 Berryessa Road, San Jose, CA - Cancer Risks from Project Operation
Project Emergency Generator
Impacts at Off-Site Receptors - 5 Feet Receptor Height
Impact at Mitigated Project MEI (26-year Exposure)

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

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

	Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)
Construction	0	0.25	-0.25 - 0*	2023	0.0000	10	0.00
	1	1	0 - 1	2023	0.0000	10	0.00
	2	1	1 - 2	2024	0.0000	10	0.00
	3	1	2 - 3	2025	0.0000	3	0.00
	4	1	3 - 4	2026	0.0000	3	0.00
	5	1	4 - 5	2027	0.0007	3	0.02
	6	1	5 - 6	2028	0.0007	3	0.02
	7	1	6 - 7	2029	0.0007	3	0.02
	8	1	7 - 8	2030	0.0007	3	0.02
	9	1	8 - 9	2031	0.0007	3	0.02
	10	1	9 - 10	2032	0.0007	3	0.02
	11	1	10 - 11	2033	0.0007	3	0.02
	12	1	11 - 12	2034	0.0007	3	0.02
	13	1	12 - 13	2035	0.0007	3	0.02
	14	1	13 - 14	2036	0.0007	3	0.02
	15	1	14 - 15	2037	0.0007	3	0.02
	16	1	15 - 16	2038	0.0007	3	0.02
	17	1	16-17	2039	0.0007	1	0.002
	18	1	17-18	2040	0.0007	1	0.002
	19	1	18-19	2041	0.0007	1	0.002
	20	1	19-20	2042	0.0007	1	0.002
	21	1	20-21	2043	0.0007	1	0.002
	22	1	21-22	2044	0.0007	1	0.002
	23	1	22-23	2045	0.0007	1	0.002
	24	1	23-24	2046	0.0007	1	0.002
	25	1	24-25	2047	0.0007	1	0.002
	26	1	25-26	2048	0.0007	1	0.002
	27	1	26-27	2049	0.0007	1	0.002
	28	1	27-28	2050	0.0007	1	0.002
	29	1	28-29	2051	0.0007	1	0.002
	30	1	29-30	2052	0.0007	1	0.002
Total Increased Cancer Risk							**0.24**

* Third trimester of pregnancy

Hazard Index	Maximum Total PM2.5
0.0001	0.0007

1655 Berryessa Road, San Jose CA - Generator Impacts
Maximum DPM Cancer Risk and PM2.5 Calculations
Genuis Kids Berryessa Preschool and Daycare - 1.0 meters - Infant 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/0.14 hrs) x (7 days/365 days) = 3.29
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 =	250	250	250
AT =	70	70	70
SAF =	3.29	3.29	0.73

* 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)
1	1	2023	0.0000	10	0.00
2	1	2024	0.0000	10	0.00
3	1	2025	0.0000	3	0.00
4	1	2026	0.0000	3	0.00
5	1	2027	0.0001	3	0.01
6	1	2028	0.0001	3	0.01
7	1	2029	0.0001	3	0.01
8	1	2030	0.0001	3	0.01
9	1	2031	0.0001	3	0.01
10	1	2032	0.0001	3	0.01
11	1	2033	0.0001	3	0.01
12	1	2034	0.0001	3	0.01
				TOTAL	**0.06**

Maximum Hazard Index	Maximum Total PM2.5
0.00003	0.0001
0.00003	0.0001

*The preschool/daycare provides full-time services for infants (2 months) to children (12 years old)
The program operates Monday through Friday from 8:00am to 6:30pm
Link: https://geniuskidsonline.com/fd/GeniusKidsSanJoseBerryessa-SanJose

Attachment 5: Cumulative Community Risk from TAC Sources

CT-EMFAC2017 Roadway Emissions Factors - 2023

File Name: Berryessa Cumulative - Santa Clara (SF) - 2023 - Annual.EF
CT-EMFAC2017 Version: 1.0.2.27401
Run Date: 8/17/2021 10:25
Area: Santa Clara (SF)
Analysis Year: 2023
Season: Annual

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.015	0.487	0.513
Truck 2	0.02	0.938	0.047
Non-Truck	0.965	0.014	0.958

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

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

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph
PM2.5	0.009229	0.005981	0.004054	0.002896	0.002194	0.001765	0.001511	0.001375	0.001329
TOG	0.195764	0.127928	0.086105	0.061055	0.046181	0.036838	0.030861	0.027137	0.025044
Diesel PM	0.000904	0.000732	0.000563	0.000446	0.000382	0.000353	0.00035	0.00037	0.000411

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

Pollutant Name	Emission Factor
TOG	1.35761

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

Pollutant Name	Emission Factor
PM2.5	0.002108

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

Pollutant Name	Emission Factor
PM2.5	0.016808

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

Pollutant Name	Emission Factor
PM2.5	0.014855

==========END==========

Berryessa Road Traffic Emissions and Health Risk Calculations

Analysis Year = ***2023***

Vehicle Type	2018 Caltrans Vehicles (veh/day)	2023 Vehicles (veh/day)
Total	**33,880**	**35,574**

Increase From 2018	1.05
Vehicles/Direction	**17,787**
Avg Vehicles/Hour/Direction	741

Traffic Data Year = ***2018***

Project Traffic Cumulative 2030 ADT	AADT Total
BART Entrance and Berryessa Road	33,880

Percent of Total Vehicles

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

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - Berryessa Road
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_BER	Berryessa Road Eastbound	EB	3	710.0	0.44	17.0	55.7	3.4	40	17,787
DPM_BER	Berryessa Road Westbound	WB	3	719.3	0.45	17.0	55.7	3.4	40	17,787
									Total	35,574

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.00037			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and DPM Emissions - DPM_BER

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	695	3.15E-05	9	6.50%	1156	5.24E-05	17	5.58%	993	4.50E-05
2	2.59%	461	2.09E-05	10	7.36%	1309	5.94E-05	18	3.28%	583	2.65E-05
3	2.88%	512	2.32E-05	11	6.33%	1126	5.11E-05	19	2.36%	420	1.90E-05
4	3.34%	594	2.69E-05	12	6.84%	1217	5.52E-05	20	0.92%	164	7.42E-06
5	2.19%	390	1.77E-05	13	6.15%	1094	4.96E-05	21	2.99%	532	2.41E-05
6	3.39%	603	2.73E-05	14	6.15%	1094	4.96E-05	22	4.14%	736	3.34E-05
7	5.98%	1064	4.82E-05	15	5.23%	930	4.22E-05	23	2.47%	439	1.99E-05
8	4.66%	829	3.76E-05	16	3.91%	695	3.15E-05	24	0.86%	153	6.94E-06
								Total		17,789	

2023 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_BER

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.91%	695	3.19E-05	9	6.50%	1156	5.31E-05	17	5.58%	993	4.56E-05
2	2.59%	461	2.12E-05	10	7.36%	1309	6.01E-05	18	3.28%	583	2.68E-05
3	2.88%	512	2.35E-05	11	6.33%	1126	5.17E-05	19	2.36%	420	1.93E-05
4	3.34%	594	2.73E-05	12	6.84%	1217	5.59E-05	20	0.92%	164	7.52E-06
5	2.19%	390	1.79E-05	13	6.15%	1094	5.03E-05	21	2.99%	532	2.44E-05
6	3.39%	603	2.77E-05	14	6.15%	1094	5.03E-05	22	4.14%	736	3.38E-05
7	5.98%	1064	4.89E-05	15	5.23%	930	4.27E-05	23	2.47%	439	2.02E-05
8	4.66%	829	3.81E-05	16	3.91%	695	3.19E-05	24	0.86%	153	7.03E-06
								Total		17,789	

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - Berryessa Road
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM25_BER	Berryessa Road Eastbound	EB	3	710.0	0.44	17.0	56	1.3	40	17,787
PM25_BER	Berryessa Road Westbound	WB	3	719.3	0.45	17.0	56	1.3	40	17,787
									Total	35,574

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.001375			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and PM2.5 Emissions - PM25_BER

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	205	3.45E-05	9	7.11%	1265	2.13E-04	17	7.38%	1313	2.21E-04
2	0.42%	75	1.26E-05	10	4.39%	781	1.32E-04	18	8.17%	1453	2.45E-04
3	0.41%	73	1.23E-05	11	4.66%	829	1.40E-04	19	5.70%	1014	1.71E-04
4	0.26%	46	7.79E-06	12	5.89%	1048	1.77E-04	20	4.27%	760	1.28E-04
5	0.50%	89	1.50E-05	13	6.15%	1094	1.84E-04	21	3.26%	580	9.77E-05
6	0.90%	160	2.70E-05	14	6.04%	1074	1.81E-04	22	3.30%	587	9.89E-05
7	3.79%	674	1.14E-04	15	7.01%	1247	2.10E-04	23	2.46%	438	7.37E-05
8	7.76%	1380	2.33E-04	16	7.14%	1270	2.14E-04	24	1.86%	331	5.57E-05
								Total		17,783	

2023 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_BER

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	205	3.49E-05	9	7.11%	1265	2.16E-04	17	7.38%	1313	2.24E-04
2	0.42%	75	1.28E-05	10	4.39%	781	1.33E-04	18	8.17%	1453	2.48E-04
3	0.41%	73	1.24E-05	11	4.66%	829	1.41E-04	19	5.70%	1014	1.73E-04
4	0.26%	46	7.89E-06	12	5.89%	1048	1.79E-04	20	4.27%	760	1.30E-04
5	0.50%	89	1.52E-05	13	6.15%	1094	1.87E-04	21	3.26%	580	9.90E-05
6	0.90%	160	2.73E-05	14	6.04%	1074	1.83E-04	22	3.30%	587	1.00E-04
7	3.79%	674	1.15E-04	15	7.01%	1247	2.13E-04	23	2.46%	438	7.47E-05
8	7.76%	1380	2.36E-04	16	7.14%	1270	2.17E-04	24	1.86%	331	5.65E-05
								Total		17,783	

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - Berryessa Road
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_BER	Berryessa Road Eastbound	EB	3	710.0	0.44	17.0	56	1.3	40	17,787
TEXH_BER	Berryessa Road Westbound	WB	3	719.3	0.45	17.0	56	1.3	40	17,787
									Total	35,574

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.02714			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_BER

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	205	6.80E-04	9	7.11%	1265	4.21E-03	17	7.38%	1313	4.37E-03
2	0.42%	75	2.48E-04	10	4.39%	781	2.60E-03	18	8.17%	1453	4.83E-03
3	0.41%	73	2.43E-04	11	4.66%	829	2.76E-03	19	5.70%	1014	3.37E-03
4	0.26%	46	1.54E-04	12	5.89%	1048	3.48E-03	20	4.27%	760	2.53E-03
5	0.50%	89	2.96E-04	13	6.15%	1094	3.64E-03	21	3.26%	580	1.93E-03
6	0.90%	160	5.32E-04	14	6.04%	1074	3.57E-03	22	3.30%	587	1.95E-03
7	3.79%	674	2.24E-03	15	7.01%	1247	4.15E-03	23	2.46%	438	1.46E-03
8	7.76%	1380	4.59E-03	16	7.14%	1270	4.22E-03	24	1.86%	331	1.10E-03
								Total		17,783	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	205	6.89E-04	9	7.11%	1265	4.26E-03	17	7.38%	1313	4.42E-03
2	0.42%	75	2.52E-04	10	4.39%	781	2.63E-03	18	8.17%	1453	4.90E-03
3	0.41%	73	2.46E-04	11	4.66%	829	2.79E-03	19	5.70%	1014	3.42E-03
4	0.26%	46	1.56E-04	12	5.89%	1048	3.53E-03	20	4.27%	760	2.56E-03
5	0.50%	89	3.00E-04	13	6.15%	1094	3.69E-03	21	3.26%	580	1.95E-03
6	0.90%	160	5.39E-04	14	6.04%	1074	3.62E-03	22	3.30%	587	1.98E-03
7	3.79%	674	2.27E-03	15	7.01%	1247	4.20E-03	23	2.46%	438	1.47E-03
8	7.76%	1380	4.65E-03	16	7.14%	1270	4.28E-03	24	1.86%	331	1.11E-03
								Total		17,783	

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - Berryessa Road
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_BER	Berryessa Road Eastbound	EB	3	710.0	0.44	17.0	56	1.3	40	17,787
TEVAP_BER	Berryessa Road Westbound	WB	3	719.3	0.45	17.0	56	1.3	40	17,787
									Total	35,574

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle per Hour (g/hour)	1.35761			
Emissions per Vehicle per Mile (g/VMT)	0.03394			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_BER

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	205	8.51E-04	9	7.11%	1265	5.26E-03	17	7.38%	1313	5.46E-03
2	0.42%	75	3.11E-04	10	4.39%	781	3.25E-03	18	8.17%	1453	6.04E-03
3	0.41%	73	3.03E-04	11	4.66%	829	3.45E-03	19	5.70%	1014	4.22E-03
4	0.26%	46	1.92E-04	12	5.89%	1048	4.36E-03	20	4.27%	760	3.16E-03
5	0.50%	89	3.70E-04	13	6.15%	1094	4.55E-03	21	3.26%	580	2.41E-03
6	0.90%	160	6.66E-04	14	6.04%	1074	4.47E-03	22	3.30%	587	2.44E-03
7	3.79%	674	2.80E-03	15	7.01%	1247	5.19E-03	23	2.46%	438	1.82E-03
8	7.76%	1380	5.74E-03	16	7.14%	1270	5.28E-03	24	1.86%	331	1.38E-03
								Total		17,783	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	205	8.62E-04	9	7.11%	1265	5.33E-03	17	7.38%	1313	5.53E-03
2	0.42%	75	3.15E-04	10	4.39%	781	3.29E-03	18	8.17%	1453	6.12E-03
3	0.41%	73	3.07E-04	11	4.66%	829	3.49E-03	19	5.70%	1014	4.27E-03
4	0.26%	46	1.95E-04	12	5.89%	1048	4.41E-03	20	4.27%	760	3.20E-03
5	0.50%	89	3.75E-04	13	6.15%	1094	4.61E-03	21	3.26%	580	2.44E-03
6	0.90%	160	6.75E-04	14	6.04%	1074	4.53E-03	22	3.30%	587	2.47E-03
7	3.79%	674	2.84E-03	15	7.01%	1247	5.25E-03	23	2.46%	438	1.84E-03
8	7.76%	1380	5.82E-03	16	7.14%	1270	5.35E-03	24	1.86%	331	1.39E-03
								Total		17,783	

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - Berryessa Road
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_BER	Berryessa Road Eastbound	EB	3	710.0	0.44	17.0	56	1.3	40	17,787
FUG_BER	Berryessa Road Westbound	WB	3	719.3	0.45	17.0	56	1.3	40	17,787
									Total	35,574

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01681			
Road Dust - Emissions per Vehicle (g/VMT)	0.01486			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03377			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	205	8.47E-04	9	7.11%	1265	5.23E-03	17	7.38%	1313	5.43E-03
2	0.42%	75	3.09E-04	10	4.39%	781	3.23E-03	18	8.17%	1453	6.01E-03
3	0.41%	73	3.02E-04	11	4.66%	829	3.43E-03	19	5.70%	1014	4.20E-03
4	0.26%	46	1.91E-04	12	5.89%	1048	4.34E-03	20	4.27%	760	3.14E-03
5	0.50%	89	3.68E-04	13	6.15%	1094	4.53E-03	21	3.26%	580	2.40E-03
6	0.90%	160	6.63E-04	14	6.04%	1074	4.45E-03	22	3.30%	587	2.43E-03
7	3.79%	674	2.79E-03	15	7.01%	1247	5.16E-03	23	2.46%	438	1.81E-03
8	7.76%	1380	5.71E-03	16	7.14%	1270	5.26E-03	24	1.86%	331	1.37E-03
								Total		17,783	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	205	8.58E-04	9	7.11%	1265	5.30E-03	17	7.38%	1313	5.50E-03
2	0.42%	75	3.13E-04	10	4.39%	781	3.27E-03	18	8.17%	1453	6.09E-03
3	0.41%	73	3.06E-04	11	4.66%	829	3.48E-03	19	5.70%	1014	4.25E-03
4	0.26%	46	1.94E-04	12	5.89%	1048	4.39E-03	20	4.27%	760	3.18E-03
5	0.50%	89	3.73E-04	13	6.15%	1094	4.59E-03	21	3.26%	580	2.43E-03
6	0.90%	160	6.71E-04	14	6.04%	1074	4.50E-03	22	3.30%	587	2.46E-03
7	3.79%	674	2.83E-03	15	7.01%	1247	5.23E-03	23	2.46%	438	1.83E-03
8	7.76%	1380	5.79E-03	16	7.14%	1270	5.32E-03	24	1.86%	331	1.39E-03
								Total		17,783	

1655 Berryessa Road, San Jose - Berryessa Road Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Unmitigated Project Cancer Risk and PM2.5 MEI Receptors (1.5m receptor height)

Emission Year	2023
Receptor Information	Unmitigated Project MEI receptors
Number of Receptors	2
Receptor Height	1.5 meters
Receptor Distances	At Unmitigated Project MEI locations

Meteorological Conditions	
BAAQMD San Martin Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Unmitigated Project MEI Cancer Risk Maximum Concentrations - Cancer Risk MEI Locatio

Meteorological Data Years	Concentration (µg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0020	0.1193	0.1491

Unmitigated Project MEI PM2.5 Maximum Concentrations - PM2.5 MEI Location

Meteorological Data Years	PM2.5 Concentration (µg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.02866	0.0275	0.0011

1655 Berryessa Road, San Jose, CA - Berryessa Road Cancer Risk
Impacts at Unmitigated Project MEIs - 1.5 meter receptor heights
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Roadway Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2023	10	0.0020	0.1193	0.1491	0.027	0.009	0.0007	0.04
1	1	0 - 1	2023	10	0.0020	0.1193	0.1491	0.322	0.112	0.0082	0.44
2	1	1 - 2	2024	10	0.0020	0.1193	0.1491	0.322	0.112	0.0082	0.44
3	1	2 - 3	2025	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
4	1	3 - 4	2026	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
5	1	4 - 5	2027	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
6	1	5 - 6	2028	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
7	1	6 - 7	2029	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
8	1	7 - 8	2030	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
9	1	8 - 9	2031	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
10	1	9 - 10	2032	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
11	1	10 - 11	2033	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
12	1	11 - 12	2034	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
13	1	12 - 13	2035	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
14	1	13 - 14	2036	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
15	1	14 - 15	2037	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
16	1	15 - 16	2038	3	0.0020	0.1193	0.1491	0.051	0.018	0.0013	0.07
17	1	16-17	2039	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
18	1	17-18	2040	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
19	1	18-19	2041	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
20	1	19-20	2042	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
21	1	20-21	2043	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
22	1	21-22	2044	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
23	1	22-23	2045	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
24	1	23-24	2046	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
25	1	24-25	2047	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
26	1	25-26	2048	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
27	1	26-27	2049	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
28	1	27-28	2050	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
29	1	28-29	2051	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
30	1	29-30	2052	1	0.0020	0.1193	0.1491	0.006	0.002	0.0001	0.01
Total Increased Cancer Risk								1.46	0.507	0.037	**2.00**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.000	0.03	0.03

* Third trimester of pregnancy

1655 Berryessa Road, San Jose - Berryessa Road Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Mitigated Project Cancer Risk and PM2.5 MEI Receptor (1.5m receptor height)

Emission Year	2023
Receptor Information	Mitigated Project MEI receptor
Number of Receptors	2
Receptor Height	1.5 meters
Receptor Distances	At Mitigated Project MEI location

Meteorological Conditions	
BAAQMD San Martin Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Mitigated Project MEI Cancer Risk Maximum Concentrations - Cancer Risk MEI Location

Meteorological Data Years	Concentration (µg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0033	0.2365	0.2956

Mitigated Project MEI PM2.5 Maximum Concentrations - PM2.5 MEI Location

Meteorological Data Years	PM2.5 Concentration (µg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.30665	0.2946	0.0120

1655 Berryessa Road, San Jose, CA - Berryessa Road Cancer Risk
Impacts at Mitigated Project MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Roadway Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2023	10	0.0033	0.2365	0.2956	0.045	0.018	0.0014	0.06
1	1	0 - 1	2023	10	0.0033	0.2365	0.2956	0.542	0.222	0.0163	0.78
2	1	1 - 2	2024	10	0.0033	0.2365	0.2956	0.542	0.222	0.0163	0.78
3	1	2 - 3	2025	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
4	1	3 - 4	2026	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
5	1	4 - 5	2027	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
6	1	5 - 6	2028	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
7	1	6 - 7	2029	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
8	1	7 - 8	2030	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
9	1	8 - 9	2031	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
10	1	9 - 10	2032	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
11	1	10 - 11	2033	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
12	1	11 - 12	2034	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
13	1	12 - 13	2035	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
14	1	13 - 14	2036	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
15	1	14 - 15	2037	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
16	1	15 - 16	2038	3	0.0033	0.2365	0.2956	0.085	0.035	0.0026	0.12
17	1	16-17	2039	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
18	1	17-18	2040	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
19	1	18-19	2041	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
20	1	19-20	2042	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
21	1	20-21	2043	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
22	1	21-22	2044	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
23	1	22-23	2045	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
24	1	23-24	2046	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
25	1	24-25	2047	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
26	1	25-26	2048	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
27	1	26-27	2049	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
28	1	27-28	2050	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
29	1	28-29	2051	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
30	1	29-30	2052	1	0.0033	0.2365	0.2956	0.009	0.004	0.0003	0.01
Total Increased Cancer Risk								2.46	1.005	0.074	**3.54**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.001	0.29	0.31

* Third trimester of pregnancy

1655 Berryessa Road, San Jose - Berryessa Road Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 1st and 2nd Floor Residential Receptors (1.5 and 4.5 meter receptor height)

Emission Year	2027
Receptor Information	Maximum On-Site Receptor
Number of Receptors	260
Receptor Height	1st & 2nd Floors, 1.5 & 4.5 meters
Receptor Distances	6 meter grid spacing in residential area

Meteorological Conditions	
BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

On-Site Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)			
	DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0012	0.0671	0.0839	1st Floor
2013-2017	0.0011	0.0615	0.0768	2nd Floor

On-Site PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)			
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.0871	0.0836	0.0034	3rd Floor
2013-2017	0.0797	0.0766	0.0031	4th Floor

1655 Berryessa Road, San Jose, CA - Berryessa Road Cancer Risk
Impacts at On-Site 1st Floor Residential Receptors - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2027	10	0.0012	0.0671	0.0839	0.016	0.005	0.0004	0.02
1	1	0 - 1	2027	10	0.0012	0.0671	0.0839	0.197	0.063	0.0046	0.26
2	1	1 - 2	2028	10	0.0012	0.0671	0.0839	0.197	0.063	0.0046	0.26
3	1	2 - 3	2029	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
4	1	3 - 4	2030	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
5	1	4 - 5	2031	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
6	1	5 - 6	2032	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
7	1	6 - 7	2033	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
8	1	7 - 8	2034	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
9	1	8 - 9	2035	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
10	1	9 - 10	2036	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
11	1	10 - 11	2037	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
12	1	11 - 12	2038	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
13	1	12 - 13	2039	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
14	1	13 - 14	2040	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
15	1	14 - 15	2041	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
16	1	15 - 16	2042	3	0.0012	0.0671	0.0839	0.031	0.010	0.0007	0.04
17	1	16-17	2043	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
18	1	17-18	2044	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
19	1	18-19	2045	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
20	1	19-20	2046	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
21	1	20-21	2047	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
22	1	21-22	2048	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
23	1	22-23	2049	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
24	1	23-24	2050	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
25	1	24-25	2051	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
26	1	25-26	2052	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
27	1	26-27	2053	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
28	1	27-28	2054	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
29	1	28-29	2055	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
30	1	29-30	2056	1	0.0012	0.0671	0.0839	0.003	0.001	0.0001	0.00
Total Increased Cancer Risk								0.89	0.285	0.021	**1.20**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0002	0.08	0.09

* Third trimester of pregnancy

1655 Berryessa Road, San Jose, CA - Berryessa Road Cancer Risk
Impacts at On-Site 2nd Floor Residential Receptors - 4.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2027	10	0.0011	0.0615	0.0768	0.015	0.005	0.0004	0.02
1	1	0 - 1	2027	10	0.0011	0.0615	0.0768	0.186	0.058	0.0042	0.25
2	1	1 - 2	2028	10	0.0011	0.0615	0.0768	0.186	0.058	0.0042	0.25
3	1	2 - 3	2029	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
4	1	3 - 4	2030	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
5	1	4 - 5	2031	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
6	1	5 - 6	2032	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
7	1	6 - 7	2033	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
8	1	7 - 8	2034	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
9	1	8 - 9	2035	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
10	1	9 - 10	2036	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
11	1	10 - 11	2037	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
12	1	11 - 12	2038	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
13	1	12 - 13	2039	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
14	1	13 - 14	2040	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
15	1	14 - 15	2041	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
16	1	15 - 16	2042	3	0.0011	0.0615	0.0768	0.029	0.009	0.0007	0.04
17	1	16-17	2043	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
18	1	17-18	2044	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
19	1	18-19	2045	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
20	1	19-20	2046	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
21	1	20-21	2047	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
22	1	21-22	2048	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
23	1	22-23	2049	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
24	1	23-24	2050	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
25	1	24-25	2051	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
26	1	25-26	2052	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
27	1	26-27	2053	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
28	1	27-28	2054	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
29	1	28-29	2055	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
30	1	29-30	2056	1	0.0011	0.0615	0.0768	0.003	0.001	0.0001	0.00
Total Increased Cancer Risk								0.84	0.261	0.019	**1.12**

* Third trimester of pregnancy

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0002	0.08	0.08

Lundy Ave Traffic Emissions and Health Risk Calculations

Analysis Year = ***2023***

Vehicle Type	2018 Caltrans Vehicles (veh/day)	2023 Vehicles (veh/day)
Total	**17,705**	**18,590**

Increase From 2018	1.05
Vehicles/Direction	**9,295**
Avg Vehicles/Hour/Direction	387

Traffic Data Year = ***2018***

Project Traffic Cumulative 2030 ADT	AADT Total
Lundy Ave & Berryessa Rd	17,705

Percent of Total Vehicles

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

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - Lundy Avenue
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = **2023**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_LUN	Lundy Ave Northbound	NB	2	534.6	0.33	13.3	43.7	3.4	40	9,295
DPM_LUN	Lundy Ave Southbound	SB	2	580.9	0.36	13.3	43.7	3.4	40	9,295
									Total	18,590

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.00037			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and DPM Emissions - DPM_LUN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	363	1.24E-05	9	6.50%	604	2.06E-05	17	5.58%	519	1.77E-05
2	2.59%	241	8.22E-06	10	7.36%	684	2.34E-05	18	3.28%	305	1.04E-05
3	2.88%	268	9.14E-06	11	6.33%	588	2.01E-05	19	2.36%	219	7.49E-06
4	3.34%	310	1.06E-05	12	6.84%	636	2.17E-05	20	0.92%	86	2.92E-06
5	2.19%	204	6.95E-06	13	6.15%	572	1.95E-05	21	2.99%	278	9.49E-06
6	3.39%	315	1.08E-05	14	6.15%	572	1.95E-05	22	4.14%	385	1.31E-05
7	5.98%	556	1.90E-05	15	5.23%	486	1.66E-05	23	2.47%	230	7.84E-06
8	4.66%	433	1.48E-05	16	3.91%	363	1.24E-05	24	0.86%	80	2.73E-06
								Total		9,296	

2023 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_LUN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.91%	363	1.35E-05	9	6.50%	604	2.24E-05	17	5.58%	519	1.92E-05
2	2.59%	241	8.93E-06	10	7.36%	684	2.54E-05	18	3.28%	305	1.13E-05
3	2.88%	268	9.93E-06	11	6.33%	588	2.18E-05	19	2.36%	219	8.14E-06
4	3.34%	310	1.15E-05	12	6.84%	636	2.36E-05	20	0.92%	86	3.17E-06
5	2.19%	204	7.55E-06	13	6.15%	572	2.12E-05	21	2.99%	278	1.03E-05
6	3.39%	315	1.17E-05	14	6.15%	572	2.12E-05	22	4.14%	385	1.43E-05
7	5.98%	556	2.06E-05	15	5.23%	486	1.80E-05	23	2.47%	230	8.52E-06
8	4.66%	433	1.61E-05	16	3.91%	363	1.35E-05	24	0.86%	80	2.97E-06
								Total		9,296	

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - Lundy Avenue
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM25_LUN	Lundy Ave Northbound	NB	2	534.6	0.33	13.3	44	1.3	40	9,295
PM25_LUN	Lundy Ave Southbound	SB	2	580.9	0.36	13.3	44	1.3	40	9,295
									Total	18,590

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.001375			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and PM2.5 Emissions - PM25_LUN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	107	1.36E-05	9	7.11%	661	8.39E-05	17	7.38%	686	8.70E-05
2	0.42%	39	4.95E-06	10	4.39%	408	5.18E-05	18	8.17%	759	9.64E-05
3	0.41%	38	4.84E-06	11	4.66%	433	5.50E-05	19	5.70%	530	6.72E-05
4	0.26%	24	3.07E-06	12	5.89%	547	6.95E-05	20	4.27%	397	5.04E-05
5	0.50%	46	5.90E-06	13	6.15%	572	7.25E-05	21	3.26%	303	3.84E-05
6	0.90%	84	1.06E-05	14	6.04%	561	7.12E-05	22	3.30%	307	3.89E-05
7	3.79%	352	4.47E-05	15	7.01%	652	8.27E-05	23	2.46%	229	2.90E-05
8	7.76%	721	9.15E-05	16	7.14%	664	8.42E-05	24	1.86%	173	2.19E-05
								Total		9,293	

2023 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_LUN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	107	1.47E-05	9	7.11%	661	9.11E-05	17	7.38%	686	9.46E-05
2	0.42%	39	5.38E-06	10	4.39%	408	5.63E-05	18	8.17%	759	1.05E-04
3	0.41%	38	5.25E-06	11	4.66%	433	5.97E-05	19	5.70%	530	7.30E-05
4	0.26%	24	3.33E-06	12	5.89%	547	7.55E-05	20	4.27%	397	5.47E-05
5	0.50%	46	6.41E-06	13	6.15%	572	7.88E-05	21	3.26%	303	4.18E-05
6	0.90%	84	1.15E-05	14	6.04%	561	7.74E-05	22	3.30%	307	4.23E-05
7	3.79%	352	4.86E-05	15	7.01%	652	8.98E-05	23	2.46%	229	3.15E-05
8	7.76%	721	9.94E-05	16	7.14%	664	9.15E-05	24	1.86%	173	2.38E-05
								Total		9,293	

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - Lundy Avenue
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_LUN	Lundy Ave Northbound	NB	2	534.6	0.33	13.3	44	1.3	40	9,295
TEXH_LUN	Lundy Ave Southbound	SB	2	580.9	0.36	13.3	44	1.3	40	9,295
									Total	18,590

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.02714			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_LUN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	107	2.68E-04	9	7.11%	661	1.65E-03	17	7.38%	686	1.72E-03
2	0.42%	39	9.78E-05	10	4.39%	408	1.02E-03	18	8.17%	759	1.90E-03
3	0.41%	38	9.54E-05	11	4.66%	433	1.08E-03	19	5.70%	530	1.33E-03
4	0.26%	24	6.05E-05	12	5.89%	547	1.37E-03	20	4.27%	397	9.94E-04
5	0.50%	46	1.16E-04	13	6.15%	572	1.43E-03	21	3.26%	303	7.59E-04
6	0.90%	84	2.09E-04	14	6.04%	561	1.41E-03	22	3.30%	307	7.68E-04
7	3.79%	352	8.82E-04	15	7.01%	652	1.63E-03	23	2.46%	229	5.73E-04
8	7.76%	721	1.81E-03	16	7.14%	664	1.66E-03	24	1.86%	173	4.33E-04
								Total		9,293	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	107	2.91E-04	9	7.11%	661	1.80E-03	17	7.38%	686	1.87E-03
2	0.42%	39	1.06E-04	10	4.39%	408	1.11E-03	18	8.17%	759	2.07E-03
3	0.41%	38	1.04E-04	11	4.66%	433	1.18E-03	19	5.70%	530	1.44E-03
4	0.26%	24	6.58E-05	12	5.89%	547	1.49E-03	20	4.27%	397	1.08E-03
5	0.50%	46	1.26E-04	13	6.15%	572	1.56E-03	21	3.26%	303	8.24E-04
6	0.90%	84	2.28E-04	14	6.04%	561	1.53E-03	22	3.30%	307	8.35E-04
7	3.79%	352	9.59E-04	15	7.01%	652	1.77E-03	23	2.46%	229	6.22E-04
8	7.76%	721	1.96E-03	16	7.14%	664	1.81E-03	24	1.86%	173	4.70E-04
								Total		9,293	

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - Lundy Avenue
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_LUN	Lundy Ave Northbound	NB	2	534.6	0.33	13.3	44	1.3	40	9,295
TEVAP_LUN	Lundy Ave Southbound	SB	2	580.9	0.36	13.3	44	1.3	40	9,295
									Total	18,590

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle per Hour (g/hour)	1.35761			
Emissions per Vehicle per Mile (g/VMT)	0.03394			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_LUN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	107	3.35E-04	9	7.11%	661	2.07E-03	17	7.38%	686	2.15E-03
2	0.42%	39	1.22E-04	10	4.39%	408	1.28E-03	18	8.17%	759	2.38E-03
3	0.41%	38	1.19E-04	11	4.66%	433	1.36E-03	19	5.70%	530	1.66E-03
4	0.26%	24	7.57E-05	12	5.89%	547	1.71E-03	20	4.27%	397	1.24E-03
5	0.50%	46	1.46E-04	13	6.15%	572	1.79E-03	21	3.26%	303	9.49E-04
6	0.90%	84	2.62E-04	14	6.04%	561	1.76E-03	22	3.30%	307	9.61E-04
7	3.79%	352	1.10E-03	15	7.01%	652	2.04E-03	23	2.46%	229	7.16E-04
8	7.76%	721	2.26E-03	16	7.14%	664	2.08E-03	24	1.86%	173	5.41E-04
								Total		9,293	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	107	3.64E-04	9	7.11%	661	2.25E-03	17	7.38%	686	2.33E-03
2	0.42%	39	1.33E-04	10	4.39%	408	1.39E-03	18	8.17%	759	2.58E-03
3	0.41%	38	1.30E-04	11	4.66%	433	1.47E-03	19	5.70%	530	1.80E-03
4	0.26%	24	8.22E-05	12	5.89%	547	1.86E-03	20	4.27%	397	1.35E-03
5	0.50%	46	1.58E-04	13	6.15%	572	1.95E-03	21	3.26%	303	1.03E-03
6	0.90%	84	2.85E-04	14	6.04%	561	1.91E-03	22	3.30%	307	1.04E-03
7	3.79%	352	1.20E-03	15	7.01%	652	2.22E-03	23	2.46%	229	7.78E-04
8	7.76%	721	2.45E-03	16	7.14%	664	2.26E-03	24	1.86%	173	5.88E-04
								Total		9,293	

1655 Berryessa Road, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - Lundy Avenue
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_LUN	Lundy Ave Northbound	NB	2	534.6	0.33	13.3	44	1.3	40	9,295
FUG_LUN	Lundy Ave Southbound	SB	2	580.9	0.36	13.3	44	1.3	40	9,295
									Total	18,590

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01681			
Road Dust - Emissions per Vehicle (g/VMT)	0.01486			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03377			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	107	3.33E-04	9	7.11%	661	2.06E-03	17	7.38%	686	2.14E-03
2	0.42%	39	1.22E-04	10	4.39%	408	1.27E-03	18	8.17%	759	2.37E-03
3	0.41%	38	1.19E-04	11	4.66%	433	1.35E-03	19	5.70%	530	1.65E-03
4	0.26%	24	7.53E-05	12	5.89%	547	1.71E-03	20	4.27%	397	1.24E-03
5	0.50%	46	1.45E-04	13	6.15%	572	1.78E-03	21	3.26%	303	9.44E-04
6	0.90%	84	2.61E-04	14	6.04%	561	1.75E-03	22	3.30%	307	9.56E-04
7	3.79%	352	1.10E-03	15	7.01%	652	2.03E-03	23	2.46%	229	7.13E-04
8	7.76%	721	2.25E-03	16	7.14%	664	2.07E-03	24	1.86%	173	5.39E-04
								Total		9,293	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	107	3.62E-04	9	7.11%	661	2.24E-03	17	7.38%	686	2.32E-03
2	0.42%	39	1.32E-04	10	4.39%	408	1.38E-03	18	8.17%	759	2.57E-03
3	0.41%	38	1.29E-04	11	4.66%	433	1.47E-03	19	5.70%	530	1.79E-03
4	0.26%	24	8.18E-05	12	5.89%	547	1.85E-03	20	4.27%	397	1.34E-03
5	0.50%	46	1.57E-04	13	6.15%	572	1.94E-03	21	3.26%	303	1.03E-03
6	0.90%	84	2.83E-04	14	6.04%	561	1.90E-03	22	3.30%	307	1.04E-03
7	3.79%	352	1.19E-03	15	7.01%	652	2.21E-03	23	2.46%	229	7.74E-04
8	7.76%	721	2.44E-03	16	7.14%	664	2.25E-03	24	1.86%	173	5.85E-04
								Total		9,293	

1655 Berryessa Road, San Jose - Lundy Ave Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Unmitigated Project Cancer Risk and PM2.5 MEI Receptors (1.5m receptor height)

Emission Year	2023
Receptor Information	Unmitigated Project MEI receptors
Number of Receptors	2
Receptor Height	1.5 meters
Receptor Distances	At Unmitigated Project MEI locations

Meteorological Conditions	
BAAQMD San Martin Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Unmitigated Project MEI Cancer Risk Maximum Concentrations - Cancer Risk MEI Locatio

Meteorological Data Years	Concentration (µg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0001	0.0045	0.0056

Unmitigated Project MEI PM2.5 Maximum Concentrations - PM2.5 MEI Location

Meteorological Data Years	PM2.5 Concentration (µg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.00666	0.0064	0.0003

1655 Berryessa Road, San Jose, CA - Lundy Ave Cancer Risk
Impacts at Unmitigated Project MEIs - 1.5 meter receptor heights
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Roadway Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2023	10	0.0001	0.0045	0.0056	0.001	0.000	0.0000	0.00
1	1	0 - 1	2023	10	0.0001	0.0045	0.0056	0.015	0.004	0.0003	0.02
2	1	1 - 2	2024	10	0.0001	0.0045	0.0056	0.015	0.004	0.0003	0.02
3	1	2 - 3	2025	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
4	1	3 - 4	2026	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
5	1	4 - 5	2027	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
6	1	5 - 6	2028	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
7	1	6 - 7	2029	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
8	1	7 - 8	2030	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
9	1	8 - 9	2031	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
10	1	9 - 10	2032	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
11	1	10 - 11	2033	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
12	1	11 - 12	2034	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
13	1	12 - 13	2035	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
14	1	13 - 14	2036	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
15	1	14 - 15	2037	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
16	1	15 - 16	2038	3	0.0001	0.0045	0.0056	0.002	0.001	0.0000	0.003
17	1	16-17	2039	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
18	1	17-18	2040	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
19	1	18-19	2041	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
20	1	19-20	2042	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
21	1	20-21	2043	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
22	1	21-22	2044	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
23	1	22-23	2045	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
24	1	23-24	2046	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
25	1	24-25	2047	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
26	1	25-26	2048	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
27	1	26-27	2049	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
28	1	27-28	2050	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
29	1	28-29	2051	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
30	1	29-30	2052	1	0.0001	0.0045	0.0056	0.000	0.000	0.0000	0.0003
Total Increased Cancer Risk								0.07	0.019	0.001	**0.09**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00002	0.01	0.01

* Third trimester of pregnancy

1655 Berryessa Road, San Jose - Lundy Ave Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Mitigated Project Cancer Risk and PM2.5 MEI Receptor (1.5m receptor height)

Emission Year	2023
Receptor Information	Mitigated Project MEI receptor
Number of Receptors	2
Receptor Height	1.5 meters
Receptor Distances	At Mitigated Project MEI location

Meteorological Conditions	
BAAQMD San Martin Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Mitigated Project MEI Cancer Risk Maximum Concentrations - Cancer Risk MEI Location

Meteorological Data Years	Concentration (µg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0001	0.0039	0.0048

Mitigated Project MEI PM2.5 Maximum Concentrations - PM2.5 MEI Location

Meteorological Data Years	PM2.5 Concentration (µg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.00499	0.0048	0.0002

1655 Berryessa Road, San Jose, CA - Lundy Ave Cancer Risk
Impacts at Mitigated Project MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Roadway Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2023	10	0.0001	0.0039	0.0048	0.001	0.000	0.0000	0.00
1	1	0 - 1	2023	10	0.0001	0.0039	0.0048	0.011	0.004	0.0003	0.02
2	1	1 - 2	2024	10	0.0001	0.0039	0.0048	0.011	0.004	0.0003	0.02
3	1	2 - 3	2025	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
4	1	3 - 4	2026	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
5	1	4 - 5	2027	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
6	1	5 - 6	2028	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
7	1	6 - 7	2029	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
8	1	7 - 8	2030	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
9	1	8 - 9	2031	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
10	1	9 - 10	2032	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
11	1	10 - 11	2033	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
12	1	11 - 12	2034	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
13	1	12 - 13	2035	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
14	1	13 - 14	2036	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
15	1	14 - 15	2037	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
16	1	15 - 16	2038	3	0.0001	0.0039	0.0048	0.002	0.001	0.0000	0.002
17	1	16-17	2039	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
18	1	17-18	2040	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
19	1	18-19	2041	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
20	1	19-20	2042	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
21	1	20-21	2043	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
22	1	21-22	2044	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
23	1	22-23	2045	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
24	1	23-24	2046	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
25	1	24-25	2047	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
26	1	25-26	2048	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
27	1	26-27	2049	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
28	1	27-28	2050	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
29	1	28-29	2051	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
30	1	29-30	2052	1	0.0001	0.0039	0.0048	0.000	0.000	0.0000	0.0003
Total Increased Cancer Risk								0.05	0.016	0.001	**0.07**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00001	0.005	0.005

* Third trimester of pregnancy

1655 Berryessa Road, San Jose - Lundy Ave Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 1st and 2nd Floor Residential Receptors (1.5 and 4.5 meter receptor height)

Emission Year	2027
Receptor Information	Maximum On-Site Receptor
Number of Receptors	260
Receptor Height	1st & 2nd Floors, 1.5 & 4.5 meters
Receptor Distances	6 meter grid spacing in residential area

Meteorological Conditions	
BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

On-Site Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)			
	DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0002	0.0093	0.0116	1st Floor
2013-2017	0.0002	0.0089	0.0111	2nd Floor

On-Site PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)			
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.0120	0.0115	0.0005	3rd Floor
2013-2017	0.0115	0.0111	0.0004	4th Floor

1655 Berryessa Road, San Jose, CA - Lundy Ave Cancer Risk
Impacts at On-Site 1st Floor Residential Receptors - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2027	10	0.0002	0.0093	0.0116	0.002	0.001	0.0001	0.00
1	1	0 - 1	2027	10	0.0002	0.0093	0.0116	0.030	0.009	0.0006	0.04
2	1	1 - 2	2028	10	0.0002	0.0093	0.0116	0.030	0.009	0.0006	0.04
3	1	2 - 3	2029	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
4	1	3 - 4	2030	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
5	1	4 - 5	2031	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
6	1	5 - 6	2032	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
7	1	6 - 7	2033	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
8	1	7 - 8	2034	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
9	1	8 - 9	2035	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
10	1	9 - 10	2036	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
11	1	10 - 11	2037	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
12	1	11 - 12	2038	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
13	1	12 - 13	2039	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
14	1	13 - 14	2040	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
15	1	14 - 15	2041	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
16	1	15 - 16	2042	3	0.0002	0.0093	0.0116	0.005	0.001	0.0001	0.01
17	1	16-17	2043	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
18	1	17-18	2044	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
19	1	18-19	2045	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
20	1	19-20	2046	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
21	1	20-21	2047	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
22	1	21-22	2048	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
23	1	22-23	2049	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
24	1	23-24	2050	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
25	1	24-25	2051	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
26	1	25-26	2052	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
27	1	26-27	2053	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
28	1	27-28	2054	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
29	1	28-29	2055	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
30	1	29-30	2056	1	0.0002	0.0093	0.0116	0.001	0.000	0.0000	0.00
Total Increased Cancer Risk								0.13	0.039	0.003	**0.18**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00004	0.01	0.01

* Third trimester of pregnancy

1655 Berryessa Road, San Jose, CA - Lundy Ave Cancer Risk
Impacts at On-Site 2nd Floor Residential Receptors - 4.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2027	10	0.0002	0.0089	0.0111	0.002	0.001	0.0001	0.00
1	1	0 - 1	2027	10	0.0002	0.0089	0.0111	0.028	0.008	0.0006	0.04
2	1	1 - 2	2028	10	0.0002	0.0089	0.0111	0.028	0.008	0.0006	0.04
3	1	2 - 3	2029	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
4	1	3 - 4	2030	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
5	1	4 - 5	2031	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
6	1	5 - 6	2032	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
7	1	6 - 7	2033	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
8	1	7 - 8	2034	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
9	1	8 - 9	2035	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
10	1	9 - 10	2036	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
11	1	10 - 11	2037	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
12	1	11 - 12	2038	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
13	1	12 - 13	2039	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
14	1	13 - 14	2040	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
15	1	14 - 15	2041	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
16	1	15 - 16	2042	3	0.0002	0.0089	0.0111	0.004	0.001	0.0001	0.01
17	1	16-17	2043	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
18	1	17-18	2044	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
19	1	18-19	2045	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
20	1	19-20	2046	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
21	1	20-21	2047	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
22	1	21-22	2048	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
23	1	22-23	2049	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
24	1	23-24	2050	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
25	1	24-25	2051	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
26	1	25-26	2052	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
27	1	26-27	2053	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
28	1	27-28	2054	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
29	1	28-29	2055	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
30	1	29-30	2056	1	0.0002	0.0089	0.0111	0.000	0.000	0.0000	0.00
Total Increased Cancer Risk								0.13	0.038	0.003	**0.17**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00003	0.01	0.01

* Third trimester of pregnancy

Bay Area Air Quality Management District

Risk & Hazard Stationary Source Inquiry Form

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

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

Click here for guidance on coducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.

Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requester Contact Information

Date of Request	**5/12/2021**
Contact Name	Casey Divine
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x103
Email	cdivine@illingworthrodkin.com
Project Name	1655 Berryessa Road
Address	1655 Berryessa Road
City	San Jose
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Mixed-Use
Project Size (# of units or building square feet)	850du, 480-ksf commercial
Comments:	

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

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

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

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

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

5. List the stationary source information in Table B. Table B is for information only.

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

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

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

Submit forms, maps, and questions to Matthew Hanson at 415-749-8733, or mhanson@baaqmd.gov

Table B: Google Earth data

Distance from Receptor (feet) or MEI[1]	Plant No.	Facility Name	Address	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments
Cancer Risk MEI: 830 PM2.5 MEI: +1,000	23553	Santa Clara Valley Transportation Authority	909 Berryessa Stn Way	5.59	0.02	0.01		Generators		2018 Dataset
Cancer Risk MEI: 575 PM2.5 MEI: +1,000	112269	Berryessa Shell	1705 Berryessa Rd	30.43	0.13	--		Gas Dispensing Facility		2018 Dataset

Unmitigated Project MEI

Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
0.05	0.28	0.001	0.001
0.04	1.09	0.005	#VALUE!

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
7. The date that the HRSA was completed.
8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or less. To
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect the
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

Date last updated:
03/13/2018

Mitigated Project MEI

Distance from Receptor (feet) or MEI[1]	FACID (Plant No.)	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
700	23553	0.07	0.39	0.001	0.001
640	112269	0.03	0.92	0.004	#VALUE!

Maximum Project Site Receptors

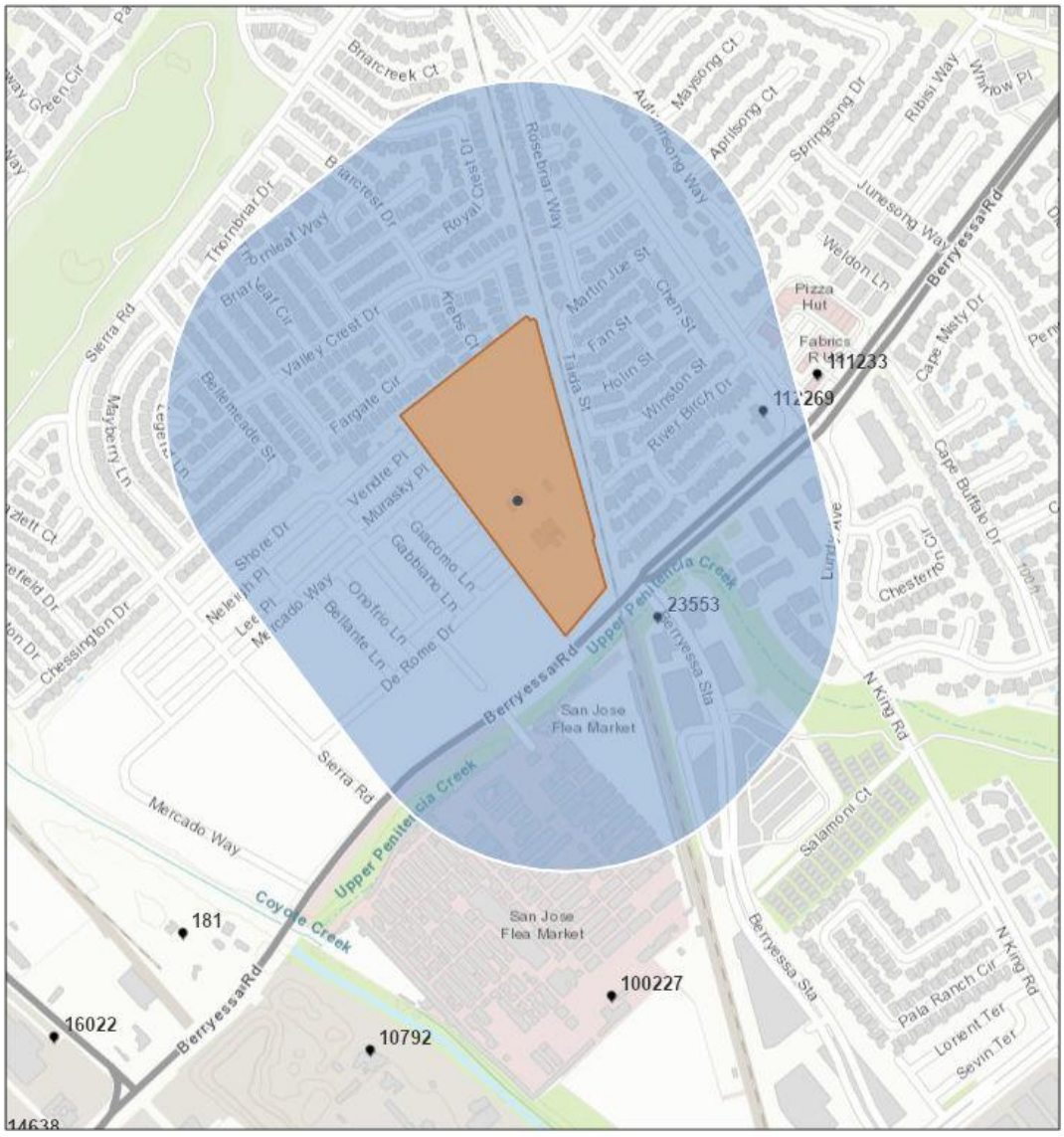
Distance from Receptor (feet) or MEI[1]	FACID (Plant No.)	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
950	23553	0.04	0.22	0.001	0.0004
700	112269	0.03	0.78	0.003	#VALUE!

Stationary Source Risk & Hazards Screening Report

Area of Interest (AOI) Information

Area : 7,032,622.86 ft²

May 12 2021 16:20:53 Pacific Daylight Time



Permitted Facilities 2018

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

City of San Jose, County of Santa Clara, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA

Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Facilities 2018	2	N/A	N/A

Permitted Facilities 2018

#	FACID	Name	Address	City	St
1	23553	Santa Clara Valley Transportation Authority	909 Berryessa Stn Way	San Jose	CA
2	112269	Berryessa Shell	1705 Berryessa Rd	San Jose	CA

#	Zip	County	Cancer	Hazard	PM_25	Type	Count
1	95133	Santa Clara	5.590	0.020	0.010	Generators	1
2	95133	Santa Clara	30.430	0.130	0.000	Gas Dispensing Facility	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.