AIR QUALITY, HEALTH RISK, GREENHOUSE GAS, AND ENERGY IMPACT REPORT

HARDT AND BRIER COMMERCIAL PROJECT

CITY OF SAN BERNARDINO, CALIFORNIA

LSA

May 2023

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CITY OF SAN BERNARDINO, CALIFORNIA

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LIST OF ABBREVIATIONS AND ACRONYMS

°C	degrees Celsius
°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AAQS	ambient air quality standards
AB	Assembly Bill
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
Basin	South Coast Air Basin
BAU	business-as-usual
BTU	British thermal units
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen Code	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
CAP	Climate Action Plan
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CBSC	California Building Standards Commission
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	methane
City	City of San Bernardino
CO	carbon monoxide

CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of San Bernardino
CPUC	California Public Utilities Commission
DPM	diesel particulate matter
EIA	Energy Information Administration
EIR	Environmental Impact Report
EMFAC	California Emissions Factor Model
EO	Executive Order
GHG	greenhouse gas
GHGRP	Greenhouse Gas Reduction Plan
GWh	gigawatt-hour
GWP	global warming potential
H_2S	hydrogen sulfide
HFCs	hydrofluorocarbons
HI	Hazard Index
HRA	Health Risk Assessment
I-10	Interstate 10
I-215	Interstate 215
IPCC	Intergovernmental Panel on Climate Change
kWh	kilowatt-hour
lbs/day	pounds per day
LCFS	Low Carbon Fuel Standard
LST	localized significance threshold
MEI	maximally exposed individual
mg/m^3	milligrams per cubic meter
MICR	maximum individual cancer risk
MMT	million metric tons
MMT CO_2e	million metric tons of carbon dioxide equivalent
mpg	miles per gallon
mph	miles per hour

MPO	Metropolitan Planning Organization
MT	metric tons
MT CO_2e	metric tons of carbon dioxide equivalent
MT CO_2e/yr	metric tons of carbon dioxide equivalent per year
MW	megawatt
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
O_3	ozone (or smog)
OPR	Governor's Office of Planning and Research
PFCs	perfluorocarbons
PM	particulate matter
$PM_{2.5}$	particulate matter less than 2.5 microns in size
PM_{10}	particulate matter less than 10 microns in size
ppb	parts per billion
ppm	parts per million
PRC	Public Resources Code
project	Hardt and Brier Commercial Project
RCP	Regional Comprehensive Plan
RMP	Risk Management Policy
ROCs	reactive organic compounds
ROGs	reactive organic gases
RPS	Renewables Portfolio Standard
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SBCOG	San Bernardino Council of Governments

SCAG	Southern California Association of Governments
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SO_2	sulfur dioxide
SO_X	sulfur oxides
SoCalGas	Southern California Gas Company
sq ft	square foot/feet
sq mi	square mile
SRA	Source Receptor Area
TAC	toxic air contaminant
UNFCCC	United Nations Framework Convention on Climate Change
URF	unit risk factor
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
VMT	vehicle miles traveled
VOCs	volatile organic compounds
ZEV	zero-emission vehicle
ZNE	zero net energy

INTRODUCTION

This Air Quality, Heath Risk, Greenhouse Gas (GHG), and Energy Impact Report has been prepared to evaluate the potential air quality and GHG emissions impacts associated with the Hardt and Brier Commercial Project (project) in the City of San Bernardino (City), County of San Bernardino (County), California. This report follows the guidelines identified by the South Coast Air Quality Management District (SCAQMD) in its *California Environmental Quality Act (CEQA) Air Quality Handbook*,[1] and associated updates. In keeping with these guidelines, this analysis describes existing air quality, including air quality and GHG emissions generated from project-related sources, regional air pollution, and global climate change. In addition, this analysis discusses energy use resulting from implementation of the proposed project and evaluates whether the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with any applicable plans for renewable energy and energy efficiency.

PROJECT LOCATION AND DESCRIPTION

The 5.81-acre project site is located between Hardt Street and Brier Drive in the City of San Bernardino, San Bernardino County, California. The project site consists of 8 parcels identified by Assessor's Parcel Numbers [APNs]: 0281-301-17, 0281-311-06, -07, -08, -11, -12, -18, and -19. The project site is currently undeveloped. Regional access to the project site is provided by Interstate 10 (I-10) and Interstate 215 (I-215). Local access is provided via Hardt Street and Brier Drive. See Figure 1, Regional Project Location, and Figure 2, Site Plan, below.

The project proposes to construct a business park totaling a maximum of 81,210-square-feet (sq ft) among five proposed buildings (Buildings A through D1 and D2) with a total of 213 parking spaces. Building A would consist of 17,783 sq ft (including 1,269 sq ft of mezzanine space), Building B would consist of 17,586 sq ft (including 1,286 sq ft of mezzanine space), Building C would consist of 18,323 sq ft (including 1,275 sq ft of mezzanine space), and Buildings D1 and D2 would consist of 13,759 sq ft each. The project would include approximately 63,147 sq ft of landscaping which would cover approximately 25 percent of the project site.

The project is assumed to operate 24 hours per day, 7 days per week; however, this may shift depending on the tenant, as the hours of operation are unknown. In addition, the proposed project would generate approximately 1,014 average daily trips[2]. The proposed project would not include an emergency backup generator or fire pumps.

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1 South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*. Website: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993) (accessed May 2023).

2 Linscott Law & Greenspan Engineers. 2023. *Hardt and Brier Business Park Project Traffic Impact Analysis Report*. March 28.

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LEGEND

Project Location

FIGURE 1

0 1000 2000

FEET

SOURCE: ESRI Map 2023

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Hardt and Brier Commercial Project

Project Location and Vicinity

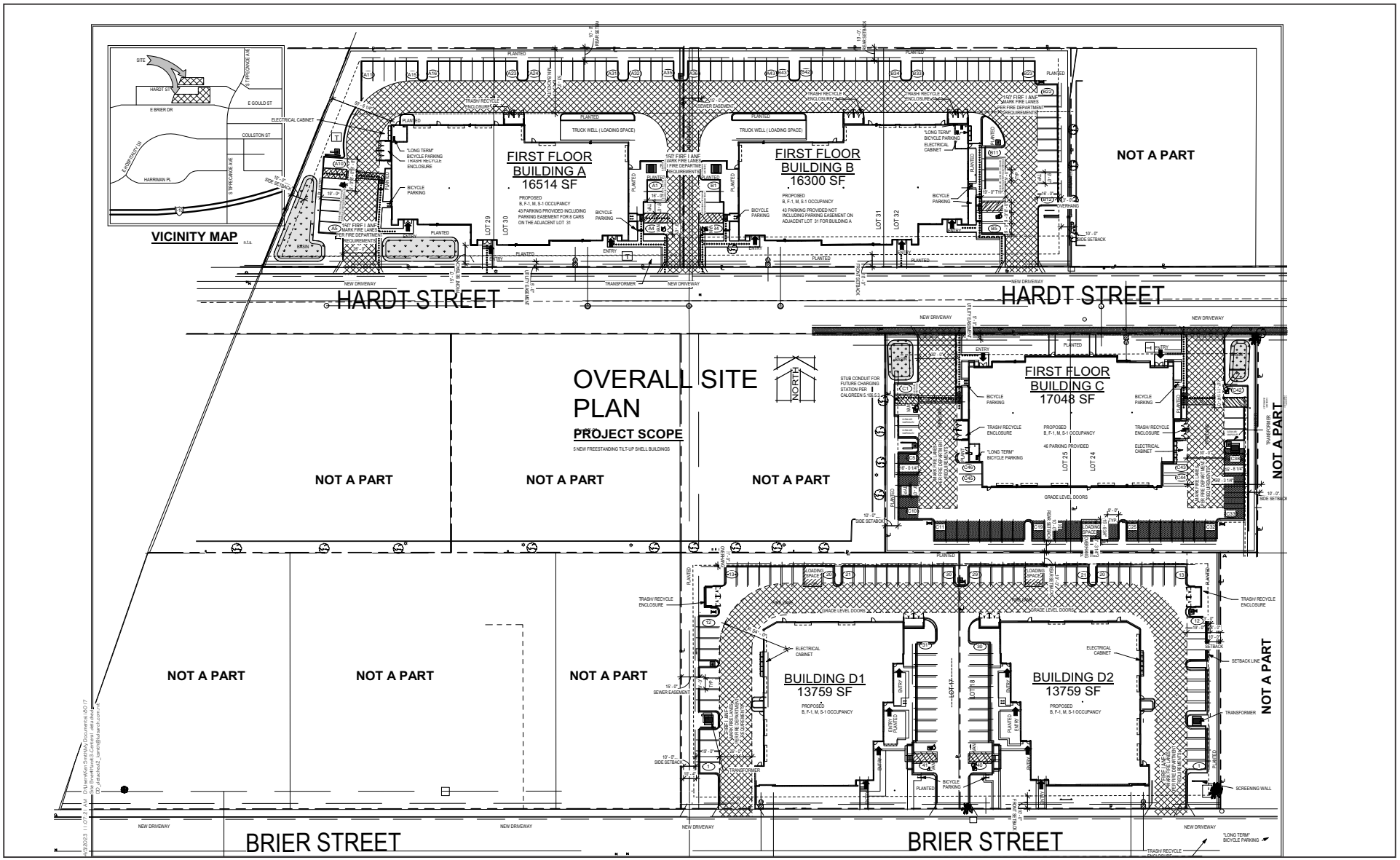

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FIGURE 3

0 200 400

FEET

SOURCE: HPA Architecture

Hardt and Brier Commercial Project

Site Plan

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Construction is anticipated to begin in February 2025 and be completed in 8 months, ending in October 2025. The proposed project would require the export of approximately 4,800 cubic yards and the import of 2,400 cubic yards of soil, for a net export of 2,400 cubic yards of soil. Construction activities for the project include grading and excavation, site preparation, building construction, landscape installation, paving, and architectural coatings. In addition, construction equipment would utilize Tier 4 Final engines.

EXISTING LAND USES IN THE PROJECT AREA

For the purposes of this analysis, sensitive receptors are areas of population that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include residences, schools, daycare centers, hospitals, parks, and similar uses which are sensitive to air quality. Impacts on sensitive receptors are of particular concern because they are the population most vulnerable to the effects of air pollution. The project site is surrounded by industrial, commercial, office, and residential uses. Land uses in the project area include an existing chemical plant to the north, an existing local farm and residential uses to the west, an existing surgery center and commercial uses to the south, and office uses to the east.

The closest sensitive receptor to the project site is the surgery center located south of the project site at approximately 355 feet from the southern project boundary line to the building. In addition, residential uses such as single-family homes are located at approximately 585 feet east of the project site across Tippecanoe Avenue.

BACKGROUND

This section provides current background information on air pollutants and their health effects. It also provides current regulatory background information, including information from the California Air Resources Board's (CARB) Air Quality and Land Use Handbook[3] (CARB Handbook); a description of the general health risks of toxics, and the significance criteria for project evaluation.

AIR POLLUTANTS AND HEALTH EFFECTS

Both State and federal governments have established health-based ambient air quality standards (California Ambient Air Quality Standards [CAAQS] and National Ambient Air Quality Standards [NAAQS], respectively) for six criteria air pollutants:[4] carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (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 populace with a reasonable margin of safety. Long-term exposure to elevated levels of criteria pollutants may result in adverse health effects. However, emission thresholds established by an air district are used to manage total regional emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations and could adversely affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds and the basin-wide context of individual project emissions, there is no known direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO_X) and volatile organic compounds (VOCs).

Occupants of facilities such as schools, daycare centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous outdoor work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise.

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3 California Air Resources Board (CARB). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

4 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.

Ozone

Rather than being directly emitted, ozone (O_3 or smog) is formed by photochemical reactions between NO_X and VOCs. Ozone is a pungent, colorless gas. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children. Ozone levels peak during the summer and early fall months.

Carbon Monoxide

Carbon monoxide (CO) is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. CO passes through the lungs into the bloodstream, where it interferes with the transfer of oxygen to body tissues.

Particulate Matter

Particulate matter (PM) is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are 10 microns or less in diameter, or PM_{10}. Fine, suspended particulate matter with an aerodynamic diameter of 2.5 microns or less, or $PM_{2.5}$, 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 byproducts 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.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) 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 contributes 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.

Sulfur Dioxide

Sulfur dioxide (SO_2) 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.

Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses and cars), smelters (metal refineries), and the manufacture of lead storage batteries have been the primary sources of lead (Pb) released into the atmosphere. Lead has multiple adverse neurotoxic health effects, and children are at special risk. Some lead-containing chemicals cause cancer in

animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. On October 15, 2008, the United States Environmental Protection Agency (USEPA) strengthened the NAAQS for lead by lowering it from 1.5 to 0.15 micrograms per cubic meter ($\mu g/m^3$). The USEPA revised the monitoring requirements for lead in December 2010. These requirements focus on airports and large urban areas, resulting in an increase in 76 monitors nationally.

Volatile Organic Compounds

Volatile organic compounds (VOCs, also known as reactive organic gases [ROGs] and reactive organic compounds [ROCs]) are formed from the combustion of fuels and the evaporation of organic solvents. VOCs are not defined as criteria pollutants, however, because VOCs accumulate in the atmosphere more quickly during the winter, when sunlight is limited and photochemical reactions are slower, they are a prime component of the photochemical smog reaction. There are no attainment designations for VOCs.

Toxic Air Contaminants

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 USEPA and the 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.

TACs do not have ambient air quality standards (AAQS), but are regulated by the USEPA, CARB, and the SCAQMD. In 1998, the CARB identified particulate matter from diesel-fueled engines as a TAC. The CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[5] High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers and 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, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter (DPM) is emitted from mobile sources—primarily “off-road” sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as “on-road” sources such as trucks and buses traveling on freeways and local roadways.

Although not specifically monitored, recent studies indicate that exposure to DPM may contribute significantly to a cancer risk (a risk of approximately 500 to 700 in 1,000,000) that is greater than all other measured TACs combined.[6] The technology for reducing DPM emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines

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5 CARB. 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

6 Ibid.

and emission control systems to reduce and remediate diesel emissions. The CARB anticipated that by 2020, average statewide DPM concentrations will decrease by 85 percent from levels in 2000 with full implementation of the CARB's Diesel Risk Reduction Plan,[7] meaning that the statewide health risk from DPM is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000. The CARB 2000 Diesel Risk Reduction Plan is still the most recent version and has not been updated.

Table A summarizes the sources and health effects of air pollutants discussed in this section. Table B presents a summary of CAAQS and NAAQS.

Table A: Sources and 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 construction • 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.

Source: California Air Resources Board (2015).

[7] CARB. 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

Table B: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]		Federal Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
Ozone (O_3)[h]	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM_{10})[i]	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		–		
Fine Particulate Matter ($PM_{2.5}$)[i]	24-Hour	-		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	–	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–	–	
Nitrogen Dioxide (NO_2)[j]	Annual Arithmetic Mean	0.03 ppm (57 µg/m^3)	Gas Phase Chemi-luminescence	53 ppb (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemi-luminescence
	1-Hour	0.18 ppm (339 µg/m^3)		100 ppb (188 µg/m^3)	-	
Lead (Pb)[l,m]	30-Day Average	1.5 µg/m^3	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m^3 (for certain areas)[l]	Same as Primary Standard	
	Rolling 3-Month Average[i]	–		0.15 µg/m^3		
Sulfur Dioxide (SO_2)[k]	24-Hour	0.04 ppm (105 µg/m3)	Ultraviolet Fluorescence	0.14 ppm (for certain areas)	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3-Hour	–		–	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3)[k]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[k]	–	
Visibility-Reducing Particles[l]	8-Hour	See footnote n	Beta Attenuation and Transmittance through Filter Tape.	No Federal Standards		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[j]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: California Air Resources Board (2016) (Website: https://www.arb.ca.gov/research/aaqs/aaqs2.pdf).

Table notes are provided on the following page.

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California Ambient Air Quality Standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current national policies.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] Any equivalent measurement method which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[f] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[g] Reference method as described by the USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.

[h] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24- hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[j] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[k] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[l] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[m] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[n] In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
µg/m^3 = micrograms per cubic meter
CARB = California Air Resources Board
mg/m^3 = milligrams per cubic meter
ppb = parts per billion
ppm = parts per million
USEPA = United States Environmental Protection Agency

ENERGY

Electricity

Electricity is a manmade resource. The production of electricity requires the consumption or conversion of energy resources (including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources) into energy. Electricity is used for a variety of purposes (e.g., lighting, heating, cooling, and refrigeration, and for operating appliances, computers, electronics, machinery, and public transportation systems).

According to the most recent data available, in 2020, California's electricity was generated primarily by natural gas (37.06 percent), renewable sources (33.09 percent), large hydroelectric (12.21 percent), nuclear (9.33 percent), coal (2.74 percent), and other and unspecified sources. Total electric generation in California in 2020 was 272,576 gigawatt-hours (GWh), down 2 percent from the 2019 total generation of 277,704 GWh.[8]

The project site is within the service territory of Southern California Edison (SCE). SCE provides electricity to more than 15 million people in a 50,000-square-mile (sq mi) area of Central, Coastal, and Southern California.[9] According to the California Energy Commission (CEC), total electricity consumption in the SCE service area in 2021 was 103,045 GWh (36,375 GWh for the residential sector and 51,057 GWh for the non-residential sector). Total electricity consumption in San Bernardino County in 2021 was 16,180.8 GWh (16,180,811,158 kilowatt-hours (kWh).[10]

Natural Gas

Natural gas is a non-renewable fossil fuel. Fossil fuels are formed when layers of decomposing plant and animal matter are exposed to intense heat and pressure under the surface of the Earth over millions of years. Natural gas is a combustible mixture of hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas is found in naturally occurring reservoirs in deep underground rock formations. Natural gas is used for a variety of uses (e.g., heating buildings, generating electricity, and powering appliances such as stoves, washing machines and dryers, gas fireplaces, and gas grills).

Natural gas consumed in California is used for electricity generation (45 percent), residential uses (21 percent), industrial uses (25 percent), and commercial uses (9 percent). California continues to depend on out-of-state imports for nearly 90 percent of its natural gas supply.[11]

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8 California Energy Commission (CEC). 2021a. *2020 Total System Electric Generation*. Website: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation (accessed May 2023).

9 Southern California Edison (SCE). 2020. About Us. Website: https://www.sce.com/about-us/who-we-are (accessed May 2023).

10 CEC. 2020a. Electricity Consumption by County and Entity. Website: http://www.ecdms.energy.ca.gov/elecbycounty.aspx and http://www.ecdms.energy.ca.gov/elecbyutil.aspx (accessed May 2023).

11 CEC. 2021c. Supply and Demand of Natural Gas in California. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california (accessed May 2023).

The Southern California Gas Company (SoCalGas) is the natural gas service provider for the project site. SoCalGas provides natural gas to approximately 21.8 million people in a 24,000 sq mi service area throughout Central and Southern California, from Visalia to the Mexican border.[12] According to the CEC, total natural gas consumption in the SoCalGas service area in 2021 was 6,755 million therms (2,308 million therms for the residential sector). Total natural gas consumption in San Bernardino County in 2021 was 561 million therms (561,360,617 therms).[13]

Fuel

Petroleum is also a non-renewable fossil fuel. Petroleum is a thick, flammable, yellow-to-black mixture of gaseous, liquid, and solid hydrocarbons that occurs naturally beneath the earth's surface. Petroleum is primarily recovered by oil drilling. It is refined into a large number of consumer products, primarily fuel oil, gasoline, and diesel.

The average fuel economy for light-duty vehicles (autos, pickups, vans, and SUVs) in the United States has steadily increased from about 14.9 miles per gallon (mpg) in 1980 to 22.9 mpg in 2020.[14] Federal fuel economy standards have changed substantially since the Energy Independence and Security Act was passed in 2007. The Act, which originally mandated a national fuel economy standard of 35 mpg by year 2020[15], applies to cars and light trucks of Model Years 2011 through 2020. In March 2020, the United States Environmental Protection Agency (USEPA) and National Highway Traffic Safety Administration (NHTSA) finalized the Corporate Average Fuel Economy (CAFE) standards for Model Years 2024–2026 Passenger Cars and Light Trucks, further detailed below.

Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline being consumed by light-duty cars, pickup trucks, and sport utility vehicles. According to the most recent data available, total gasoline consumption in California was 289,918 thousand barrels or 1,464.7 trillion British Thermal Units (BTU) in 2020.[16] Of the total gasoline consumption, 273,289 thousand barrels or 1,380.7 trillion BTU were consumed for transportation.[17] Based on fuel consumption obtained from CARB's California Emissions Factor Model, Version 2021 (EMFAC2021), approximately

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12 Southern California Gas Company (SoCalGas). 2020. About SoCalGas. Website: https://www3.socalgas.com/about-us/company-profile (accessed May 2023).

13 CEC. 2020b. Gas Consumption by County and Entity. Website: http://www.ecdms.energy.ca.gov/gasbycounty.aspx and http://www.ecdms.energy.ca.gov/gasbyutil.aspx (accessed May 2023).

14 U.S. Department of Transportation (USDOT). "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles." Website: https://www.bts.dot.gov/bts/bts/content/average-fuel-efficiency-us-light-duty-vehicles (accessed May 2023).

15 U.S. Department of Energy. 2007. "Energy Independence & Security Act of 2007." Website: https://www.afdc.energy.gov/laws/eisa (accessed May 2023).

16 A British Thermal Unit is defined as the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

17 U.S. Department of Energy, Energy Information Administration (EIA). 2021. California State Profile and Energy Estimates. Table F3: Motor gasoline consumption, price, and expenditure estimates, 2020. Website: eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_mg.html&sid=CA (accessed May 2023).

907.3 million gallons of gasoline and approximately 325.0 million gallons of diesel will be consumed from vehicle trips in San Bernardino County in 2023.

GREENHOUSE GASES

Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. The Earth's average near-surface atmospheric temperature rose 0.6 ± 0.2° Celsius (°C) or 1.1 ± 0.4° Fahrenheit (°F) in the 20th century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming. GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.[18]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- CO_2
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO_2, methane, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this air quality analysis, the term "GHGs" will refer collectively to the six gases listed above.

[18] The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of greenhouse gas results in global warming, the naturally occurring greenhouse effect is necessary to keep our planet at a comfortable temperature.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The global warming potential is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to carbon dioxide, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e). Table C shows the GWP for each type of GHG. For example, SF_6 is 23,900 times more potent at contributing to global warming than CO_2.

Table C: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-Year Time Horizon)
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	310
HFC-23	270	11,700
HFC-134a	14	140
HFC-152a	1.4	140
PFC: Tetrafluoromethane (CF_4)	50,000	6,500
PFC: Hexafluoromethane (C_2F_6)	10,000	9,200
Sulfur Hexafluoride (SF_6)	3,200	23,900

Source: *Second Update to the Climate Change Scoping Plan: Building on the Framework* (CARB 2017). Website: www.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2017-scoping-plan-documents (accessed May 2023).

The following discussion summarizes the characteristics of the six GHGs and black carbon.

Carbon Dioxide

In the atmosphere, carbon generally exists in its oxidized form, as carbon dioxide (CO_2). Natural sources of CO_2 include the respiration (breathing) of humans, animals and plants, volcanic out gassing, decomposition of organic matter and evaporation from the oceans. Human caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Natural sources release approximately 150 billion tons of CO_2 each year, far outweighing the 7 billion tons of man-made emissions of CO_2 each year. Nevertheless, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO_2, and consequently, the gas is building up in the atmosphere.

In 2020, total annual CO_2 accounted for approximately 80.2 percent of California's overall GHG emissions.[19] Transportation is the single largest source of CO_2 in California, which is primarily

[19] CARB. 2022b. *GHGs Descriptions & Sources in California*. Website: ww2.arb.ca.gov/ghg-descriptions-sources (accessed May 2023).

comprised of on-road travel. Electricity production, industrial and residential sources also make important contributions to CO_2 emissions in California.

Methane

Methane (CH_4) is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH_4 in California. Total annual emissions of CH_4 accounted for approximately 10.5 percent of GHG emissions in California in 2020.[20]

Nitrous Oxide

Nitrous oxide (N_2O) is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. Nitrous oxide emissions accounted for approximately 3.5 percent of GHG emissions in California in 2020.[21]

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[22] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs. HFCs, PFCs, and SF_6 accounted for about 5.5 percent of GHG emissions in California in 2020.[23]

Black Carbon

Black carbon is the most strongly light-absorbing component of PM formed by burning fossil fuels such as coal, diesel, and biomass. Black carbon is emitted directly into the atmosphere in the form of $PM_{2.5}$ and is the most effective form of PM, by mass, at absorbing solar energy. Per unit of mass in the atmosphere, black carbon can absorb one million times more energy than CO_2.[24] Black carbon

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20 CARB. 2021. GHGs Descriptions & Sources in California. Website: ww2.arb.ca.gov/ghg-descriptions-sources (accessed May 2023).

21 Ibid.

22 The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

23 CARB. 2021. op. cit.

24 U.S. Environmental Protection Agency (USEPA). 2015. Black Carbon, Basic Information. February 14, 2017. Website: 19january2017snapshot.epa.gov/www3/airquality/blackcarbon/basic.html (accessed May 2023).

contributes to climate change both directly, such as absorbing sunlight, and indirectly, such as affecting cloud formation. However, because black carbon is short-lived in the atmosphere, it can be difficult to quantify its effect on global warming.

Most U.S. emissions of black carbon come from mobile sources (52 percent), particularly from diesel-fueled vehicles. The other major source of black carbon is open biomass burning, including wildfires, although residential heating and industry also contribute. The CARB estimates that the annual black carbon emissions in California will be reduced approximately 50 percent below 2013 levels by 2030.[25]

[25] CARB. 2017b. *Short-Lived Climate Pollutant Reduction Strategy.* March. Website: https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf (accessed May 2023).

REGULATORY SETTING

AIR QUALITY REGULATIONS

The USEPA and the CARB regulate direct emissions from motor vehicles. The SCAQMD is the regional agency primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as monitoring ambient pollutant concentrations.

Federal Regulations

Federal Clean Air Act

The 1970 federal Clean Air Act (CAA) authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The federal Clean Air Act Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required of areas of the nation that exceed the standards. Under the Clean Air Act, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards by specified dates.

State Regulations

California Clean Air Act

In 1988, the California Clean Air Act (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 California Clean Air Act 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

The CARB is the State's "clean air agency." The CARB's goals are to attain and maintain healthy air quality, protect the public from exposure to toxic air contaminants, and oversee compliance with air pollution rules and regulations.

Assembly Bill 2588 Air Toxics "Hot Spots" Information and Assessment Act. Under Assembly Bill (AB) 2588, stationary sources of air pollutants are required to report the types and quantities of certain substances their facilities routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, identify facilities having localized impacts, determine health risks, and notify nearby residents of significant risks.

The California Air Resources Board Handbook. The CARB has developed an Air Quality and Land Use Handbook[26] which 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. According to the CARB Handbook, air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high traffic roadways. Other studies have shown that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for much of the overall cancer risk from airborne toxics in California. The CARB Handbook recommends that county and city planning agencies strongly consider proximity to these sources when finding new locations for "sensitive" land uses such as homes, medical facilities, daycare centers, schools, and playgrounds.

Land uses that can produce 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 CARB Handbook include taking steps to 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 1,000 feet of a major service and maintenance rail yard;
- Immediately downwind of ports (in the most heavily impacted zones) and petroleum refineries;
- Within 300 feet of any dry cleaning operation (for operations with two or more machines, provide 500 feet); and
- Within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater).

The CARB Handbook specifically states that its recommendations are advisory and acknowledges land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

The recommendations are generalized and do not consider site-specific meteorology, freeway truck percentages, or other factors that influence risk for a particular project site. The purpose of this guidance is to help land use agencies determine when to further examine project sites for actual health risk associated with the location of new sensitive land uses.

Regional Regulations

South Coast Air Quality Management District

The SCAQMD has jurisdiction over most air quality matters in the South Coast Air Basin (Basin). This area includes all of Orange County, Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of

[26] CARB. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

Riverside County. The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Basin and is tasked with implementing certain programs and regulations required by the CAA and the CCAA. The SCAQMD prepares plans to attain CAAQS and NAAQS. SCAQMD is directly responsible for reducing emissions from stationary (area and point) sources. The SCAQMD develops rules and regulations, establishes permitting requirements, inspects emissions sources, and enforces such measures though educational programs or fines, when necessary.

The proposed project could be subject to the following SCAQMD rules and regulations:

- **Regulation IV - Prohibitions:** This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air pollutant emissions, fuel contaminants, start-up/shutdown exemptions, and breakdown events.
    - **Rule 402 - Nuisance:** This rule restricts the discharge of any contaminant in quantities that cause or have a natural ability to cause injury, damage, nuisance, or annoyance to businesses, property, or the public.
    - **Rule 403 - Fugitive Dust:** This rule requires the prevention, reduction, or mitigation of fugitive dust emissions from a project site. Rule 403 restricts visible fugitive dust to a project property line, restricts the net PM_{10} emissions to less than 50 $\mu g/m^3$ and restricts the tracking out of bulk materials onto public roads. Additionally, Rule 403 requires an applicant to utilize one or more of the best available control measures (identified in the tables within the rule). Control measures may include adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers, and/or ceasing all activities. Finally, Rule 403 requires that a contingency plan be prepared if so determined by the USEPA. In addition, SCAQMD Rule 403(e), Additional Requirements for Large Operations, includes requirements to provide Large Operation Notification Form 403 N, appropriate signage, additional dust control measures, and employment of a dust control supervisor that has successfully completed the Dust Control training class in the South Coast Air Basin.
- **Regulation XI - Source Specific Standards:** Regulation XI sets emissions standards for different sources.
    - **Rule 1113 - Architectural Coatings:** This rule limits the amount of VOCs from architectural coatings and solvents, which lowers the emissions of odorous compounds.

The SCAQMD is responsible for demonstrating regional compliance with AAQS but has limited indirect involvement in reducing emissions from fugitive, mobile, and natural sources. To that end, the SCAQMD works cooperatively with the CARB, the Southern California Association of Governments (SCAG), county transportation commissions, local governments, and other federal and State government agencies. It has responded to this requirement by preparing a series of Air Quality Management Plans (AQMPs) to meet CAAQS and NAAQS. SCAQMD and the SCAG are responsible for formulating and implementing the AQMP for the Basin. The main purpose of an AQMP is to bring

the area into compliance with federal and State air quality standards. Every 3 years, SCAQMD prepares a new AQMP, updating the previous plan and 20-year horizon.[27]

The Final 2022 Air Quality Management Plan is the currently adopted AQMP. Key elements of the Final 2022 AQMP include the following:

- Calculating and taking credit for co-benefits from other planning efforts (e.g., climate, energy, and transportation)
- A strategy with fair-share emission reductions at the federal, State, and local levels
- Investment in strategies and technologies meeting multiple air quality objectives
- Seeking new partnerships and significant funding for incentives to accelerate deployment of zero-emission and near-zero emission technologies
- Enhanced socioeconomic assessment, including an expanded environmental justice analysis
- Attainment of the 24-hour $PM_{2.5}$ standard in 2019 with no additional measures
- Attainment of the annual $PM_{2.5}$ standard by 2025 with implementation of a portion of the O_3 strategy
- Attainment of the 1-hour O_3 standard by 2022 with no reliance on "black box" future technology (CAA Section 182(e)(5) measures)

The 2022 AQMP builds upon measures already in place from previous AQMPs. It also includes a variety of additional strategies such as regulation, accelerated deployment of available cleaner technologies (e.g., zero emissions technologies, when cost-effective and feasible, and low NO_x technologies in other applications), best management practices, co-benefits from existing programs (e.g., climate and energy efficiency), incentives, and other CAA measures to achieve the 2015 8-hour ozone standard.

Southern California Association of Governments

SCAG is a council of governments for Los Angeles, Orange, Riverside, San Bernardino, Imperial, and Ventura Counties. It is a regional planning agency and serves as a forum for regional issues relating to transportation, the economy and community development, and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With regard to air quality planning, SCAG prepares the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP), which address regional development and growth forecasts and form the basis for the land use and transportation control portions of the AQMP and are utilized in the preparation of the air

[27] SCAQMD. 2022. *Final 2022 Air Quality Management Plan*. December 2.

quality forecasts and consistency analysis included in the AQMP. The RTP, RTIP, and AQMP are based on projections originating within local jurisdictions.

Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use, and energy conservation measures that affect air quality. SCAG's Regional Comprehensive Plan (RCP) provides growth forecasts that are used in the development of air quality-related land use and transportation control strategies by the SCAQMD. The RCP is a framework for decision-making for local governments, assisting them in meeting federal and State mandates for growth management, mobility, and environmental standards, while maintaining consistency with regional goals regarding growth and changes. Policies within the RCP include consideration of air quality, land use, transportation, and economic relationships by all levels of government.

SCAG adopted the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal) on September 3, 2020. Connect SoCal is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. Connect SoCal is an important planning document for the region, allowing project sponsors to qualify for federal funding and takes into account operations and maintenance costs, to ensure reliability, longevity, and cost effectiveness. The forecasted development pattern, when integrated with the financially constrained transportation investments identified in Connect SoCal, would reach the regional target of reducing GHG emissions from autos and light-duty trucks by 19 percent by 2035 (compared to 2005 levels).

Local Regulations

City of San Bernardino General Plan

The City of San Bernardino addresses air quality in the Natural Resources and Conservation Element of its City of San Bernardino General Plan.[28] The Natural Resources and Conservation Element contains goals and policies that work to improve air quality. The following policies are applicable to the proposed project:

- **Policy 12.5.1.** Reduce the emission of pollutants including carbon monoxide, oxides of nitrogen, photochemical smog, and sulfate in accordance with South Coast Air Quality Management District (SCAQMD) standards.
- **Policy 12.5.2.** Prohibit the development of land uses (e.g., heavy manufacturing) that will contribute significantly to air quality degradation, unless sufficient mitigation measures are undertaken according SCAQMD standards.
- **Policy 12.5.3.** Require dust abatement measures during grading and construction operations.
- **Policy 12.5.4.** Evaluate the air emissions of industrial land uses to ensure that they will not impact adjacent uses.

[28] San Bernardino, City of. 2005. *City of San Bernardino General Plan*. November.

- **Policy 12.6.3.** Install streetscape improvements and other amenities to encourage pedestrian activity in key City areas and reduce vehicular travel and associated air emissions.

- **Policy 12.6.5.** Require qualifying development to implement or participate in transportation demand management programs, which provide incentives for car pooling, van pools, and the use of public transit and employ other trip reduction techniques (consistent with the Circulation Element and South Coast Air Quality Management Plan).

ENERGY REGULATORY SETTING

Federal and State agencies regulate energy use and consumption through various means and programs. On the federal level, the U.S. Department of Transportation (USDOT), the United States Department of Energy, and the USEPA are three federal agencies with substantial influence over energy policies and programs. Generally, federal agencies influence and regulate transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy-related research and development projects, and through funding for transportation infrastructure improvements. On the State level, the California Public Utilities Commission (CPUC) and the CEC are two agencies with authority over different aspects of energy.

The CPUC regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies and serves the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at reasonable rates, with a commitment to environmental enhancement and a healthy California economy.

The CEC is the State's primary energy policy and planning agency. The CEC forecasts future energy needs, promotes energy efficiency, supports energy research, develops renewable energy resources, and plans for/directs state response to energy emergencies. The applicable federal, State, regional, and local regulatory framework is discussed below.

Federal Regulations

Energy Policy Act of 2005

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under this Act, consumers and businesses can obtain federal tax credits for purchasing fuel-efficient appliances and products (including hybrid vehicles), building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

Corporate Average Fuel Economy Standards

On March 31, 2022, the National Highway Traffic Safety Administration (NHTSA) finalized the Corporate Average Fuel Economy (CAFE) standards for Model Years 2024–2026 Passenger Cars and Light Trucks. The amended CAFE standards would require an industry wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026, by increasing fuel

efficiency by 8 percent annually for model years 2024–2025, and 10 percent annually for model year 2026. The final standards are estimated to save about 234 billion gallons of gas between model years 2030 to 2050.

State Regulations

Assembly Bill 1575, Warren-Alquist Act

In 1975, largely in response to the oil crisis of the 1970s, the State Legislature adopted AB 1575 (also known as the Warren-Alquist Act), which created the CEC. The statutory mission of the CEC is to forecast future energy needs; license power plants of 50 megawatts (MW) or larger; develop energy technologies and renewable energy resources; plan for and direct State responses to energy emergencies; and, perhaps most importantly, promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code (PRC) Section 21100(b)(3) and *State CEQA Guidelines* Section 15126.4 to require Environmental Impact Reports (EIRs) to include, where relevant, mitigation measures proposed to minimize the wasteful, inefficient, and unnecessary consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F to the *State CEQA Guidelines*. Appendix F assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the *State CEQA Guidelines* also states that the goal of conserving energy implies the wise and efficient use of energy and the means of achieving this goal, including (1) decreasing overall per capita energy consumption; (2) decreasing reliance on fossil fuels such as coal, natural gas, and oil; and (3) increasing reliance on renewable energy sources.

Senate Bill 1389, Energy: Planning and Forecasting

In 2002, the State Legislature passed Senate Bill (SB) 1389, which required the CEC to develop an integrated energy plan every 2 years for electricity, natural gas, and transportation fuels for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission vehicles (ZEVs) and their infrastructure needs, and encouragement of urban designs that reduce vehicle miles traveled (VMT) and accommodate pedestrian and bicycle access.

In compliance with the requirements of SB 1389, the CEC adopts an Integrated Energy Policy Report every 2 years and an update every other year. The most recently adopted report includes the *2021 Integrated Energy Policy Report*[29] and the *2022 Integrated Energy Policy Report Update.*[30] The *Integrated Energy Policy Report* covers a broad range of topics, including decarbonizing buildings, integrating renewables, energy efficiency, energy equity, integrating renewable energy, updates on

[29] CEC. 2021b. *2021 Integrated Energy Policy Report*. California Energy Commission. Docket Number: 21-IEPR-01.

[30] CEC. 2022. *2022 Integrated Energy Policy Report Update*. California Energy Commission. Docket Number: 22-IEPR-01.

Southern California electricity reliability, climate adaptation activities for the energy sector, natural gas assessment, transportation energy demand forecast, and the California Energy Demand Forecast. The *Integrated Energy Policy Report* provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs.

Renewable Portfolio Standard

SB 1078 established the California Renewable Portfolio Standards program in 2002. SB 1078 initially required that 20 percent of electricity retail sales be served by renewable resources by 2017; however, this standard has become more stringent over time. In 2006, SB 107 accelerated the standard by requiring that the 20 percent mandate be met by 2010. In April 2011, SB 2 required that 33 percent of electricity retail sales be served by renewable resources by 2020. In 2015, SB 350 established tiered increases to the Renewable Portfolio Standards of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. In 2018, SB 100 increased the requirement to 60 percent by 2030 and required that all the State's electricity come from carbon-free resources by 2045. SB 100 took effect on January 1, 2019.[31]

Title 24, California Building Code

Energy consumption by new buildings in California is regulated by the Building Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations (CCR), known as the California Building Code (CBC). The CEC first adopted the Building Energy Efficiency Standards for Residential and Non-residential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in the State. The CBC is updated every 3 years, with the most recent update consisting of the 2022 CBC that became effective January 1, 2023. The efficiency standards apply to both new construction and rehabilitation of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed those provided in CCR Title 24.

California Green Building Standards Code

In 2010, the California Building Standards Commission (CBSC) adopted Part 11 of the Title 24 Building Energy Efficiency Standards, referred to as the California Green Building Standards Code (CALGreen Code). The CALGreen Code took effect on January 1, 2011. The CALGreen Code is updated on a regular basis, with the most recent update consisting of the 2022 CALGreen Code standards that became effective January 1, 2023. The CALGreen Code established mandatory measures for residential and non-residential building construction and encouraged sustainable construction practices in the following five categories: (1) planning and design, (2) energy efficiency, (3) water efficiency and conservation, (4) material conservation and resource efficiency, and (5) indoor environmental quality. Although the CALGreen Code was adopted as part of the State's

[31] California Public Utilities Commission (CPUC). 2019. Renewables Portfolio Standard Program. Website: cpuc.ca.gov/rps (accessed May 2023).

efforts to reduce greenhouse gas (GHG) emissions, the CALGreen Code standards have co-benefits of reducing energy consumption from residential and non-residential buildings subject to the standard.

California Energy Efficiency Strategic Plan

On September 18, 2008, the CPUC adopted California's first Long-Term Energy Efficiency Strategic Plan, presenting a roadmap for energy efficiency in California. The Plan articulates a long-term vision and goals for each economic sector and identifies specific near-term, mid-term, and long-term strategies to assist in achieving those goals. The plan also reiterates the following four specific programmatic goals known as the "Big Bold Energy Efficiency Strategies" that were established by the CPUC in Decisions D.07-10-032 and D.07-12-051:

- All new residential construction will be zero net energy (ZNE) by 2020.
- All new commercial construction will be ZNE by 2030.
- 50 percent of commercial buildings will be retrofitted to ZNE by 2030.
- 50 percent of new major renovations of State buildings will be ZNE by 2025.

Regional Regulations

There are no regional regulations that apply to the proposed project.

Local Regulations

City of San Bernardino General Plan

The City of San Bernardino addresses energy in the Energy and Water Conservation Element of its San Bernardino General Plan. The Energy and Water Conservation Element contains policies that work to increase energy efficiency in City facilities and operations and in private developments. The following policies are applicable to the proposed project:

- **Policy 13.1.2.** Ensure the incorporation of energy conservation features in the design of all new construction and site development in accordance with State Law.

- **Policy 13.1.7.** Ensure that new development consider the ability of adjacent properties to utilize energy conservation design.

GREENHOUSE GAS REGULATORY SETTING

This section describes regulations related to Global Climate Change at the federal, State, and local level.

Federal Regulations

The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the USEPA has the authority to regulate CO_2 emissions under the CAA. While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the USEPA commenced several actions in 2009 to implement a regulatory approach to global climate change.

This includes the 2009 USEPA final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. Additionally, the USEPA Administrator signed an endangerment finding action in 2009 under the Clean Air Act, finding that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national GHG emission standards.

In October 2012, the USEPA and the NHTSA, on behalf of the USDOT, issued final rules to further reduce GHG emissions and improve CAFE standards for light-duty vehicles for model years 2017 and beyond (77 *Federal Register* 62624). The NHTSA's CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would increase fuel economy to the equivalent of 54.5 miles per gallon, limiting vehicle emissions to 163 grams of CO_2 per mile for the fleet of cars and light-duty trucks by model year 2025 (77 *Federal Register* 62630).

On March 31, 2022, the NHTSA finalized the CAFE standards for Model Years 2024–2026 Passenger Cars and Light Trucks. The amended CAFE standards would require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024–2025, and 10 percent annually for model year 2026. The final standards are estimated to save about 234 billion gallons of gas between model years 2030 to 2050.

State Regulations

The CARB is the lead agency for implementing climate change regulations in the State. Since its formation, the CARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. Key efforts by the State are described below.

Assembly Bill 1493 (2002)

In a response to the transportation sector's significant contribution to California's CO_2 emissions, AB 1493 was enacted on July 22, 2002. AB 1493 requires the CARB to set GHG emission standards for passenger vehicles and light duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) manufactured in 2009 and all subsequent model years. These standards (starting in model years 2009 to 2016) were approved by the CARB in 2004, but the needed waiver of CCAA Preemption was not granted by the USEPA until June 30, 2009. The CARB responded by amending its original regulation, now referred to as Low Emission Vehicle III, to take effect for model years starting in 2017 to 2025. The Trump administration revoked California's waiver in 2019; however, the Biden administration restored California's waiver in 2021.

Executive Order S-3-05 (2005)

Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. To combat those concerns, the executive order established California's GHG emissions reduction targets, which established the following goals:

- GHG emissions should be reduced to 2000 levels by 2010;
- GHG emissions should be reduced to 1990 levels by 2020; and
- GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency (CalEPA) is required to coordinate efforts of various State agencies in order to collectively and efficiently reduce GHGs. A biannual progress report must be submitted to the Governor and State Legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

The Secretary of CalEPA leads the Climate Action Team (CAT) made up of representatives from State agencies as well as numerous other boards and departments. The CAT members work to coordinate statewide efforts to implement global warming emission reduction programs and the State's Climate Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the statewide GHG targets that were established in the executive order and further defined under AB 32, the "Global Warming Solutions Act of 2006." The first CAT Report to the Governor and the Legislature was released in March 2006, which it laid out 46 specific emission reduction strategies for reducing GHG emissions and reaching the targets established in the executive order. The most recent report was released in December 2020.

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

California's major initiative for reducing GHG emissions is AB 32, passed by the State legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The CARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) of CO_2e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual (BAU) 2020 emissions of 596 MMT. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The Scoping Plan was approved by the CARB on December 11, 2008, and contains the main strategies California will implement to achieve the reduction of approximately 169 MMT CO_2e, or approximately 30 percent, from the State's projected 2020 emissions level of 596 MMT CO_2e under a BAU scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e);
- The Low-Carbon Fuel Standard (15.0 MMT CO_2e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO_2e).

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO_2e by 2020.

On August 24, 2011, the CARB unanimously approved both the new supplemental assessment and reapproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The CARB also approved a more robust CEQA equivalent document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

CARB has not yet determined what amount of GHG reductions it recommends from local government operations and local land use decisions; however, the Scoping Plan states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, CARB is also developing an additional protocol for community emissions). CARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that would result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects an approximately 5.0 MMT CO_2e reduction due to implementation of SB 375.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed the CARB and the CAT to identify a list of "discrete early action GHG reduction measures" that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed EO S-1-07, further solidifying California's dedication to reducing GHGs by setting a new Low Carbon Fuel Standard (LCFS). This executive order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the CARB to consider the LCFS as a discrete early action measure. In 2011, U.S. District Court Judge Lawrence O'Neil issued an injunction preventing implementation of the LCFS, ruling that it is unconstitutional. In 2012, the Ninth Circuit Court of Appeal stayed the District Court's injunction, allowing implementation of the LCFS. The Ninth Circuit decided to uphold the LCFS.

In June 2007, the CARB approved a list of 37 early action measures, including three discrete early action measures (LCFS, Restrictions on GWP Refrigerants, and Landfill CH_4 Capture).[32] Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code Section 38560.5. The CARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of PFCs from the semiconductor industry, reduction of propellants in consumer products, proper tire

[32] CARB. 2007b. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

inflation, and SF_6 reductions from the non-electricity sector. The combination of early action measures is estimated to reduce statewide GHG emissions by nearly 16 MMT.[33]

The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines CARB climate change priorities until 2020, and also sets the groundwork to reach long-term goals set forth in EOs S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,[34] to reflect the 2030 target set by EO B-30-15 and codified by SB 32.

The 2022 Scoping Plan[35] was approved in December 2022 and assesses progress towards achieving the SB 32 2030 target and lay out a path to achieve carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

Senate Bill 97 (2007)

SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code [PRC], Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Resources Agency guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA.

The California Natural Resources Agency adopted the amendments to the *State CEQA Guidelines* in November 2018, which went into effect in December 2018. The amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs when they perform individual project analyses.

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33 CARB. 2007a. "ARB approves tripling of early action measures required under AB 32" News Release 07-46. October 25.

34 CARB. 2017a. *California's 2017 Climate Change Scoping Plan*. November.

35 CARB. 2021. *2022 Scoping Plan Update*. May 10. Website: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf (accessed May 2023).

Senate Bill 375 (2008)

SB 375, the Sustainable Communities and Climate Protection Act, which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted by the State on September 30, 2008. On September 23, 2010, the CARB adopted the vehicular GHG emissions reduction targets that had been developed in consultation with the Metropolitan Planning Organization (MPOs); the targets require a 6 to 15 percent reduction by 2020 and between 13 to 19 percent reduction by 2035 for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs such as the Fresno Council of Governments will work with local jurisdictions in the development of Sustainable Communities Strategy (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. Pursuant to SB 375, the Los Angeles/Southern California reduction targets for per capita vehicular emissions were 8 percent by 2020 and are 19 percent by 2035 as shown in Table D.

Table D: Senate Bill 375 Regional Greenhouse Gas Emissions Reduction Targets

Metropolitan Planning Organization	By 2020 (percent)	By 2035 (percent)
San Francisco Bay Area	10	19
San Diego	15	19
Sacramento	7	19
Central Valley/San Joaquin	6-13	13-16
Los Angeles/Southern California	8	19

Source: California Air Resources Board (2018).

Executive Order B-30-15 (2015)

Governor Jerry Brown signed EO B-30-15 on April 29, 2015, which added the immediate target of:

- GHG emissions should be reduced to 40 percent below 1990 levels by 2030.

All State agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

Senate Bill 350 (2015) Clean Energy and Pollution Reduction Act

SB 350, signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California's renewable portfolio standard from 33 percent to 50 percent; and
- Increasing energy efficiency in buildings by 50 percent by the year 2030.

The 50 percent renewable energy standard will be implemented by the CPUC for the private utilities and by the CEC for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other non-renewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to State energy agencies under existing law. The addition made by this legislation requires state energy agencies to plan for, and implement those programs in a manner that achieves the energy efficiency target.

Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197

In summer 2016 the Legislature passed, and the Governor signed, SB 32, and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an Intergovernmental Panel on Climate Change (IPCC) analysis of the emissions trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million CO_2e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 meant to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, which raises California's Renewables Portfolio Standard (RPS) requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18

EO B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." EO B-55-18 directs CARB to work with relevant State agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Title 24, Part 11, Building Standards Code and CALGreen Code

The California Building Standards Code, or Title 24 of the California Code of Regulations (CCR) contains the regulations that govern the construction of buildings in California. Within the Building Standards Code, two parts pertain to the incorporation of both energy efficient and green building elements into land use development. Part 6 is California's Energy Efficiency Standards for Residential and Non-Residential Buildings. These standards were first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption and are updated on an approximately 3-year cycle to allow consideration and possible incorporation of new energy efficient technologies and methods.

In November 2008, the California Building Standards Commission established the California Green Building Standards Code (CALGreen Code), which sets performance standards for residential and non-residential development to reduce environmental impacts and encourage sustainable construction practices. The CALGreen Code addresses energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code is updated every 3 years and was most recently updated in 2022 to include new mandatory measures for residential as well as non-residential uses; the new measures took effect on January 1, 2023. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

Cap and Trade

The development of a cap-and-trade program was included as a key reduction measure of the CARB AB 32 Climate Change Scoping Plan. The cap-and-trade program will help put California on the path to meet its goal of reducing GHG emissions to 1990 levels by 2020 and ultimately achieving an 80 percent reduction from 1990 levels by 2050. The cap-and-trade emissions trading program developed by the CARB took effect on January 1, 2012, with enforceable compliance obligations beginning January 1, 2013. The cap-and-trade program aims to regulate GHG emissions from the largest producers in the State by setting a statewide firm limit, or cap, on allowable annual GHG emissions. The cap was set in 2013 at approximately 2 percent below the emissions forecast for 2020. In 2014, the cap declined approximately 2 percent. Beginning in 2015 and continuing through 2020, the cap has been declining approximately 3 percent annually. The CARB administered the first auction on November 14, 2012, with many of the qualified bidders representing corporations or organizations that produce large amounts of GHG emissions, including energy companies, agriculture and food industries, steel mills, cement companies, and universities. On January 1, 2015, compliance obligation began for distributors of transportation fuels, natural gas, and other fuels. The cap-and-trade program was initially slated to sunset in 2020 but the passage of SB 398 in 2017 extended the program through 2030.

Executive Order N-79-20

EO N-79-20, which was signed by the Governor on September 23, 2020, sets the following goals for the State: 100 percent of in-state sales of new passenger cars and trucks shall be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the State shall be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and 100 percent of off-road vehicles and equipment in the State shall be zero-emission by 2035, where feasible.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of in landfills, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Through other statutes and regulations, this 50 percent diversion rate also applies to State agencies. In order of priority, waste reduction efforts must promote source reduction, recycling and composting, and environmentally safe transformation and land disposal. In 2011, AB 341 modified the California Integrated Waste Management Act and directed the California Department of Resources Recycling and Recovery (CalRecycle) to develop and adopt regulations for mandatory commercial recycling. The resulting 2012 Mandatory Commercial Recycling Regulation requires that on and after July 1, 2012, certain businesses that generate four cubic yards or more of commercial solid waste per week shall arrange recycling services. To comply with this requirement, businesses may either separate recyclables and self-haul them or subscribe to a recycling service that includes mixed waste processing. AB 341 also established a statewide recycling goal of 75 percent; the 50 percent disposal reduction mandate still applies for cities and counties under AB 939, the Integrated Waste Management Act. In April 2016, AB 1826 further modified the California Integrated Waste Management Act, requiring businesses that generate a specified amount of organic waste per week to arrange for recycling services for that organic waste in a specified manner. If CalRecycle determines that statewide disposal of organic waste has not been reduced by 50 percent below 2014 levels by 2020, businesses generating more than two cubic yards of organic waste per week would be subject to these waste collection requirements. CalRecycle plans to make this assessment in the fall of 2020. Diverting organic waste from landfills reduces emissions of CH_4. This is equivalent to reducing anaerobic decomposition of organic waste that would have otherwise occurred in landfills where organic waste is often buried with other inorganic waste.

Low Carbon Fuel Standard

In January 2007, EO S-01-07 established an LCFS. This executive order calls for a statewide goal to be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and that an LCFS for transportation fuels be established for California. The LCFS applies to all refiners, blenders, producers, or importers ("Providers") of transportation fuels in California, including fuels used by off-road construction equipment. In June 2007, CARB adopted the LCFS under AB 32 pursuant to Health and Safety Code Section 38560.5, and, in April 2009, CARB approved the new rules and carbon intensity reference values with new regulatory requirements taking effect in January 2011. The standards require providers of transportation fuels to report on the mix of fuels they provide and demonstrate they meet the LCFS intensity standards annually. This is accomplished by ensuring that the number of "credits" earned by providing fuels with a lower carbon intensity than the established baseline (or obtained from another party) is equal to or greater than the "deficits" earned from selling higher intensity fuels. In response to certain court rulings, CARB re-adopted the LCFS regulation in September 2015, and the LCFS went into effect on January 1, 2016. In 2018, CARB approved amendments to the regulation to readjust carbon intensity benchmarks to meet California's 2030 GHG reductions targets under SB 32. These amendments include opportunities to promote zero emission vehicle (ZEV) adoption, carbon capture and sequestration, and advanced technologies for decarbonization of the transportation sector.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of ZEVs, into a single package of regulatory standards for vehicle model years 2017 through 2025. The new regulations strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's ZEVs regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the State. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 40 percent fewer GHGs and 75 percent fewer smog-forming emissions than 2012 model year vehicles.

Executive Order B-48-18

In January 2018, Governor Brown signed EO B-48-18 requiring all State entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle charging stations by 2025. It specifies that 10,000 of the electric vehicle charging stations should be direct current fast chargers. This order also requires all State entities to continue to partner with local and regional governments to streamline the installation of ZEV infrastructure. The Governor's Office of Business and Economic Development is required to publish a Plug-in Charging Station Design Guidebook and update the 2015 Hydrogen Station Permitting Guidebook to aid in these efforts. All State entities are required to participate in updating the 2016 Zero-Emissions Vehicle Action Plan to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities. Additionally, all State entities are to support and recommend policies and actions to expand ZEV infrastructure at residential land uses, through the LCFS Program, and recommend how to ensure affordability and accessibility for all drivers.

Regional Regulations

South Coast Air Quality Management District

In 2008, the SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the Basin. The Working Group developed several different options that are contained in the SCAQMD 2008 draft guidance document titled Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans[36] that could be applied by lead agencies. On September 28, 2010, SCAQMD Working Group Meeting No. 15 provided further guidance, including a tiered approach for evaluating GHG emissions for development projects where the SCAQMD is not the lead agency. The SCAQMD has not presented a finalized version of these thresholds to the governing board.

[36] SCAQMD. 2008b. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans.

The SCAQMD identifies the emissions level for which a project would not be expected to substantially conflict with any State legislation adopted to reduce statewide GHG emissions. As such, the utilization of a service population represents the rates of emissions needed to achieve a fair share of the State's mandated emissions reductions. Overall, the SCAQMD identifies a GHG efficiency level that, when applied statewide or to a defined geographic area, would meet the year 2020 and post-2020 emissions targets as required by AB 32 and SB 32. If projects are able to achieve targeted rates of emissions per the service population, the State will be able to accommodate expected population growth and achieve economic development objectives, while also abiding by AB 32's emissions target and future post-2020 targets.

Southern California Association of Governments

On September 3, 2020, SCAG adopted Connect SoCal–The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (2020–2045 RTP/SCS).[37] In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled (VMT) from automobiles and light-duty trucks and thereby reduce GHG emissions from these sources. For the SCAG region, CARB has set GHG reduction targets at 8 percent below 2005 per capita emissions levels by 2020, and 19 percent below 2005 per capita emissions levels by 2035. The RTP/SCS lays out a strategy for the region to meet these targets. Overall, the SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around high-quality transit areas and livable corridors, and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles.[38] However, the SCS does not require that local General Plans, Specific Plans, or zoning be consistent with the SCS; SCAG is required to consider local land use controls when drafting the SCS.

Local Regulations

San Bernardino County Greenhouse Gas Reduction Plan Update

The City of San Bernardino is part of the regional *San Bernardino County Greenhouse Gas Reduction Plan* (GHGRP) adopted in September 2011, which identifies the County's vision and goals on reducing GHG emissions in the different cities, local government facilities, and communities. The regional GHG reduction plan update[39] was adopted in 2021 and will serve as the basis for cities in San Bernardino County to develop more detailed community level climate action plans. The City of San Bernardino was a participant in the San Bernardino County Regional Greenhouse Gas Reduction Plan, which identifies the County's vision and goals on reducing GHG emissions in the different cities, local government facilities, and communities. In response to these initiatives, an informal

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37 Southern California Association of Governments (SCAG). 2020. Connect SoCal: The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments. Website: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176 (accessed May 2023).

38 Ibid.

39 San Bernardino Council of Governments (SBCOG). 2021. San Bernardino County Regional Greenhouse Gas Reduction Plan. Website: https://www.gosbcta.com/wp-content/uploads/2019/09/San_Bernardino_Regional_GHG_Reduction_Plan_Main_Text_Mar_2021.pdf (accessed May 2023).

project partnership, led by the San Bernardino Council of Governments (SBCOG), compiled a GHG emissions inventory and an evaluation of reduction measures that could be adopted by the 25 Partnership Cities of San Bernardino County. The partnership has committed to undertake the following actions that will reduce GHG emissions associated with its regional (or countywide) activities:

- Prepare a baseline (2016) GHG emissions inventory for each of the 25 Partnership Jurisdictions in the County.
- Prepare a future year (2020, 2030, and 2045) GHG emissions forecasts for each of the jurisdictions.
- Develop general GHG reduction measures and jurisdiction-specific measures appropriate for each jurisdiction.
- Develop consistent baseline in information for jurisdictions to use for their development of community climate action plans (CAPs) meeting jurisdiction-identified reduction goals.

SETTING

This section provides the current SCAQMD attainment status, climate and air quality, ambient air quality monitoring results, and GHG emissions inventory.

ATTAINMENT STATUS

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 do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The USEPA designates areas for O_3, CO, and NO_2 as either does not meet the primary standards, or cannot be classified, or better than national standards. For SO_2, areas are designated as does not meet the primary standards, does not meet the secondary standards, cannot be classified, or better than national standards.

Table E provides a summary of the attainment status for the Basin with respect to NAAQS and CAAQS.

Table E: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 1 hour	Nonattainment	Extreme Nonattainment
O_3 8 hour	Nonattainment	Extreme Nonattainment
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Serious Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance
SO_2	N/A	Attainment/Unclassified
Lead	Attainment	Attainment[1]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: South Coast Air Quality Management District (2018).
[1] Except in Los Angeles County.
CO = carbon monoxide
N/A = not applicable
NO_2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SO_2 = sulfur dioxide

EXISTING CLIMATE AND AIR QUALITY

Air quality in the planning area is not only affected by various emission sources (e.g., mobile and industry), but also by atmospheric conditions (e.g., wind speed, wind direction, temperature, and rainfall). The combination of topography, low mixing height, abundant sunshine, and emissions from

the second-largest urban area in the United States gives the South Coast Air Basin some of the worst air pollution in the nation.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s°F. With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station closest to the site is the San Bernardino Station.[40] The monthly average maximum temperature recorded at this station ranged from 66.2°F in January to 96.2°F in July and August, with an annual average maximum of 79.9°F. The monthly average minimum temperature recorded at this station ranged from 38.5°F in January to 59.4°F in August, with an annual average minimum of 48.2°F. These levels are representative of the project area.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. Average monthly rainfall at the San Bernardino station varied from 0.04 inch in July to 3.25 inches in February, with an annual total of 16.12 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in mid-afternoon to late afternoon on hot summer days when the air appears to clear up suddenly. Winter inversions frequently break by midmorning.

Winds in the project area blow predominantly from the south-southwest, with relatively low velocities. Wind speeds in the project area average about 5 miles per hour (mph). Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion, limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, north or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. The Santa Ana conditions tend to last for several days at a time.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly on shore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are CO and NO_X because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and brighter sunshine combine to cause a reaction between hydrocarbons and NO_x to form photochemical smog. Smog is a general term that is naturally occurring fog that has become mixed with smoke or pollution. In this context it is better described as a form of air pollution

[40] Western Regional Climate Center. Recent Climate in the West. Website: http://www.wrcc.dri.edu, (accessed May 2023).

produced by the photochemical reaction of sunlight with pollutants that have been released into the atmosphere, especially by automotive emissions.

AIR QUALITY MONITORING RESULTS

Air quality monitoring stations are located throughout the nation and are maintained by the local air pollution control district and State air quality regulating agencies. The SCAQMD, together with the CARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring stations closest to the project site are located at 24302 4th Street in the City of San Bernardino and 14360 Arrow Boulevard in the City of Fontana.

Pollutant monitoring results for years 2020 to 2022 at the San Bernardino and Fontana ambient air quality monitoring stations, shown in Table F, indicate that air quality in the area has generally been moderate. As indicated in the monitoring results, the federal PM_{10} standard was exceed once in the three-year period. The State PM_{10} standard was exceeded 8 times in 2020, 4 times in 2021, and an unknown number of times in 2022. The $PM_{2.5}$ federal standard had 2 exceedances in 2020, 1 exceedance in 2021, and an unknown number of exceedances in 2022. The 1-hour ozone State standard was exceeded 89 times in 2020, 66 times in 2021, and an unknown number of times in 2022. The 8-hour ozone State standard was exceeded 132 times in 2020, 101 times in 2021, and an unknown number of times in 2022. The 8-hour ozone federal standard was 130 times in 2020, 98 times in 2021, and 96 times in 2022. In addition, the CO, SO_2, and NO_2 standards were not exceeded in this area during the 3-year period.

GREENHOUSE GAS EMISSIONS INVENTORY

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, United States, and California GHG emission inventories.

Global Emissions

Worldwide emissions of GHGs in 2020 totaled 22.9 billion metric tons (MT) of CO_2e. Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change.[41]

[41] United Nations Framework Convention on Climate Change (UNFCCC). 2021. GHG Data from UNFCCC. Website: unfccc.int/process-and-meetings/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc/ghg-data-from-unfccc (accessed May 2023).

Table F: Ambient Air Quality at the Nearest Monitoring Stations

Pollutant	Standard	2020	2021	2022
Carbon Monoxide (CO)[1]				
Maximum 1-hour concentration (ppm)		1.9	2.0	1.7
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		1.4	1.6	1.4
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)[1]				
Maximum 1-hour concentration (ppm)		0.162	0.142	0.128
Number of days exceeded:	State: > 0.09 ppm	89	66	ND
Maximum 8-hour concentration (ppm)		0.129	0.113	0.105
Number of days exceeded:	State: > 0.07 ppm	132	101	ND
	Federal: > 0.07 ppm	130	98	96
Coarse Particulates (PM_{10})[1]				
Maximum 24-hour concentration (µg/m^3)		100.8	71.2	177.0
Number of days exceeded:	State: > 50 µg/m^3	8	4	ND
	Federal: > 150 µg/m^3	1	1	1
Annual arithmetic average concentration (µg/m^3)		ND	31.7	ND
Exceeded for the year:	State: > 20 µg/m^3	ND	Yes	ND
	Federal: > 50 µg/m^3	ND	No	ND
Fine Particulates ($PM_{2.5}$)[1]				
Maximum 24-hour concentration (µg/m^3)		56.6	57.9	40.1
Number of days exceeded:	Federal: > 35 µg/m^3	2	1	ND
Annual arithmetic average concentration (µg/m^3)		ND	11.9	11.3
Exceeded for the year:	State: > 12 µg/m^3	ND	No	No
	Federal: > 15 µg/m^3	ND	No	No
Nitrogen Dioxide (NO_2)[1]				
Maximum 1-hour concentration (ppm)		0.054	0.056	0.053
Number of days exceeded:	State: > 0.250 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.014	0.015	0.016
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)[2]				
Maximum 1-hour concentration (ppm)		0.0025	0.005	0.0027
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Maximum 24-hour concentration (ppm)		0.0009	0.0009	0.0009
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.00041	0.00024	0.00046
Exceeded for the year:	Federal: > 0.030 ppm	No	No	No

Sources: CARB (2021) and USEPA (2022).

1. Data taken from 24302 4th Street, San Bernardino Monitoring Station
2. Data taken from 14360 Arrow Boulevard, Fontana Monitoring Station

µg/m^3 = micrograms per cubic meter
CARB = California Air Resources Board
ND = No data. There were insufficient (or no) data to determine the value.
ppm = parts per million
USEPA = United States Environmental Protection Agency

United States Emissions

In 2020, the year for which the most recent data are available, the United States emitted about 5,222 million metric tons of CO_2e (MMT CO_2e). Overall, emissions in 2020 decreased by 11 percent since 2019 and were 21 percent lower than 2005 levels. The primary driver for the decrease was an 11 percent decrease in CO_2 emissions from fossil fuel combustion. This decrease was primarily due to a 13 percent decrease in transportation emissions driven by decreased demand due to the ongoing COVID-19 pandemic. Electric power sector emissions also decreased 10 percent, reflecting both a slight decrease in demand from the COVID-19 pandemic and a continued shift from coal to less carbon intensive natural gas and renewables. Of the five major sectors – residential and commercial, agricultural, industry, transportation, and electricity generation – transportation accounted for the highest amount of GHG emissions in 2020 (approximately 27 percent), with electricity generation second at 27 percent and emissions from industry third at 24 percent.[42]

State of California Emissions

The State emitted approximately 369.2 MMT CO_2e emissions in 2020, 35.3 MMT CO_2e lower than 2019 levels and 61.8 MMT CO_2e below the 2020 GHG limit of 431 MMT CO_2e.[43] The California Air Resources Board (CARB) estimates that transportation was the source of approximately 37 percent of the State's GHG emissions in 2020, which is a smaller share than recent years, as the transportation sector saw a significant decrease of 26.6 MMT CO_2e in 2020, likely due in large part to the impact of the COVID-19 pandemic. The next largest sources included industrial sources at approximately 20 percent and electricity generation at 16 percent. The remaining sources of GHG emissions were commercial and residential activities at 10 percent, agriculture at 9 percent, high GWP at 6 percent, and waste at 2 percent.[44]

City of San Bernardino Emissions

The City of San Bernardino's goal is to reduce emissions to a level that is 40 percent below that of 2016 GHG emissions level by 2030. Table G summarizes the 2016 inventory, 2030 business as usual (BAU) forecast, and GHG reduction results by sector. Table G also shows the percent reduction in each sector's emissions in 2030 and demonstrates that San Bernardino exceeds its emissions reduction goal, by reducing emissions by 47.4 percent. Emissions sectors with the greatest percent reduction include the on-road transportation, waste, and building energy sectors.

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42 USEPA. 2021. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019. Website: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2019 (accessed May 2023).

43 CARB. 2022a. *California Greenhouse Gas Emissions for 2000 to 2020, Trends of Emissions and Other Indicators Report*. Website: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf (accessed May 2023).

44 Ibid.

Table G: Emissions Inventory and Reductions by Sector

Sector	2016 Emissions (MT CO_2e)	2030 BAU (MT CO_2e)	2030 Reductions (MT CO_2e)	2030 Emissions w/Reduction Plan (MT CO_2e)	Percentage of Reduction
Building Energy	508,547	553,539	351,776	201,763	63.6
On-Road Transportation	779,187	839,757	296,363	543,394	35.3
Off-Road Equipment	27,788	33,744	3,225	30,519	9.6
Waste	110,556	112,732	83,944	28,779	74.5
Agriculture	1,096	617	0	617	0.0
Wastewater Treatment	6,777	6,910	0	6,910	0.0
Water Conveyance	6,573	6,430	1,060	5,369	16.5
GHG Performance Standard*	-	-	-	-	-
Total Emissions	**1,440,525**	**1,553,719**	**736,367**	**817,352**	**47.4**
Reduction Goal	-	-	-	864,315	-
Goal Met?	**-**	**-**	**-**	**Yes**	**-**
Reductions Beyond Goal	-	-	-	46,963	-

Source: San Bernardino County GHGRP (San Bernardino Council of Governments 2021) (accessed May 2023).
Note: Values may not sum due to rounding
*The GHG Performance Standard for New Development is not a sector of the inventory, but it contributes toward the City's reduction goal by promoting reductions in multiple sectors.
BAU = business-as-usual
GHG = greenhouse gas
GHGRP = Greenhouse Gas Reduction Plan
MT CO_2e = metric tons of carbon dioxide equivalent

METHODOLOGY

The methodology used to estimate air quality, health risk, GHG, and energy impacts is described below.

CONSTRUCTION EMISSIONS

Construction activities can generate a substantial amount of air pollution. Construction activities are considered temporary; however, short-term impacts can contribute to exceedances of air quality standards. Construction activities include demolition, site preparation, earthmoving, and general construction. The emissions generated from these common construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel and gasoline powered equipment, portable auxiliary equipment, and worker commute trips.

The California Emissions Estimator Model version 2022.1.1.12 (CalEEMod) computer program was used to calculate emissions from on-site construction equipment and emissions from worker and vehicle trips to the site. As discussed previously in the Project Location and Description section, construction is anticipated to begin in February 2025 and be completed in 8 months, ending in October 2025, which was included in CalEEMod. The proposed project would require the net export of 2,400 cubic yards of soil, which was also included in CalEEMod. In addition, this analysis assumes the use of Tier 4 construction equipment. This analysis also assumes that the proposed project would comply with SCAQMD Rule 403 measures as required by existing regulations. All other construction details are not yet known; therefore, default assumptions (e.g., construction worker and truck trips and fleet activities) from CalEEMod were used.

OPERATIONAL EMISSIONS

The air quality analysis includes estimating emissions associated with long-term operation of the proposed project. Consistent with the SCAQMD guidance for estimating emissions associated with land use development projects, the CalEEMod computer program was used to calculate the long-term operational emissions associated with the project. As discussed in the Project Location and Description section, the proposed project would include the construction of five speculative business park/service commercial buildings with a total combined building area of 81,210 sq ft. The proposed project analysis was conducted using land use codes *Industrial Park* and *Parking Lot*. Trip generation rates used in CalEEMod for the project were based on the project's Traffic Impact Analysis Report[45], which identifies that the proposed project would generate approximately 1,014 average daily trips.

HEALTH RISK ASSESSMENT

For the purposes of a health risk assessment (HRA), emissions are analyzed for acute health impacts, chronic, and carcinogenic health impacts. A multi-pathway assessment has been conducted to evaluate the project's emissions during construction and operation following the modeling

[45] Linscott Law & Greenspan Engineers. 2023. *Hardt and Brier Business Park Project Traffic Impact Analysis Report*. March 28.

techniques recommended in the CalEPA's Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxic Hot Spots Program Risk Assessment Guidelines*.[46] The analysis herein has been conducted in accordance with SCAQMD requirements for HRAs.

The HRA analysis was conducted using three models: (1) EMFAC2021 for on-road vehicle emissions factors and percentages of fuel type within the overall vehicle fleet; (2) the USEPA AERMOD air dispersion model to determine how the TACs would move through the atmosphere after release from sources both on site and on surrounding roadways; and (3) CARB's HARP2 model to translate the pollutant concentrations from AERMOD into individual health risks at any sensitive receptor locations surrounding the project site.

The OEHHA has determined that long-term exposure to diesel exhaust particulates poses the highest cancer risk of any TAC it has evaluated. Exposure to diesel exhaust can also have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, DPM made people with allergies more susceptible to the materials to which they were allergic, such as dust and pollen. Exposure to DPM also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. For risk assessment procedures, the OEHHA specifies that the surrogate for whole diesel exhaust is DPM. The HRA analyses used PM_{10} emissions to represent DPM emissions, consistent with OEHHA guidance.

The conservative nature of this analysis is due primarily to the following three factors:

- The CARB-adopted diesel exhaust unit risk factor (URF) of 300 in 1 million per microgram per cubic meter ($\mu g/m^3$) is based on the upper 95th percentile of estimated risk for each of the epidemiological studies used to develop the URF. Therefore, the risk factor is already representative of the conservative risk posed by DPM.

- The risk estimates assume sensitive receptors would be subject to DPM 24 hours per day, 350 days per year. As a conservative measure, SCAQMD does not recognize indoor adjustments for residents. However, typical people spend the majority of their time indoors versus remaining outdoors 24 hours per day, 350 days per year.

- The exposure to DPM is assumed to be constant for the given period analyzed (i.e., 30 years for the residential receptors and 25 years for the worker receptors). However, emissions from DPM are expected to substantially decrease in the future with the implementation of standard regulatory requirements and technological advancement to reduce DPM.

[46] California Environmental Protection Agency (CalEPA) Office of Environmental Health Hazard Assessment (OEHHA). 2015. *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. March. Website: https://oehha.ca.gov/air/air-toxics-hot-spots (accessed May 2023).

Emission Sources

Construction Health Risk Assessment

A construction HRA, which evaluates construction-period health risk to off-site receptors, was performed for the proposed project. To estimate the potential cancer risk associated with construction of the proposed project from equipment exhaust (including DPM), a dispersion model was used to translate an emission rate from the source location to a concentration at the receptor location of interest (i.e., a nearby residence and worksites). The HRA analyses used PM_{1o} emissions to represent DPM emissions, consistent with OEHHA guidance[47]. Dispersion modeling varies from a simpler, more conservative screening-level analysis to a more complex and refined detailed analysis. This refined assessment was conducted using the CARB exposure methodology with the air dispersion modeling performed using the USEPA dispersion model AERMOD. The model provides a detailed estimate of exhaust concentrations based on site and source geometry, source emissions strength, distance from the source to the receptor, and meteorological data. Meteorological and terrain model inputs are included in the AERMOD input files. In addition, health risk variables are included in the HARP2 model output files.

Operational Health Risk Assessment

To determine the potential health risk to people living and working near the proposed project associated with the exhaust of diesel-powered trucks and equipment, an operational HRA was conducted for the proposed project.

The first step of an HRA is to characterize the project-related emissions of TACs. The proposed project would generate approximately 1,014 average daily trips. For purposes of this analysis, the amount of truck trips based on the default fleet mix in CalEEMod was assumed. The trucks would access Buildings A, B, and C by unsignalized driveways located along Hardt Street. Buildings D1 and D2 would be accessed by unsignalized driveways located in Brier Drive. The proposed project would provide five truck loading stalls; as the project would contain multiple loading stalls, off-site queuing of trucks is not anticipated. While the TAC emissions from gasoline-powered vehicles have a small health effect compared to DPM, this HRA includes both gasoline- and diesel-powered vehicle emissions. For the diesel exhaust emissions, it is sufficient to only consider the DPM (PM_{10} and $PM_{2.5}$) portions of the exhaust; all the TACs for the gasoline exhaust emissions are contained in the ROG emissions. Using speciation data from CARB, the emission rates of the TAC components are derived from the total ROG emissions. These data are attached.

Project trucks would operate in two modes: stationary idling and moving on and off the site. The emissions from trucks while idling result in a much higher concentration of TACs at nearby sensitive receptors compared to the emissions from moving trucks. This is due to the dispersion of emissions that occurs with distance and with travel of the vehicle. For this HRA, the truck travel emissions were modeled as a series of volume sources along the on-site driveways, along Hardt Street and

[47] California Environmental Protection Agency (CalEPA) Office of Environmental Health Hazard Assessment (OEHHA). 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.* March. Website: http://oehha.ca.gov/air/hot_spots/hotspots2015.html (accessed May 2023).

Brier Drive going east and west. LSA assumed vehicles traveling on site would maneuver slowly, averaging approximately 5–15 mph, and that vehicles traveling on roadways would average 5–55 mph.

The idling emissions of trucks operating on the project site were modeled as point sources within the area sources representing the planned loading docks. EMFAC2021 was used to determine the emissions factors of idling and operating diesel trucks to determine the total emissions of DPM. While it is expected that the truck emissions rate will continue to reduce over time, an HRA only allows for a single emission rate to represent the entire 30-year exposure period. The use of emissions factors for the year 2024, was used as a conservative estimate of emissions, although, the project is not expected to be fully operational until 2025.

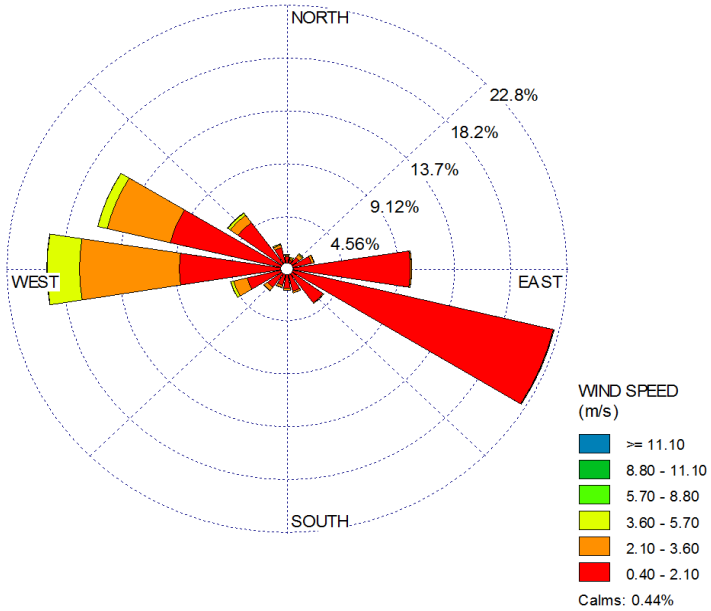
American Meteorological Society/Environmental Protection Agency Regulatory Model Dispersion Modeling

In order to assess the dispersion of emissions associated with the project, air dispersion modeling was performed using AERMOD. The model is approved by the USEPA when estimating the air quality impacts associated with point and fugitive sources in simple and complex terrain. The model was used to calculate the annual average pollutant concentrations associated with each emitting source. Inputs for each emitting source were based on the characterizations described above. Details of these inputs are attached.

For the volume sources used to represent on-road mobile source activity, vertical (sigma z) dispersion parameters were developed as described in the SCAQMD's modeling guidance for trucks. For the truck unloading locations, individual point sources represent the trucks idling at each loading dock. For all the idling sources, the release parameters were set to the SCAQMD default parameters.

The model requires additional input parameters, including local meteorology. Due to the model's sensitivity to individual parameters (e.g., wind speed, temperature, and direction), the USEPA recommends meteorological data used as input into dispersion models be selected on the basis of relative spatial and temporal conditions that exist in the area of concern. As such, 5 years of meteorological data from SCAQMD's Redlands Monitoring Station (the nearest available station) was used to represent local weather conditions and prevailing winds. Figure 3 shows the graphical representation of the wind patterns.

Receptors were placed at the nearest sensitive receptor locations, as shown in Figure 4.



Source: SCAQMD Meteorological Data for AERMOD.

Figure 3: Project Area Wind Patterns

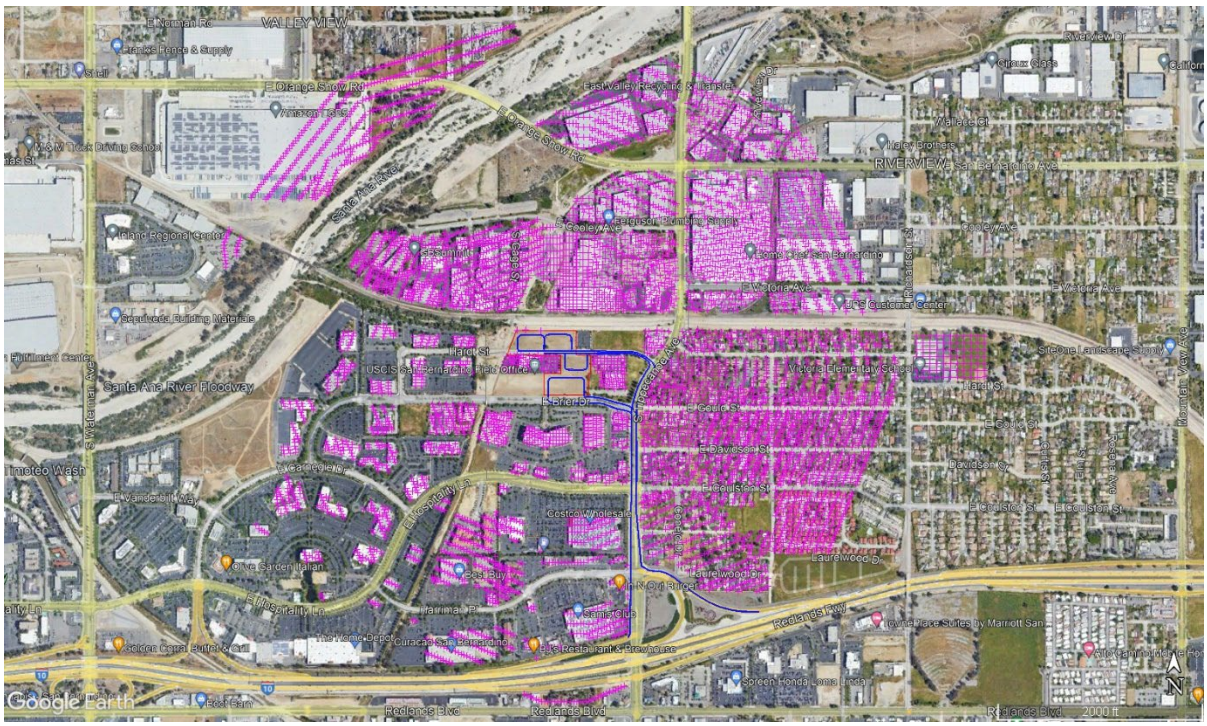


Figure 4: Sensitive Receptor Grid

Hotspots Analysis and Reporting Program Modeling

CARB's HARP2 model is a tool that assists with the programmatic requirements of the Air Toxics "Hot Spots" Program (AB 2588). HARP2 was used to translate the TAC concentrations from AERMOD into long-term carcinogenic and chronic, and short-term acute health risk levels following the guidance in the SCAQMD and OEHHA risk assessment guidelines. These guidelines specify a minimum set of TAC pathways and HARP2 modeling options for the carcinogenic assessment. To estimate chronic noncancer risks at residential receptors, the "RMP-(Risk Management Policy) Derived Method" risk-calculation option was used. Following the OEHHA guidance, an 8-hour chronic noncancer risk was calculated for residential receptors because the project would operate more than 8 hours per day and 5 days per week.

The dose-response relationship for a specific pollutant describes the association between exposure and the observed response (health effect). In other words, the relationship estimates how different levels of exposure to a pollutant change the likelihood and severity of health effects. The dose-response relationship (the response occurring with increasing doses) varies with each pollutant, individual sensitivity, and type of health effect. Combining the results of the emission characterization and dispersion modeling described above with the dose-response assessment gives an estimate of the increased health risk for an individual exposed to the maximum predicted long-term concentrations of TACs.

Discrete variants for daily breathing rates, exposure frequency, and exposure duration were default rates as presented in the OEHHA guidance document entitled *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*[48] and guidance from SCAQMD.

ENERGY USE

The analysis of electricity/natural gas usage is based on the CalEEMod modeling conducted by LSA, which quantifies energy use for project operations. Fuel consumption (diesel fuel and gasoline) from vehicle trips during operation was estimated for the opening year (2025) of the proposed project based on trip estimates from the CalEEMod model and fuel efficiencies from the CARB EMission FACtor Model (EMFAC2021) model. Estimates of fuel consumption (diesel fuel and gasoline) from construction trucks and construction worker vehicles were based on trip estimates from the CalEEMod model and fuel efficiencies from the CARB EMFAC2021 model.

The analysis focuses on the three sources of energy that are relevant to the proposed project: electricity, natural gas, the equipment fuel necessary for project construction, and vehicle fuel necessary for project operations. For the purposes of this analysis, the amount of electricity, construction fuel, and fuel use from operations are quantified and compared to that consumed in San Bernardino County. The electricity use of the proposed project is analyzed as a whole on an annual basis. Electricity use was estimated for the project using default energy intensities by land use type in CalEEMod.

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48 California Environmental Protection Agency (CalEPA) Office of Environmental Health Hazard Assessment (OEHHA). 2015. *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. March. Website: https://oehha.ca.gov/air/air-toxics-hot-spots (accessed May 2023).

GREENHOUSE GAS ANALYSIS

Recognizing that the field of global climate change analysis is rapidly evolving, the approaches advocated most recently indicate that for determining a project's contribution to GHG emissions, lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, construction activities, and any other significant source of emissions within the project area. The CalEEMod results were used to quantify GHG emissions generated by the project.

THRESHOLDS OF SIGNIFICANCE

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse air quality impact if project-generated pollutant emissions would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under applicable federal or State ambient air quality standards;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) affecting a substantial number of people.

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse energy impact if the project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse greenhouse gas emission impact if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reduction the emissions of greenhouse gases.

Certain air districts (e.g., SCAQMD) have created guidelines and requirements to conduct air quality analysis. The SCAQMD's current guidelines, its *CEQA Air Quality Handbook* with associated updates, were followed in this assessment of air quality and GHG impacts for the proposed project.

AIR QUALITY

SCAQMD has established daily emissions thresholds for construction and operation of a proposed project in the Basin. The emissions thresholds were established based on the attainment status of the Basin with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety, these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

Criteria Pollutant Thresholds

Table H lists the CEQA significance thresholds for construction and operational emissions established for the Basin. Projects in the Basin with construction- or operation-related emissions that exceed any of their respective emission thresholds would be considered significant under SCAQMD guidelines. These thresholds, which SCAQMD developed and that apply throughout the Basin, apply as both project and cumulative thresholds. If a project exceeds these standards, it is considered to have a project-specific and cumulative impact.

Table H: Regional Thresholds for Construction and Operational Emissions

Emissions Source	Pollutant Emissions Threshold (lbs/day)					
	VOCs	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_x
Construction	75	100	550	150	55	150
Operations	55	55	550	150	55	150

Source: SCAQMD. Air Quality Significance Thresholds. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf (accessed May 2023).

CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOCs = volatile organic compounds

Health Risk Thresholds

The following limits for maximum individual cancer risk (MICR) and noncancer acute and chronic Hazard Index (HI) from project emissions of TACs are considered appropriate for use in determining the health risk for projects in the Basin:

- **MICR:** MICR is the estimated probability of a maximally exposed individual (MEI) contracting cancer as a result of exposure to TACs over a period of 30 years for adults and 9 years for children in residential locations and over a period of 25 years for workers. The MICR calculations include multipathway consideration, when applicable.

  The cumulative increase in MICR that is the sum of the calculated MICR values for all TACs would be considered significant if it would result in an increased MICR greater than 10 in 1 million (1×10^{-5}) at any receptor location.

- **Chronic HI:** Chronic HI is the ratio of the estimated long-term level of exposure to a TAC for a potential MEI to its chronic reference exposure level. The chronic HI calculations include multipathway consideration, when applicable.

  The project would be considered significant if the cumulative increase in total chronic HI for any target organ system would exceed 1.0 at any receptor location.

- **Acute HI:** Acute HI is the ratio of the estimated maximum 1-hour concentration of a TAC for a potential MEI to its acute reference exposure level.

The project would be considered significant if the cumulative increase in total acute HI for any target organ system would exceed 1.0 at any receptor location.

The SCAQMD's *CEQA Air Quality Handbook*[49] states that emissions of TACs are considered significant if an HRA shows an increased risk of greater than 10 in 1 million. Based on guidance from SCAQMD in the document *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*[50], for the purposes of this analysis, the threshold of 10 in 1 million was used as the cancer risk threshold for the proposed project.

Localized Impacts Analysis

The SCAQMD published its *Final Localized Significance Threshold Methodology* in July 2008, recommending that all air quality analyses include an assessment of air quality impacts to nearby sensitive receptors.[51] This guidance was used to analyze potential localized air quality impacts associated with construction of the proposed project. Localized significance thresholds (LST) are developed based on the size or total area of the emission source, the ambient air quality in the source receptor area, and the distance to the project. Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality.

LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For the proposed project, the appropriate SRA for the LST is the nearby Central San Bernardino Valley (SRA 34). SCAQMD provides LST screening tables for 25-, 50-, 100-, 200-, and 500-meter source-receptor distances. As identified above, the closest sensitive receptor to the project site is the surgery center located south of the project site at approximately 355 feet (109 meters) from the southern project boundary line to the building. Based on the anticipated construction equipment, it is assumed that the maximum daily disturbed acreage for the proposed project would be 3.5 acres.[52] Table I lists the emissions thresholds that apply during project construction and operation.

Table I: South Coast Air Quality Management District Localized Significance Thresholds

Emissions Source	Pollutant Emissions Threshold (lbs/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Construction	331.0	3,800.0	57.0	16.0
Operations	331.0	3,800.0	14.0	4.4

Source: South Coast Air Quality Management District (2008).
CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size

49 SCAQMD. 1993. *CEQA Air Quality Handbook* (currently under revision).
50 SCAQMD. 2003. *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*. August.
51 SCAQMD. 2008a. *Final Localized Significance Threshold Methodology*. July.
52 SCAQMD. n.d. *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf (accessed May 2023).

Local Microscale Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. Because ambient CO levels are below the standards throughout the Basin, a project would be considered to have a significant CO impact if project emissions result in an exceedance of one or more of the 1-hour or 8-hour standards. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20 parts per million (ppm)
- California State 8-hour CO standard of 9 ppm

GREENHOUSE GAS THRESHOLDS

State CEQA Guidelines Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

Appendix G of the *State CEQA Guidelines* includes significance thresholds for GHG emissions. A project would normally have a significant effect on the environment if it would do either of the following:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment

- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs

Currently, there is no statewide GHG emissions threshold that has been used to determine the potential GHG emissions impacts of a project. Threshold methodology and thresholds are still being developed and revised by air districts in California.

San Bernardino is one of the consortia of cities that has adopted San Bernardino County's *Greenhouse Gas Emissions Reduction Plan Update* (County of San Bernardino 2021) in 2021 and GHG Development Review Process (DRP) (County of San Bernardino 2015) in 2016. The DRP procedures need to be followed to evaluate GHG impacts and determine significance for CEQA purposes. All projects need to apply the GHG performance standards identified in the DRP and comply with State requirements. For projects exceeding the review standard of 3,000 MT CO_2e per year, the use of screening tables or a project-specific technical analysis to quantify and mitigate project emissions is required. If the GHG emissions from the project are less than 3,000 MT CO_2e per year and the project would apply GHG performance standards and State requirements, project-level and cumulative GHG emissions would be less than significant.

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For the purpose of this analysis, the proposed project will be compared to the San Bernardino County Review Threshold of 3,000 MT CO_2e/yr. The project is also evaluated for compliance with the 2022 Scoping Plan, and the 2020–2045 RTP/SCS.

IMPACTS ANALYSIS

This section identifies the air quality, energy, and GHG emissions impacts associated with implementation of the proposed project.

AIR QUALITY IMPACTS

Air pollutant emissions associated with the project would occur over the short term from construction activities and over the long term from operational activities associated with the proposed land uses.

Consistency with Applicable Air Quality Plans

A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the air quality plans. A consistency determination fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review due to the air quality plan strategy being based on projections from local General Plans.

The AQMP is based on regional growth projections developed by SCAG. The proposed project would include the construction of five speculative business park/service commercial buildings with a total combined building area of 81,210 sq ft. The proposed project would not house more than 1,000 persons, occupy more than 40 acres of land, or encompass more than 650,000 sq ft of floor area. Thus, the proposed project would not be defined as a regionally significant project under CEQA; therefore, it does not meet SCAG's Intergovernmental Review criteria.

The City's General Plan is consistent with the SCAG Regional Comprehensive Plan Guidelines and the SCAQMD AQMP. Pursuant to the methodology provided in the SCAQMD's *CEQA Air Quality Handbook*, consistency with the Basin 2022 AQMP is affirmed when a project (1) would not increase the frequency or severity of an air quality standards violation or cause a new violation and (2) is consistent with the growth assumptions in the AQMP. Consistency review is presented as follows:

1. The project would result in short-term construction and long-term operational pollutant emissions that are all less than the CEQA significance emissions thresholds established by SCAQMD, as demonstrated below; therefore, the project would not result in an increase in the frequency or severity of an air quality standards violation or cause a new air quality standards violation.

2. The *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects. The proposed project is consistent with the existing land use designation and would not require a change to the General Plan land use designation or the current zoning. Therefore, the proposed project would be consistent with the AQMP growth assumptions. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil

drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities. As mentioned above, proposed project would include five speculative business park/service commercial buildings with a total combined building area of 81,210 sq ft; therefore, the proposed project is not defined as significant.

Based on the consistency analysis presented above, the proposed project would be consistent with the regional AQMP.

Criteria Pollutant Analysis

The Basin is designated as non-attainment for O_3 and $PM_{2.5}$ for federal standards and non-attainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards. The SCAQMD's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of AAQS. 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 would be considered significant.

In developing thresholds of significance for air pollutants, the SCAQMD 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. Therefore, additional analysis to assess cumulative impacts is unnecessary. The following analysis assesses the potential project-level construction- and operation-related air quality impacts.

Construction Emissions

During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by grading, paving, building, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, ROG, directly emitted particulate matter ($PM_{2.5}$ and PM_{10}), and TACs such as diesel exhaust particulate matter.

Project construction activities would include site preparation, grading, building construction, paving, and architectural coating activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The SCAQMD has established Rule 403: Fugitive Dust, which would require the

applicant to implement measures that would reduce the amount of particulate matter generated during the construction period.

In addition to dust related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_x, VOCs and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the project using CalEEMod. Table J lists the tentative project construction schedule based on an 8-month construction duration. Table K lists the potential construction equipment to be used during project construction under each phase of construction. Construction-related emissions are presented in Table L. CalEEMod output sheets are included in Appendix A.

Table J: Tentative Project Construction Schedule

Phase Number	Phase Name	Phase Start Date	Phase End Date	Number of Days/Week	Number of Days
1	Site Preparation	2/3/2025	2/21/2025	5	15
2	Grading	2/24/2025	3/7/2025	5	10
3	Building Construction	3/10/2025	9/5/2025	5	130
4	Paving	9/8/2025	9/19/2025	5	10
5	Architectural Coating	6/23/2025	10/3/2025	5	75

Source: Compiled by LSA assuming construction will start in February 2025 and occur for approximately 8 months (May 2023).

Table K: Diesel Construction Equipment Utilized by Construction Phase

Construction Phase	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	3	8	367	0.4
	Tractors/Loaders/Backhoes	4	8	84	0.37
Grading	Excavators	1	8	36	0.38
	Graders	1	8	148	0.41
	Rubber Tired Dozers	1	8	367	0.4
	Tractors/Loaders/Backhoes	3	8	84	0.37
Building Construction	Cranes	1	7	367	0.29
	Forklifts	3	8	82	0.2
	Generator Sets	1	8	14	0.74
	Tractors/Loaders/Backhoes	3	7	84	0.37
	Welders	1	8	46	0.45
Paving	Pavers	2	8	81	0.42
	Paving Equipment	2	8	89	0.36
	Rollers	2	8	36	0.38
Architectural Coating	Air Compressors	1	6	37	0.48

Source: Compiled by LSA using CalEEMod defaults (May 2023).

CalEEMod = California Emissions Estimator Model

Table L: Project Construction Emissions

Project Construction	Maximum Pollutant Emissions (lbs/day)					
	VOCs	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Site Preparation	0.6	2.7	29.3	<0.1	8.0	4.1
Grading	0.4	4.7	20.1	<0.1	3.6	1.6
Building Construction	0.4	2.6	17.2	<0.1	0.6	0.2
Paving	0.4	2.0	11.7	<0.1	0.2	0.1
Architectural Coating	10.2	0.7	1.4	<0.1	0.1	<0.1
Maximum (lbs/day)	**10.7**	**4.7**	**29.3**	**<0.1**	**8.0**	**4.1**
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Exceeds?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2023).
Note: Some values may not appear to add correctly due to rounding. Maximum emissions of VOCs occurred during the overlapping building construction and architectural coating phases.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOCs = volatile organic compounds

As shown in Table L, construction emissions associated with the project would not exceed the SCAQMD thresholds for ROGs, NO_x, CO, sulfur oxides (SO_X), $PM_{2.5}$, or PM_{10} emissions. In addition to the construction period thresholds of significance, the project is required to comply with regional rules that assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Even though the project's construction would not exceed any of the emissions thresholds as noted in Table L, compliance with Rule 403 dust suppression techniques can further reduce the fugitive dust generation (and thus, the PM_{10} component). With compliance with Rule 403, construction of the proposed project would not result in emissions that would result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under an applicable federal or State ambient air quality standard.

Operational Air Quality Impacts

Long-term air pollutant emission impacts are those typically associated with mobile sources (e.g., vehicle and truck trips), energy sources (e.g., natural gas), and area sources (e.g., architectural coatings and the use of landscape maintenance equipment).

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes.

Gasoline-powered engines have small rates of PM emissions compared with diesel-powered vehicles.

Energy source emissions result from activities in buildings for which natural gas is used. The quantity of emissions is the product of usage intensity (i.e., the amount of natural gas) and the emission factor of the fuel source. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources.

Typically, area source emissions consist of direct sources of air emissions located at the project site, including architectural coatings and the use of landscape maintenance equipment. Stationary source emissions are associated with use of the fire pump.

Long-term operation emissions associated with the proposed project were calculated using CalEEMod. Model results are shown in Table M below. CalEEMod output sheets are included in Appendix A.

Table M: Project Operational Emissions

Emission Type	Pollutant Emissions (lbs/day)					
	VOCs	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Mobile Sources	4.7	6.4	58.1	0.2	5.1	1.0
Area Sources	2.5	<0.1	3.5	<0.1	<0.1	<0.1
Energy Sources	<0.1	0.6	0.5	<0.1	0.1	0.1
Total trip Project Emissions	**7.3**	**7.0**	**62.2**	**0.2**	**5.1**	**1.1**
SCAQMD Thresholds	**55.0**	**55.0**	**550.0**	**150.0**	**150.0**	**55.0**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2023).
Note = Some values may not appear to add correctly due to rounding.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOCs = volatile organic compounds

The results shown in Table M indicate the project would not exceed the significance criteria for VOCs, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ emissions; thus, the proposed project would not have a significant effect on regional air quality. Therefore, operation of the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under an applicable federal or State ambient air quality standard.

Long-Term Microscale (CO Hot Spot) Analysis

Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the project vicinity. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, CO

disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the San Bernardino station, the closest station to the project site, showed a highest recorded 1-hour concentration of 2.0 ppm (the State standard is 20 ppm) and a highest 8-hour concentration of 1.6 ppm (the State standard is 9 ppm) during the past 3 years (Table G). The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis.

As described in the Traffic Impact Analysis Report[53], the proposed project would generate 110 AM peak hour trips and 99 PM peak-hour trips. Given the extremely low level of CO concentrations in the project area, and lack of traffic impacts at any intersections, project-related vehicles are not expected to contribute significantly to result in the CO concentrations exceeding the State or federal CO standards.

Health Risk on Nearby Sensitive Receptors

Sensitive receptors are defined as people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential dwelling units. The closest sensitive receptor to the project site is the surgery center located south of the project site at approximately 355 feet from the southern project boundary line to the building.

The following section describes the potential impacts on sensitive receptors from construction and operation of the proposed project. The HRA analysis and results are presented below; data outputs are included in Appendix B.

Construction Health Risk Assessment

A construction HRA, which evaluates construction-period health risk to off-site receptors, was performed for the proposed project. Table N, below, identifies the results of the analysis assuming the use of Tier 4 construction equipment, as proposed by the project, at the MEI, which is the nearest sensitive receptor. The residential receptor MEI includes the single-family homes located at approximately 585 feet east of the project site across Tippecanoe Avenue, the worker receptor MEI includes the office uses located immediately west of the project site, and the school receptor MEI

[53] Linscott Law & Greenspan Engineers. 2023. *Hardt and Brier Business Park Project Traffic Impact Analysis Report*. March 28.

includes the Victoria Elementary School, located approximately 3,135 feet east of the project site across Richardson Street. Model snap shots of the sources are shown in Appendix B.

Table N: Health Risks from Project Construction to Off-Site Receptors

Location	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index
Residential Receptor Risk	0.38	<0.001	0.000
Worker Receptor Risk	0.07	0.006	0.000
School Receptor Risk	0.07	<0.001	0.000
SCAQMD Significance Threshold	**10.0 in one million**	**1.0**	**1.0**
Significant?	**No**	**No**	**No**

Source: LSA (May 2023).
SCAQMD = South Coast Air Quality Management District

As shown in Table N, the maximum cancer risk for the residential receptor MEI would be 0.38 in one million, which would not exceed the SCAQMD cancer risk threshold of 10 in one million. The worker receptor risk and the school receptor risk would be lower at 0.07 in one million, which would also not exceed the SCAQMD cancer risk thresholds. The total chronic hazard index would be less than 0.001 for the residential and school receptor MEI and 0.006 for the worker receptor MEI, which is below the threshold of 1.0. In addition, the total acute hazard index would be nominal (0.000), which would also not exceed the threshold of 1.0. Therefore, construction of the proposed project would not exceed SCAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations. No significant health risk would occur from project construction emissions.

Operational Health Risk Assessment

To determine the potential health risk to people living and working near the proposed project associated with the exhaust of diesel-powered trucks and equipment, an operational HRA was conducted for the proposed project. The carcinogenic and chronic health risks from the proposed project are shown in Table O. The residential risk incorporates both the risk for a child living in a nearby residence for 9 years (the standard period of time for child risk) and an adult living in a nearby residence for 30 years (considered a conservative period of time for an individual to live in any one residence). As indicated above, the residential receptor MEI includes the single-family homes located at approximately 585 feet east of the project site across Tippecanoe Avenue, the worker receptor MEI includes the office uses located immediately west of the project site, and the school receptor MEI includes the Victoria Elementary School, located approximately 3,135 feet east of the project site across Richardson Street. The HRA model snapshots and outputs are included in Appendix B.

Table O: Health Risks from Project Operation to Off-Site Receptors

Location	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index
Residential Receptor Risk	7.55	0.003	<0.001
Worker Receptor Risk	2.53	0.008	<0.001
School Receptor Risk	0.30	<0.001	<0.001
SCAQMD Significance Threshold	**10.0 in one million**	**1.0**	**1.0**
Significant?	**No**	**No**	**No**

Source: LSA (May 2023).
SCAQMD = South Coast Air Quality Management District

As shown in Table O, the maximum cancer risk for the residential receptor MEI would be 7.55 in one million, less than the threshold of 10 in one million. The worker receptor risk would be 2.53 in one million and the school receptor would be 0.30 in one million, which is less than the threshold of 10 in one million. The total chronic hazard index would be 0.003 for the residential receptor MEI, 0.008 for the worker receptor MEI, and less than 0.001 for the school receptor MEI, which is below the threshold of 1.0. In addition, the total acute hazard index would be less than 0.001, which would also not exceed the threshold of 1.0. As these results show, all health risk levels to nearby residents from operation-related emissions of TACs would be well below the SCAQMD's HRA thresholds. No significant health risk would occur from project operation emissions.

Localized Significance Analysis

Project construction and operation emissions were compared to the LST screening tables in SRA 34, based on a 109-meter source-receptor distance and a disturbed acreage of 3.5 acres.

Table P indicates the on-site construction emissions would not exceed the LSTs for the nearby residences. Therefore, construction of the proposed project would not result in a locally significant air quality impact.

Table P: Project Localized Construction Emissions (lbs/day)

Source	NO_x	CO	PM_{10}	$PM_{2.5}$
On-Site Project Emissions	2.6	28.3	7.8	4.0
Localized Significance Threshold	331.0	3,800.0	57.0	16.0
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2023)
Note: Source Receptor Area 34, based on a 3.5-acre construction disturbance daily area, at a distance of 109 meters from the project boundary.
CO= carbon monoxide
lbs/day = pounds per day
NO_x= nitrogen oxides
$PM_{2.5}$= particulate matter less than 2.5 microns in size
PM_{10}= particulate matter less than 10 microns in size

By design, the localized impacts analysis only includes on-site sources; however, the CalEEMod outputs do not separate on-site and off-site emissions for mobile sources. For a worst-case scenario assessment, the emissions detailed in Table Q assume all area and energy source emissions would

occur on site, and 5 percent of the project-related new mobile sources, which is an estimate of the amount of project-related on-site vehicle and truck travel, would occur on site. Considering the total trip length included in CalEEMod, the 5 percent assumption is conservative. Table R indicates the localized operational emissions would not exceed the LSTs at nearby residences. Therefore, the proposed operational activity would not result in a locally significant air quality impact.

Table Q: Project Localized Operational Emissions (lbs/day)

Source	NO_x	CO	PM_{10}	$PM_{2.5}$
On-Site Project Emissions	1.0	6.9	0.3	0.2
Localized Significance Threshold	331.0	3,800.0	14.0	4.4
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2023)
Note: Source Receptor Area 34, based on a 3.5-acre construction disturbance daily area, at a distance of 109 meters from the project boundary.

CO= carbon monoxide
lbs/day = pounds per day
NO_x= nitrogen oxides
$PM_{2.5}$= particulate matter less than 2.5 microns in size
PM_{10}= particulate matter less than 10 microns in size

The results of the LST analysis, summarized in Tables P and Q, indicate that the project would not result in an exceedance of the SCAQMD LSTs during project construction or operation.

Odors

During project construction, some odors may be present due to diesel exhaust. However, these odors would be temporary and limited to the construction period. The proposed project would not include any activities or operations that would generate objectionable odors and once operational, the project would not be a source of odors. Therefore, the proposed project would not result in other emissions (such as those leading to odors) affecting a substantial number of people.

ENERGY IMPACTS

The following describes the potential impacts regarding energy resources that could result from implementation of the proposed project.

Energy Consumption

The proposed project would increase the demand for energy through day-to-day operations and fuel consumption associated with project construction. This section discusses energy use resulting from implementation of the proposed project and evaluates whether the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with any applicable plans for renewable energy and energy efficiency.

Construction Energy Use

Construction of the proposed project is anticipated to begin in February 2025 and be completed in October 2025. The project would require energy for activities such as the manufacture and

transportation of building materials, grading activities, and building construction. Construction of the proposed project would require electricity to power construction-related equipment. Construction of the proposed project would not involve the consumption of natural gas. The construction-related equipment would not be powered by natural gas, and no natural gas demand is anticipated during construction.

Transportation energy represents the largest energy use during construction and would occur from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction worker vehicles that would use petroleum fuels (e.g., diesel fuel and/or gasoline). Therefore, the analysis of energy use during construction focuses on fuel consumption. Construction trucks and vendor trucks hauling materials to and from the project site would be anticipated to use diesel fuel, whereas construction workers traveling to and from the project site would be anticipated to use gasoline-powered vehicles. Fuel consumption from transportation uses depends on the type and number of trips, VMT, the fuel efficiency of the vehicles, and the travel mode.

Estimates of fuel consumption (diesel fuel and gasoline) from construction equipment, construction trucks, and construction worker vehicles were based on default construction equipment assumptions and trip estimates from CalEEMod and fuel efficiencies from EMFAC2021. Fuel consumption estimates are presented in Table R. CalEEMod output sheets are included in Appendix A, and detailed energy calculations are included in Appendix C.

As indicated in Table R, the project would consume approximately 28,026.8 gallons of diesel fuel and approximately 7,436.5 gallons of gasoline during construction. Based on fuel consumption obtained from EMFAC2021, approximately 907.3 million gallons of gasoline and approximately 325.0 million gallons of diesel will be consumed from vehicle trips in San Bernardino County in 2023. Therefore, construction of the proposed project would increase the annual construction generated fuel use in San Bernardino County by approximately 0.01 percent for diesel fuel usage and by less than 0.01 percent for gasoline fuel usage. As such, project construction would have a negligible effect on local and regional energy supplies. Furthermore, impacts related to energy use during construction would be temporary and relatively small in comparison to San Bernardino County's overall use of the State's available energy resources. No unusual project characteristics would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or the State. In addition, construction activities are not anticipated to result in an inefficient use of energy as gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the project. The project would not cause or result in the need for additional energy facilities or an additional or expanded delivery system. For these reasons, fuel consumption during construction would not be inefficient, wasteful, or unnecessary.

Table R: Proposed Project Energy Consumption Estimates during Construction

Energy Type	Total Energy Consumption	Percentage of Increase Countywide
Diesel Fuel (total gallons)	28,026.8	0.01
Gasoline (total gallons)	7,436.5	<0.01

Source: Compiled by LSA (May 2023).

Operational Energy Use

Operational energy use is typically associated with electricity, natural gas, and fuel used for vehicle trips associated with a project. Energy consumption was estimated for the proposed project using default energy intensities by land use type in CalEEMod.

The proposed project would also result in energy usage associated with gasoline and diesel fuel consumed by project-related vehicle and truck trips. Fuel use associated with vehicle and truck trips generated by the proposed project was calculated based on the project's Traffic Impact Analysis Report [54], which identifies that the proposed project would generate approximately 1,014 average daily trips. The amount of operational fuel use was estimated using CARB's EMFAC2021 model, which provided projections for typical daily fuel usage in San Bernardino County.

Electricity, natural gas, and fuel usage estimates associated with the proposed project are shown in Table S.

Table S: Proposed Project Energy Consumption Estimates during Operation

Energy Type	Annual Energy Consumption
Electricity Consumption (kWh/year)	1,448,176.0
Natural Gas Consumption (therms/year)	22,289.0
Gasoline (gallons/year)	234,688.7
Diesel Fuel (gallons/year)	38,480.3

Source: Compiled by LSA (May 2023).
kWh = kilowatt-hours

As shown in Table S, the estimated electricity demand associated with the operation of the proposed project is 1,448,176 kWh per year. Total electricity consumption in San Bernardino County in 2021 was 16,180.8 GWh (16,180,811,158 kWh). Therefore, operation of the proposed project would increase the annual electricity consumption in San Bernardino County by approximately 0.01 percent.

As shown in Table S, the estimated natural gas demand associated with the operation of the proposed project is 22,289 therms per year. Total natural gas consumption in San Bernardino County in 2021 was 561 million therms (561,360,617 therms). Therefore, operation of the proposed project would increase the annual natural gas consumption in San Bernardino County by less than 0.01 percent.

Electrical demand associated with project operations would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. Furthermore, the proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. The project would be required to adhere to all federal, State, and local requirements for energy efficiency, including the Title 24 standards. Title 24 building energy efficiency standards establish minimum efficiency standards related to various building features,

[54] Linscott Law & Greenspan Engineers. 2023. *Hardt and Brier Business Park Project Traffic Impact Analysis Report*. March 28.

including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting, which would reduce energy usage.

As shown in Table S, fuel use associated with the vehicle trips generated by the proposed project is estimated at 234,688.7 gallons of gasoline and 38,480.3 gallons of diesel fuel per year. This analysis conservatively assumes that all vehicle trips generated as a result of project operation would be new to San Bernardino County. Based on fuel consumption obtained from EMFAC2021, approximately 907.3 million gallons of gasoline and approximately 325.0 million gallons of diesel will be consumed from vehicle trips in San Bernardino County in 2023. Therefore, vehicle and truck trips associated with the proposed project would increase the annual fuel use in San Bernardino County by approximately 0.03 percent for gasoline fuel usage and approximately 0.01 percent for diesel fuel usage. Fuel consumption associated with vehicle trips generated by project operations would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region.

Conflict with Renewable Energy or Energy Efficiency Plans

In 2002, the Legislature passed SB 1389, which required the CEC to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels for the Integrated Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for ZEVs and their infrastructure needs, and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

The CEC's *2021 Integrated Energy Policy Report* and *2022 Integrated Energy Policy Report Update* provide the results of the CEC's assessments of a variety of energy issues facing California. As indicated above, energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the overall use in the County. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the overall use in San Bernardino County, and the State's available energy resources. Therefore, energy impacts at the regional level would be negligible. Because California's energy conservation planning actions are conducted at a regional level, and because the proposed project's total impact on regional energy supplies would be minor, the proposed project would not conflict with or obstruct California's energy conservation plans as described in the CEC's Integrated Energy Policy Report. Additionally, as demonstrated above, the proposed project would not result in the inefficient, wasteful, and unnecessary consumption of energy.

GREENHOUSE GAS IMPACTS

This section describes the potential GHG impacts associated with implementation the proposed project.

Generation of Greenhouse Gas Emissions

This section describes the proposed project's construction- and operational-related GHG emissions and contribution to global climate change. The SCAQMD has not addressed emission thresholds for

construction in its *CEQA Air Quality Handbook*; however, the SCAQMD requires quantification and disclosure. Thus, an evaluation of the project's impacts related to the release of GHG emissions for both construction and operational phases of the project is described below.

Short-Term Greenhouse Gas Emissions

Construction activities associated with the proposed project would produce combustion emissions from various sources. During construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

As indicated above, the SCAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are required to quantify and disclose GHG emissions that would occur during construction. The SCAQMD then requires the construction GHG emissions to be amortized over the life of the project, defined by the SCAQMD as 30 years[55], added to the operational emissions, and compared to the applicable interim GHG significance threshold tier.

Using CalEEMod, it is estimated that the project would generate approximately 271.0 MT CO_2e during construction of the project. When annualized over the 30-year life of the project, annual emissions would be 9.0 MT CO_2e.

Long-Term Greenhouse Gas Emissions

Long-term GHG emissions are typically generated from mobile sources (e.g., vehicle and truck trips), area sources (e.g., maintenance activities and landscaping), indirect emissions from sources associated with energy consumption, waste sources (land filling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). Mobile-source GHG emissions would include project-generated vehicle trips to and from the project. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site. Energy source emissions would be generated at off-site utility providers because of increased electricity demand generated by the project. Waste source emissions generated by the proposed project include energy generated by land filling and other methods of disposal related to transporting and managing project-generated waste. In addition, water source emissions associated with the proposed project are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment.

Following guidance from the SCAQMD, GHG emissions were estimated for the operational year of 2025 using CalEEMod. Table T shows the calculated GHG emissions for the proposed project.

As discussed above, a project would have less than significant GHG emissions if it would result in operational-related GHG emissions of less than 3,000 MT CO_2e/yr. Based on the analysis results, the

[55] The SCAQMD has identified the average operational lifespan of buildings to be 30 years. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf (accessed May 2023).

proposed project would result in approximately 2,979.9 MT CO_2e/yr, which would not exceed the San Bernardino County Review Threshold of 3,000 MT CO_2e/yr. As the project would apply the following San Bernardino County Greenhouse Gas Emissions Reduction Plan Update performance standards and adhere to State requirements, project-level and cumulative GHG emissions would be less than significant. Therefore, operation of the proposed project would not generate significant GHG emissions that would have a significant effect on the environment.

Table T: Greenhouse Gas Emissions

Emissions Source	Operational Emissions (MT/yr)				
	CO_2	CH_4	N_2O	CO_2e	Percentage of Total
Mobile Sources	2,372.0	0.1	0.1	2,411.0	81
Area Sources	1.7	<0.1	<0.1	1.7	<1
Energy Sources	468.0	<0.1	<0.1	469.0	16
Water Sources	38.1	0.6	<0.1	57.8	2
Waste Sources	9.0	0.9	0.0	31.4	1
Total Project Operational Emissions				**2,970.9**	**100**
Amortized Construction Emissions				9.0	-
Total Annual Emissions				**2,979.9**	**-**
Threshold				3,000	-
Exceed?				**No**	**-**

Source: Compiled by LSA (May 2023)
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide
SCAQMD = South Coast Air Quality Management District

Consistency with Greenhouse Gas Emissions Reduction Plans

An evaluation of the proposed project's consistency with the County's Greenhouse Gas Reduction Plan (GHGRP), the 2022 Scoping Plan, and the 2020–2045 RTP/SCS is provided below.

San Bernardino County Regional Greenhouse Gas Reduction Plan

As discussed above, the City of San Bernardino is a participant in the San Bernardino County Regional GHGRP, which identifies the County's vision and goals on reducing GHG emissions in the different cities, local government facilities, and communities. Table U below presents the proposed project's compliance with each reduction measure evaluated for the City of San Bernardino, as identified in the 2021 San Bernardino County Regional GHGRP.

Table U: Project Consistency with City of San Bernardino GHG Reduction Measures

Measure	Description	Project Consistency
Building Energy		
Energy-1. Building Energy Efficiency	• **Conserve scarce energy resources 13.1.1:** Reduce the City's ongoing electricity use by 10% and set an example for residents and businesses to follow. • **Conserve scarce energy resources 13.1.3:** Consider enrollment in the Community Energy Efficiency Program (CEEP), which provides incentives for builders who attain energy savings 30% above the	***Not Applicable.*** This measure is not applicable as the City would be responsible for implementing this measure. However, the proposed project would comply with the CALGreen Code, regarding

Table U: Project Consistency with City of San Bernardino GHG Reduction Measures

Measure	Description	Project Consistency
	National Model Energy Code, the Energy Star Program, which is sponsored by the United States Department of Energy and the Environmental Protection Agency and encourages superior energy efficiency by residents and businesses, or the State's Energy Efficiency and Demand Reduction Program, which offer rebates and incentives to agencies and developers who reduce energy consumption and use energy efficient fixtures and energy-saving design elements. ● **Conserve scarce energy resources 13.1.4:** Require energy audits of existing public structures and encourage audits of private structures, identifying levels of existing energy use and potential conservation measures. ● **Conserve scarce energy resources 13.1.5:** Encourage energy-efficient retrofitting of existing buildings throughout the City. ● **Conserve scarce energy resources 13.1.6:** Consider program that awards incentives to projects that install energy conservation measures, including technical assistance and possible low-interest loans. ● **Conserve scarce energy resources 13.**1.8: Educate the public regarding the need for energy conservation, environmental stewardship, and sustainability techniques and about systems and standards that are currently available for achieving greater energy and resource efficiency, such as the U.S. Green Building Council's LEED standards for buildings.	building energy efficiency and other green building standards
Energy-2. Lighting Efficiency	● **Electricity 9.6.5:** Encourage and promote the use of energy-efficient (U.S. Department of Energy "Energy Star®" or equivalent) lighting fixtures, light bulbs, and compact fluorescent bulbs in residences, commercial, and public buildings, as well as in traffic signals and signs where feasible.	***Consistent.*** The proposed project would comply with the CALGreen Code, regarding energy conservation and green building standards.
Energy-3. All Electric Buildings	● **Conserve scarce energy resources 13.1.5:** Encourage energy-efficient retrofitting of existing buildings throughout the City.	***Not Applicable.*** This measure is not applicable as the proposed project would not retrofit an existing building.
Energy-5. Renewable Energy - New Commercial/Industrial	● **Conserve scarce energy resources 13.1.9:** Encourage increased use of passive and active solar and wind design in existing and new development (e.g., orienting buildings to maximize exposure to cooling effects of prevailing winds, day lighting design, natural ventilation, space planning, thermal massing and locating landscaping and landscape structures to shade buildings).	***Consistent.*** The proposed project would comply with the CALGreen Code, regarding energy conservation and green building standards.
Energy-6. Solar Energy for Warehouse Space	● **Conserve scarce energy resources 13.1.9:** Encourage increased use of passive and active solar	***Consistent.*** The proposed project would comply with the

Table U: Project Consistency with City of San Bernardino GHG Reduction Measures

Measure	Description	Project Consistency
	and wind design in existing and new development (e.g., orienting buildings to maximize exposure to cooling effects of prevailing winds, day lighting design, natural ventilation, space planning, thermal massing and locating landscaping and landscape structures to shade buildings).	CALGreen Code, regarding energy conservation and green building standards.
Energy-7. Solar Installation - Existing Housing	• **Conserve scarce energy resources 13.1.9:** Encourage increased use of passive and active solar and wind design in existing and new development (e.g., orienting buildings to maximize exposure to cooling effects of prevailing winds, day lighting design, natural ventilation, space planning, thermal massing and locating landscaping and landscape structures to shade buildings).	***Not Applicable.*** This measure is not applicable as the proposed project would not retrofit an existing residential building.
Energy-8. Renewable Energy - Existing Commercial/Industrial	• **Conserve scarce energy resources 13.1.9:** Encourage increased use of passive and active solar and wind design in existing and new development (e.g., orienting buildings to maximize exposure to cooling effects of prevailing winds, day lighting design, natural ventilation, space planning, thermal massing and locating landscaping and landscape structures to shade buildings).	***Not Applicable.*** This measure is not applicable as the proposed project would not retrofit an existing building.
Energy-9. Rooftop Gardens	• **Conserve scarce energy resources 13.1.9:** Encourage increased use of passive and active solar and wind design in existing and new development (e.g., orienting buildings to maximize exposure to cooling effects of prevailing winds, day lighting design, natural ventilation, space planning, thermal massing and locating landscaping and landscape structures to shade buildings).	***Not Applicable.*** Rooftop gardens would not be applicable to this project. However, the project would provide approximately 63,147 sq ft of landscaping.
Energy-10. Urban Tree Planting for Shading and Energy Savings	• **Conserve scarce energy resources 13.1.9:** Encourage increased use of passive and active solar and wind design in existing and new development (e.g., orienting buildings to maximize exposure to cooling effects of prevailing winds, day lighting design, natural ventilation, space planning, thermal massing and locating landscaping and landscape structures to shade buildings).	***Consistent.*** The proposed project would include landscaping, which would help with shading.
On-Road		
OnRoad-1. Alternative Fueled Transit Fleets	• **Air Quality 12.6.1 through 12.6.3, 12.6.5, and 12.6.7**	***Not Applicable.*** The proposed project would construct 5 industrial buildings and would not include transit fleet vehicles.
OnRoad-2. Encourage Use of Mass Transit	• **Public Transit 6.6.1, 6.6.2, and 6.6.7 through 6.6.10** • **CI 3.1:** Encourage the reduction of automobile usage through various incentive programs.	***Not Applicable.*** The proposed project would include 5 industrial buildings. Future tenants of the building would implement mass transit encouragement measures as applicable.

Table U: Project Consistency with City of San Bernardino GHG Reduction Measures

Measure	Description	Project Consistency
OnRoad-3. Transportation Demand Management and Signal Synchronization	• **Distinct Character and Identity 2.3.2**: Promote development that is compact, pedestrian-friendly, and served by a variety of transportation options along major corridors and in key activity areas. • **Distinct Character and Identity 2.3.1:** Commercial centers, open spaces, educational facilities, and recreational facilities should be linked to residential neighborhoods. • **GOAL CI 4:** The County will coordinate land use and transportation planning to ensure adequate transportation facilities to support planned land uses and ease congestion. • **Redevelopment and Revitalization 2.4.1** • **Specific Areas 5.5.3 and 5.5.5** • **10. Downtown Strategic Area, Strategies 1,3,7, and 13**	***Not Applicable.*** The proposed project would generate 1,014 daily trips, including 110 AM peak hour trips and 99 PM peak hour trips. Based on the minimal peak hour trips generated by the proposed project, the project would not be required to implement transportation demand management strategies or signal synchronization.
OnRoad-4. Expand Bike Routes	• **District/Neighborhood Design Features 5.3.3:** A well-integrated network of bike and pedestrian paths should connect residential areas to schools, parks, and shopping centers.	***Not Applicable.*** The proposed project would not include residential, school, park, or shopping center uses.
OnRoad-5. Community Fleet Electrification	• **Air Quality 12.6.1 through 12.6.3, 12.6.5, and 12.6.7**	***Not Applicable.*** The proposed project would not involve City fleet vehicles.
Solid Waste Management		
Waste-2. Waste Diversion	• **Solid Waste 9.5.3:** Continue to reduce the amount of solid waste that must be disposed of in area landfills, to conserve energy resources, and be consistent with the County Solid Waste Management Plan and State law. • **Solid Waste 9.5.4 through 9.5.6**	***Consistent.*** The proposed project would be consistent with County Solid Waste and State requirements for waste reduction.

Source: Compiled by LSA (May 2023).

2022 Scoping Plan

The following discussion evaluates the proposed project according to the goals of the 2022 Scoping Plan, EO B-30-15, SB 32, and AB 197.

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,[56] to reflect the 2030 target set by EO B-30-15 and codified by SB 32. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the

[56] CARB. 2017a. *California's 2017 Climate Change Scoping Plan*. November.

adoption of strategies to reduce GHG emissions. Additional direction in AB 197 intended to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

In addition, the 2022 Scoping Plan assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

The 2022 Scoping Plan focuses on building clean energy production and distribution infrastructure for a carbon-neutral future, including transitioning existing energy production and transmission infrastructure to produce zero-carbon electricity and hydrogen, and utilizing biogas resulting from wildfire management or landfill and dairy operations, among other substitutes. The 2022 Scoping Plan states that in almost all sectors, electrification will play an important role. The 2022 Scoping Plan evaluates clean energy and technology options and the transition away from fossil fuels, including adding four times the solar and wind capacity by 2045 and about 1,700 times the amount of current hydrogen supply. As discussed in the 2022 Scoping Plan, EO N-79-20 requires that all new passenger vehicles sold in California will be zero-emission by 2035, and all other fleets will have transitioned to zero-emission as fully possible by 2045, which will reduce the percentage of fossil fuel combustion vehicles.

Energy efficient measures are intended to maximize energy efficiency building and appliance standards, pursue additional efficiency efforts including new technologies and new policy and implementation mechanisms, and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. As discussed above, the proposed project would comply with the CALGreen Code, regarding energy conservation and green building standards. Therefore, the proposed project would comply with applicable energy measures.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, the project would comply with the CALGreen Code, which includes a variety of different measures, including the reduction of wastewater and water use. In addition, the proposed project would be required to comply with the California Model Water Efficient Landscape Ordinance. Therefore, the proposed project would not conflict with any of the water conservation and efficiency measures.

The goal of transportation and motor vehicle measures is to develop regional GHG emissions reduction targets for passenger vehicles. Specific regional emission targets for transportation emissions would not directly apply to the proposed project. The second phase of Pavley standards will reduce GHG emissions from new cars by 34 percent from 2016 levels by 2025, resulting in a 3 percent decrease in average vehicle emissions for all vehicles by 2020. Vehicles traveling to the project site would comply with the Pavley II (LEV III) Advanced Clean Cars Program. Therefore, the proposed project would not conflict with the identified transportation and motor vehicle measures.

2020-2045 Regional Transportation Plan/Sustainable Communities Strategy

SCAG's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) identifies that land use strategies that focus on new housing and job growth in areas served by high quality transit and other opportunity areas would be consistent with a land use development pattern that supports and complements the proposed transportation network. The core vision in the 2020–2045 RTP/SCS is to better manage the existing transportation system through design management strategies, integrate land use decisions and technological advancements, create complete streets that are safe to all roadway users, preserve the transportation system, and expand transit and foster development in transit oriented communities. The 2020–2045 RTP/SCS contains transportation projects to help more efficiently distribute population, housing, and employment growth, as well as forecast development that is generally consistent with regional-level general plan data. The forecasted development pattern, when integrated with the financially constrained transportation investments identified in the 2020–2045 RTP/SCS, would reach the regional target of reducing GHG emissions from autos and light-duty trucks by 19 percent by 2035 (compared to 2005 levels). The 2020–2045 RTP/SCS does not require that local General Plans, Specific Plans, or zoning be consistent with the 2020–2045 RTP/SCS, but provides incentives for consistency for governments and developers.

Implementing SCAG's RTP/SCS will greatly reduce the regional GHG emissions from transportation, helping to achieve statewide emissions reduction targets. The proposed project would not interfere with SCAG's ability to achieve the region's GHG reduction target of 19 percent below 2005 per capita emissions levels by 2035. Furthermore, the proposed project is not regionally significant per *State CEQA Guidelines* Section 15206 and as such, it would not conflict with the SCAG RTP/SCS targets since those targets were established and are applicable on a regional level.

Based on the nature of the proposed project, it is anticipated that implementation of the proposed project would not interfere with SCAG's ability to implement the regional strategies outlined in the RTP/SCS.

CONCLUSIONS

Based on the analysis presented above, construction and operation of the proposed project would not result in the generation of criteria air pollutants that would exceed SCAQMD thresholds of significance. Compliance with SCAQMD Rule 403: Fugitive Dust would further reduce construction dust impacts. The proposed project is not expected to produce significant emissions that would affect nearby sensitive receptors. The project would also not result in other emissions (such as those leading to odors) affecting a substantial number of people. GHG emissions released during construction and operation of the project are estimated to be lower than significance thresholds and would not be cumulatively considerable. The project would also be consistent with the State's GHG emissions reductions objectives embodied in the 2022 Scoping Plan and the 2020–2045 RTP/SCS. Therefore, the proposed project would not result in significant air quality or GHG impacts. In addition, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with any applicable plans for renewable energy and energy efficiency.

APPENDIX A

CALEEMOD OUTPUT SHEETS

Hardt and Brier Commercial Project Detailed Report

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Data Field	Value
Project Name	Hardt and Brier Commercial Project
Construction Start Date	2/3/2025
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	24.0
Location	34.072023721592544, -117.26442340102113
County	San Bernardino-South Coast
City	San Bernardino
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5382
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.12

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Industrial Park	81.2	1000sqft	5.00	81,210	63,147	0.00	—	—
Parking Lot	213	Space	0.81	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.7	3.31	18.7	0.03	0.05	0.65	0.70	0.05	0.16	0.21	3,519	0.16	0.10	3,557
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.2	4.71	29.3	0.05	0.10	7.89	7.99	0.10	3.99	4.09	5,521	0.35	0.37	5,542
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.28	1.39	8.29	0.01	0.03	0.64	0.67	0.03	0.26	0.28	1,622	0.08	0.05	1,639
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.42	0.25	1.51	< 0.005	< 0.005	0.12	0.12	< 0.005	0.05	0.05	269	0.01	0.01	271

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	10.7	3.31	18.7	0.03	0.05	0.65	0.70	0.05	0.16	0.21	3,519	0.16	0.10	3,557
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	10.2	4.71	29.3	0.05	0.10	7.89	7.99	0.10	3.99	4.09	5,521	0.35	0.37	5,542
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.28	1.39	8.29	0.01	0.03	0.64	0.67	0.03	0.26	0.28	1,622	0.08	0.05	1,639
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.42	0.25	1.51	< 0.005	< 0.005	0.12	0.12	< 0.005	0.05	0.05	269	0.01	0.01	271

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.28	6.58	62.2	0.15	0.15	4.99	5.14	0.14	0.89	1.03	18,261	9.92	0.75	18,809
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.39	7.01	47.7	0.14	0.14	4.99	5.13	0.14	0.89	1.03	17,285	9.93	0.77	17,785
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.76	7.16	52.0	0.14	0.15	4.99	5.14	0.14	0.89	1.03	17,445	9.93	0.77	17,969
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.23	1.31	9.50	0.03	0.03	0.91	0.94	0.03	0.16	0.19	2,888	1.64	0.13	2,975

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.72	5.95	58.1	0.15	0.10	4.99	5.09	0.09	0.89	0.98	15,137	0.60	0.64	15,399
Area	2.53	0.03	3.53	< 0.005	< 0.005	—	< 0.005	0.01	—	0.01	14.5	< 0.005	< 0.005	14.6
Energy	0.03	0.60	0.50	< 0.005	0.05	—	0.05	0.05	—	0.05	2,825	0.19	0.02	2,835
Water	—	—	—	—	—	—	—	—	—	—	230	3.70	0.09	349
Waste	—	—	—	—	—	—	—	—	—	—	54.3	5.42	0.00	190
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	21.1
Total	7.28	6.58	62.2	0.15	0.15	4.99	5.14	0.14	0.89	1.03	18,261	9.92	0.75	18,809
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.40	6.41	47.2	0.14	0.10	4.99	5.09	0.09	0.89	0.98	14,176	0.61	0.66	14,390
Area	1.95	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.03	0.60	0.50	< 0.005	0.05	—	0.05	0.05	—	0.05	2,825	0.19	0.02	2,835
Water	—	—	—	—	—	—	—	—	—	—	230	3.70	0.09	349
Waste	—	—	—	—	—	—	—	—	—	—	54.3	5.42	0.00	190
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	21.1
Total	6.39	7.01	47.7	0.14	0.14	4.99	5.13	0.14	0.89	1.03	17,285	9.93	0.77	17,785
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.38	6.54	49.1	0.14	0.10	4.99	5.09	0.09	0.89	0.98	14,325	0.61	0.67	14,564
Area	2.35	0.02	2.42	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.95	< 0.005	< 0.005	9.98
Energy	0.03	0.60	0.50	< 0.005	0.05	—	0.05	0.05	—	0.05	2,825	0.19	0.02	2,835
Water	—	—	—	—	—	—	—	—	—	—	230	3.70	0.09	349

Waste	—	—	—	—	—	—	—	—	—	—	54.3	5.42	0.00	190
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	21.1
Total	6.76	7.16	52.0	0.14	0.15	4.99	5.14	0.14	0.89	1.03	17,445	9.93	0.77	17,969
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.80	1.19	8.96	0.03	0.02	0.91	0.93	0.02	0.16	0.18	2,372	0.10	0.11	2,411
Area	0.43	< 0.005	0.44	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.65	< 0.005	< 0.005	1.65
Energy	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	468	0.03	< 0.005	469
Water	—	—	—	—	—	—	—	—	—	—	38.1	0.61	0.01	57.8
Waste	—	—	—	—	—	—	—	—	—	—	8.99	0.90	0.00	31.4
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	3.50
Total	1.23	1.31	9.50	0.03	0.03	0.91	0.94	0.03	0.16	0.19	2,888	1.64	0.13	2,975

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	2.59	28.3	0.05	0.10	—	0.10	0.10	—	0.10	5,295	0.21	0.04	5,314
Dust From Material Movement	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.11	1.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	218	0.01	< 0.005	218
Dust From Material Movement	—	—	—	—	—	0.32	0.32	—	0.16	0.16	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	36.0	< 0.005	< 0.005	36.2
Dust From Material Movement	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	1.03	0.00	0.00	0.23	0.23	0.00	0.05	0.05	226	0.01	0.01	229
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	9.42	< 0.005	< 0.005	9.56
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.56	< 0.005	< 0.005	1.58

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.04	17.8	0.03	0.06	—	0.06	0.06	—	0.06	2,959	0.12	0.02	2,970
Dust From Material Movement	—	—	—	—	—	2.77	2.77	—	1.34	1.34	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.49	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	81.1	< 0.005	< 0.005	81.4
Dust From Material Movement	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	13.4	< 0.005	< 0.005	13.5

Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.88	0.00	0.00	0.20	0.20	0.00	0.05	0.05	194	0.01	0.01	196
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	2.60	1.41	0.01	0.03	0.56	0.58	0.03	0.15	0.18	2,075	0.22	0.34	2,182
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.38	< 0.005	< 0.005	5.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.07	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	56.8	0.01	0.01	59.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.89	< 0.005	< 0.005	0.90
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.41	< 0.005	< 0.005	9.90

3.5. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.72	5.09	0.01	0.02	—	0.02	0.02	—	0.02	854	0.03	0.01	857
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.13	0.93	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	141	0.01	< 0.005	142
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	2.66	0.00	0.00	0.45	0.45	0.00	0.10	0.10	481	0.02	0.02	488
Vendor	0.01	0.46	0.25	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	411	0.03	0.06	431
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.17	2.00	0.00	0.00	0.45	0.45	0.00	0.10	0.10	441	0.02	0.02	446

Vendor	0.01	0.48	0.25	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	411	0.03	0.06	430
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.06	0.75	0.00	0.00	0.16	0.16	0.00	0.04	0.04	159	0.01	0.01	161
Vendor	< 0.005	0.17	0.09	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	146	0.01	0.02	153
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	26.4	< 0.005	< 0.005	26.7
Vendor	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	24.2	< 0.005	< 0.005	25.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.93	10.6	0.01	0.03	—	0.03	0.03	—	0.03	1,511	0.06	0.01	1,517
Paving	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.05	0.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	41.4	< 0.005	< 0.005	41.6

Paving	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.86	< 0.005	< 0.005	6.88
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	1.17	0.00	0.00	0.20	0.20	0.00	0.05	0.05	211	0.01	0.01	215
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.38	< 0.005	< 0.005	5.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.89	< 0.005	< 0.005	0.90
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.65	0.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	134	0.01	< 0.005	134
Architectural Coatings	10.2	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.65	0.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	134	0.01	< 0.005	134
Architectural Coatings	10.2	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.13	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	27.4	< 0.005	< 0.005	27.5
Architectural Coatings	2.09	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.54	< 0.005	< 0.005	4.56
Architectural Coatings	0.38	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.53	0.00	0.00	0.09	0.09	0.00	0.02	0.02	96.1	< 0.005	< 0.005	97.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.40	0.00	0.00	0.09	0.09	0.00	0.02	0.02	88.1	< 0.005	< 0.005	89.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	18.4	< 0.005	< 0.005	18.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.04	< 0.005	< 0.005	3.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	4.72	5.95	58.1	0.15	0.10	4.99	5.09	0.09	0.89	0.98	15,137	0.60	0.64	15,399
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	4.72	5.95	58.1	0.15	0.10	4.99	5.09	0.09	0.89	0.98	15,137	0.60	0.64	15,399
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	4.40	6.41	47.2	0.14	0.10	4.99	5.09	0.09	0.89	0.98	14,176	0.61	0.66	14,390
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	4.40	6.41	47.2	0.14	0.10	4.99	5.09	0.09	0.89	0.98	14,176	0.61	0.66	14,390
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.80	1.19	8.96	0.03	0.02	0.91	0.93	0.02	0.16	0.18	2,372	0.10	0.11	2,411
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.80	1.19	8.96	0.03	0.02	0.91	0.93	0.02	0.16	0.18	2,372	0.10	0.11	2,411

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Industrial Park	—	—	—	—	—	—	—	—	—	—	2,066	0.13	0.02	2,073
Parking Lot	—	—	—	—	—	—	—	—	—	—	45.0	< 0.005	< 0.005	45.2
Total	—	—	—	—	—	—	—	—	—	—	2,111	0.13	0.02	2,119
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	2,066	0.13	0.02	2,073
Parking Lot	—	—	—	—	—	—	—	—	—	—	45.0	< 0.005	< 0.005	45.2
Total	—	—	—	—	—	—	—	—	—	—	2,111	0.13	0.02	2,119
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	342	0.02	< 0.005	343
Parking Lot	—	—	—	—	—	—	—	—	—	—	7.46	< 0.005	< 0.005	7.49
Total	—	—	—	—	—	—	—	—	—	—	349	0.02	< 0.005	351

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.03	0.60	0.50	< 0.005	0.05	—	0.05	0.05	—	0.05	714	0.06	< 0.005	716
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	0.03	0.60	0.50	< 0.005	0.05	—	0.05	0.05	—	0.05	714	0.06	< 0.005	716
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Industrial Park	0.03	0.60	0.50	< 0.005	0.05	—	0.05	0.05	—	0.05	714	0.06	< 0.005	716
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	0.03	0.60	0.50	< 0.005	0.05	—	0.05	0.05	—	0.05	714	0.06	< 0.005	716
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	118	0.01	< 0.005	119
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	118	0.01	< 0.005	119

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.74	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.58	0.03	3.53	< 0.005	< 0.005	—	< 0.005	0.01	—	0.01	14.5	< 0.005	< 0.005	14.6
Total	2.53	0.03	3.53	< 0.005	< 0.005	—	< 0.005	0.01	—	0.01	14.5	< 0.005	< 0.005	14.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.74	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.95	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.07	< 0.005	0.44	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.65	< 0.005	< 0.005	1.65
Total	0.43	< 0.005	0.44	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.65	< 0.005	< 0.005	1.65

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	230	3.70	0.09	349
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	230	3.70	0.09	349
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	230	3.70	0.09	349
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	230	3.70	0.09	349

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	38.1	0.61	0.01	57.8
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	38.1	0.61	0.01	57.8

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	54.3	5.42	0.00	190
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	54.3	5.42	0.00	190
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	54.3	5.42	0.00	190
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	54.3	5.42	0.00	190
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	8.99	0.90	0.00	31.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	8.99	0.90	0.00	31.4

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	21.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	21.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	21.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	21.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	3.50
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	3.50

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestere	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestere d	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	2/3/2025	2/21/2025	5.00	15.0	—
Grading	Grading	2/24/2025	3/7/2025	5.00	10.0	—
Building Construction	Building Construction	3/10/2025	9/5/2025	5.00	130	—
Paving	Paving	9/8/2025	9/19/2025	5.00	10.0	—
Architectural Coating	Architectural Coating	6/23/2025	10/3/2025	5.00	75.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 4 Final	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Final	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 4 Final	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Final	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Final	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT

Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	30.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	34.1	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	13.3	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	6.82	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction

Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	121,815	40,605	2,117

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	45.0	0.00	—
Grading	0.00	2,400	20.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.81

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Industrial Park	0.00	0%
Parking Lot	0.81	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Industrial Park	1,014	1,014	1,014	369,928	17,901	17,901	17,901	6,533,900
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	121,815	40,605	2,117

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Industrial Park	1,417,268	532	0.0330	0.0040	2,228,404
Parking Lot	30,908	532	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Industrial Park	18,779,813	1,014,085
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Industrial Park	101	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.1	annual days of extreme heat
Extreme Precipitation	4.10	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	100
AQ-PM	59.6
AQ-DPM	87.9
Drinking Water	69.0
Lead Risk Housing	84.4
Pesticides	26.5
Toxic Releases	46.2
Traffic	80.1
Effect Indicators	—
CleanUp Sites	83.0
Groundwater	10.6
Haz Waste Facilities/Generators	94.6
Impaired Water Bodies	12.5
Solid Waste	75.9

Sensitive Population	—
Asthma	46.9
Cardio-vascular	61.4
Low Birth Weights	64.5
Socioeconomic Factor Indicators	—
Education	75.0
Housing	43.3
Linguistic	76.1
Poverty	87.9
Unemployment	78.3

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	5.646092647
Employed	4.837674836
Median HI	17.46439112
Education	—
Bachelor's or higher	24.17554215
High school enrollment	17.31040678
Preschool enrollment	35.14692673
Transportation	—
Auto Access	59.70742974
Active commuting	57.62864109
Social	—
2-parent households	49.12100603

Voting	9.867830104
Neighborhood	—
Alcohol availability	54.40780187
Park access	15.0904658
Retail density	76.40189914
Supermarket access	2.399589375
Tree canopy	7.35275247
Housing	—
Homeownership	37.32837162
Housing habitability	24.47067881
Low-inc homeowner severe housing cost burden	35.91684845
Low-inc renter severe housing cost burden	43.66739381
Uncrowded housing	5.889901193
Health Outcomes	—
Insured adults	8.494803028
Arthritis	51.7
Asthma ER Admissions	30.3
High Blood Pressure	62.1
Cancer (excluding skin)	57.8
Asthma	32.2
Coronary Heart Disease	34.0
Chronic Obstructive Pulmonary Disease	12.3
Diagnosed Diabetes	51.3
Life Expectancy at Birth	15.4
Cognitively Disabled	11.9
Physically Disabled	30.9
Heart Attack ER Admissions	35.2

Mental Health Not Good	20.5
Chronic Kidney Disease	64.9
Obesity	43.5
Pedestrian Injuries	61.9
Physical Health Not Good	21.1
Stroke	22.5
Health Risk Behaviors	—
Binge Drinking	82.5
Current Smoker	9.0
No Leisure Time for Physical Activity	15.3
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	44.4
Elderly	64.0
English Speaking	43.5
Foreign-born	69.8
Outdoor Workers	24.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	74.0
Traffic Density	77.1
Traffic Access	23.0
Other Indices	—
Hardship	89.8
Other Decision Support	—
2016 Voting	13.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	91.0
Healthy Places Index Score for Project Location (b)	6.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

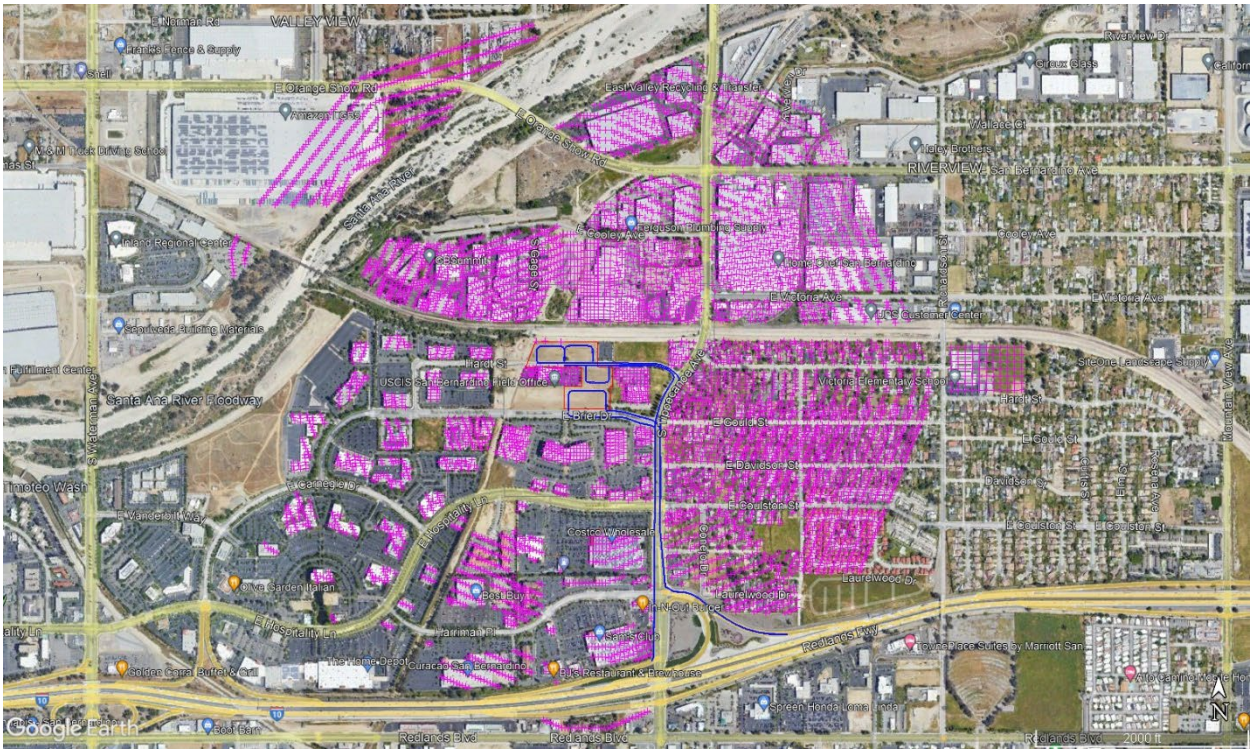
Screen	Justification
Land Use	Project site is 5.81 acres and will consist of a commercial park of approximately 81,210 sf
Construction: Construction Phases	Construction is anticipated to start in February 2025 and last for approximately 8 months, ending in October 2025. Overlap between architectural coating and building construction phases.
Construction: Off-Road Equipment	Default equipment with Tier 4 Final engine
Operations: Vehicle Data	Based on a trip generation of 1,014 ADT
Construction: Dust From Material Movement	proposed project would have a net cut of 2,400 CY of soil

APPENDIX B

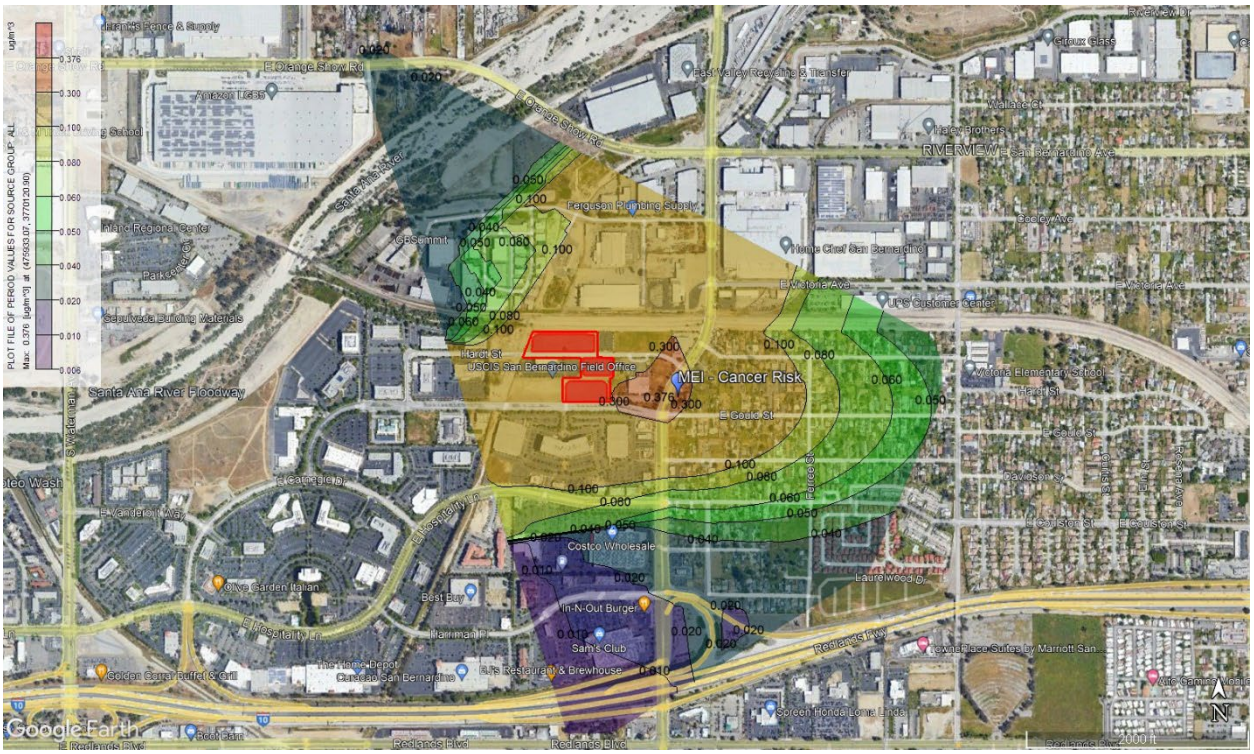
HRA MODEL SNAPSHOTS AND OUTPUTS

Project Location

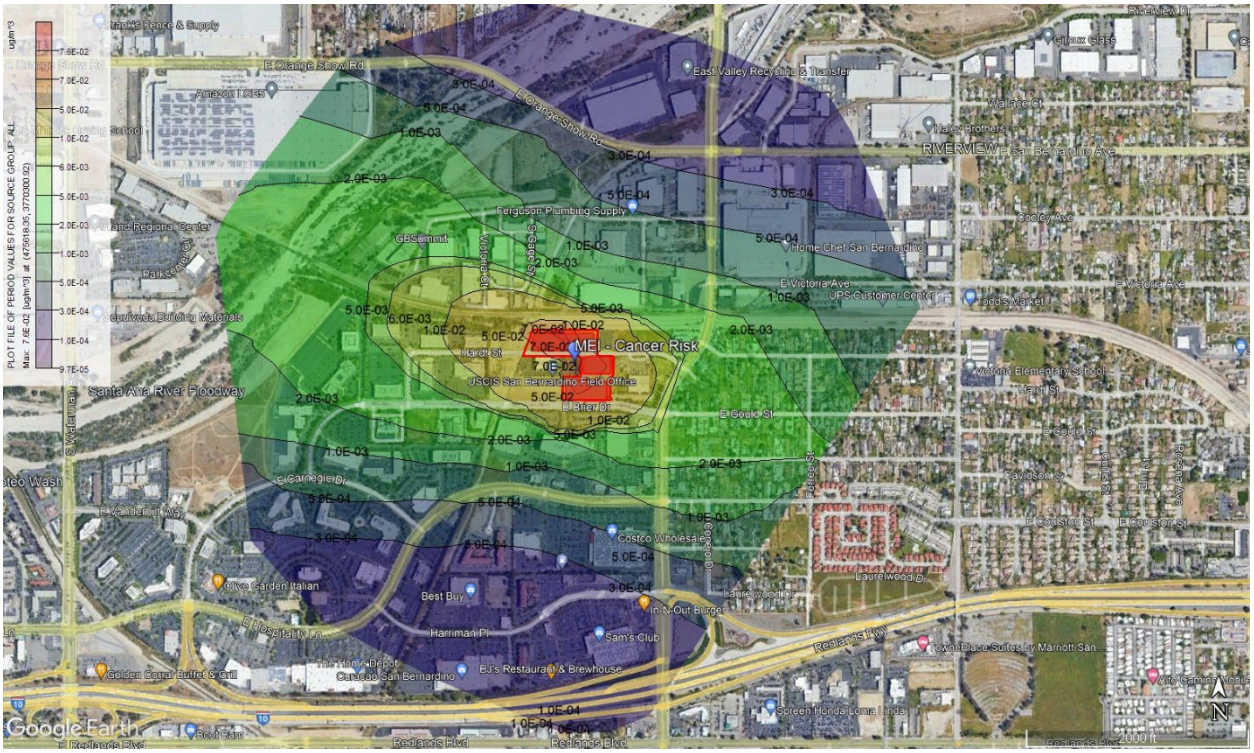
Receptor Grid



Sensitive Receptor Construction Cancer Risk

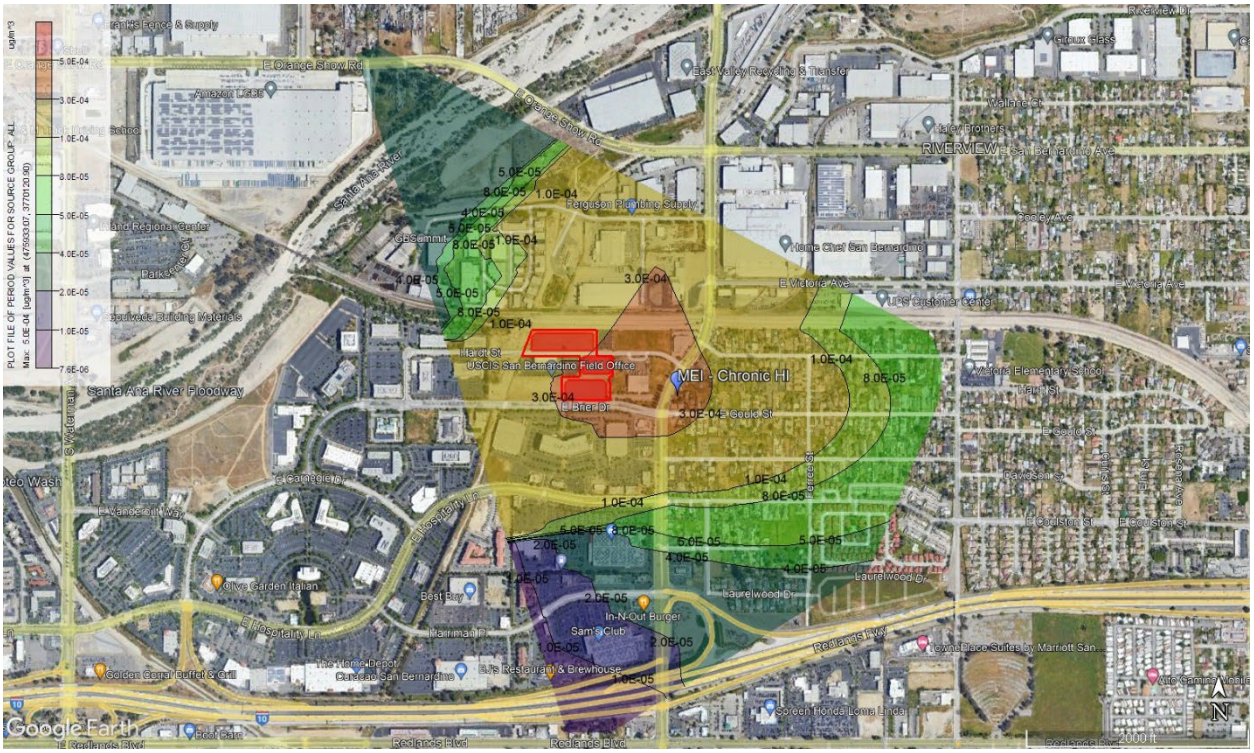


Worker Receptor Construction Cancer Risk

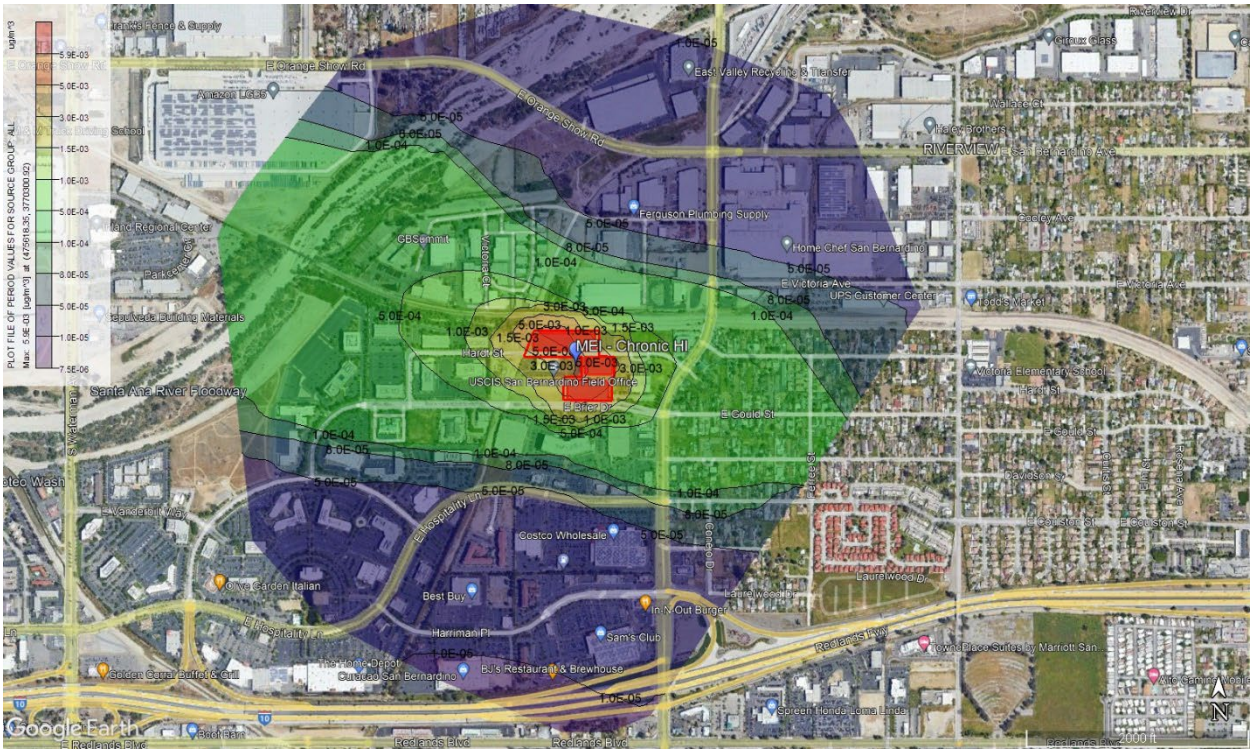


School Receptor Construction Cancer Risk

Sensitive Receptor Construction Chronic Hazard Index

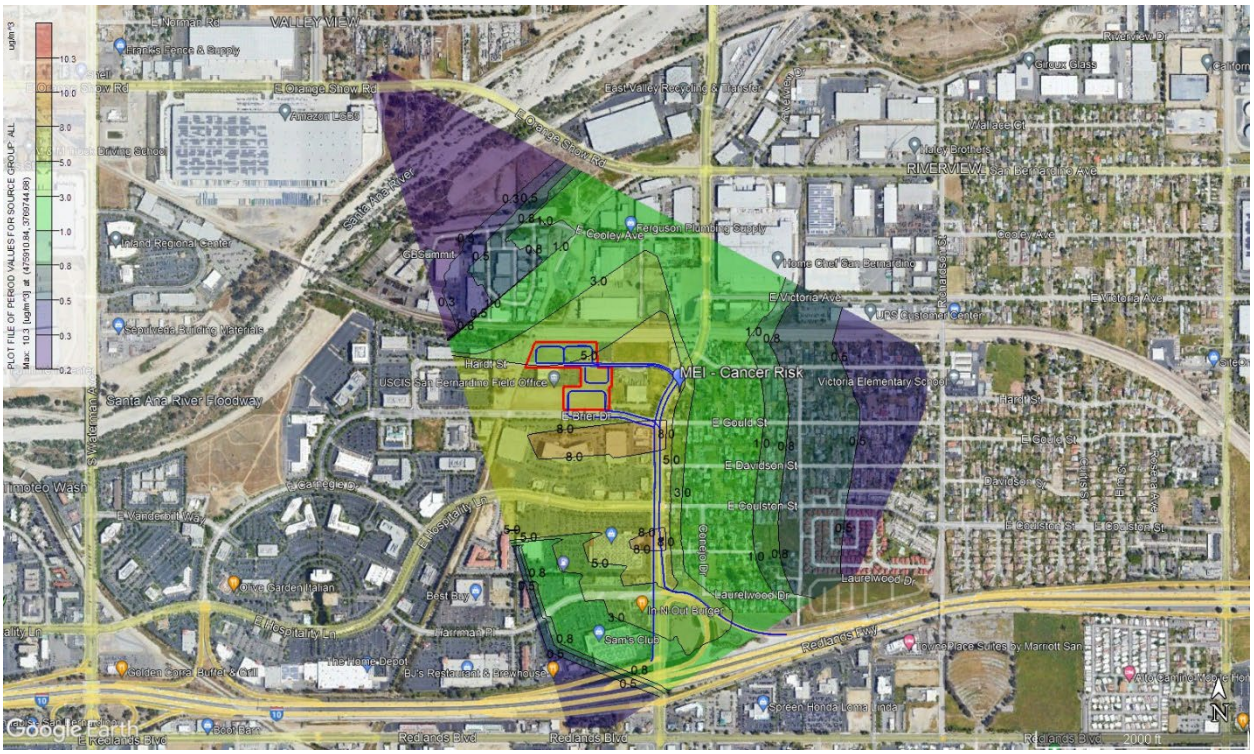


Worker Receptor Construction Chronic Hazard Index

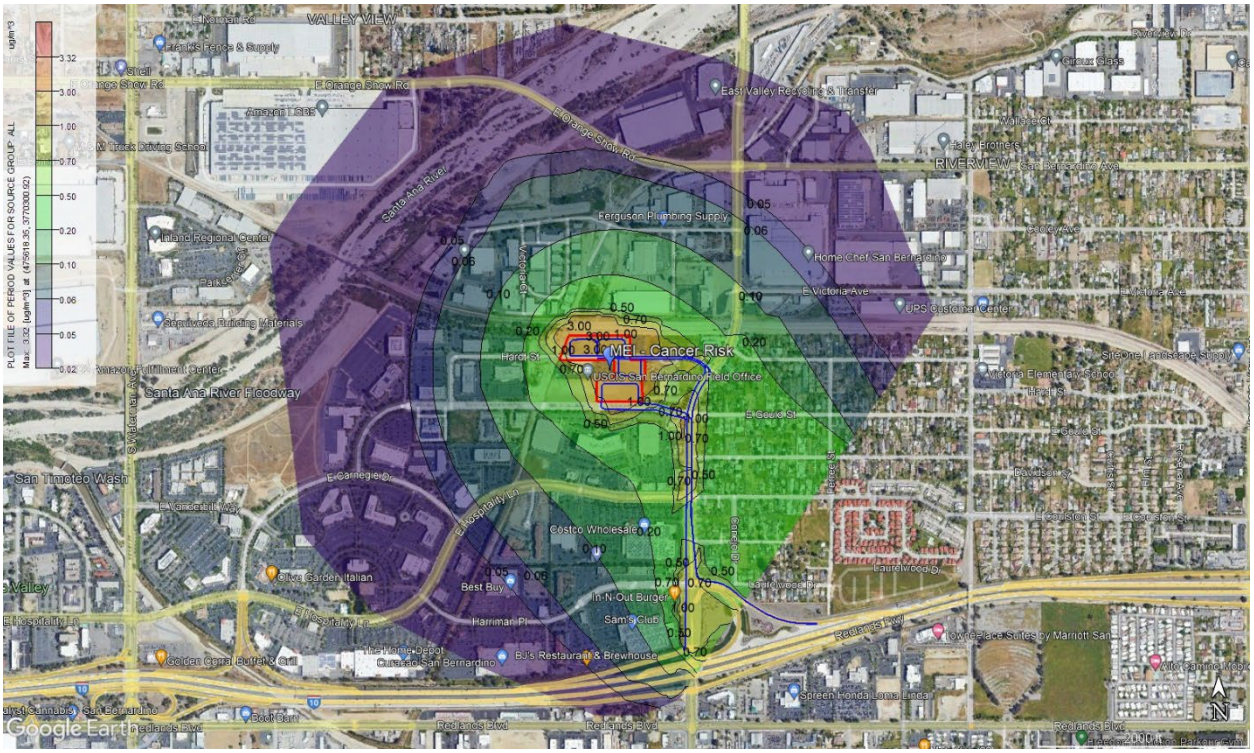


School Receptor Construction Chronic Hazard Index

Sensitive Receptor Operational Cancer Risk

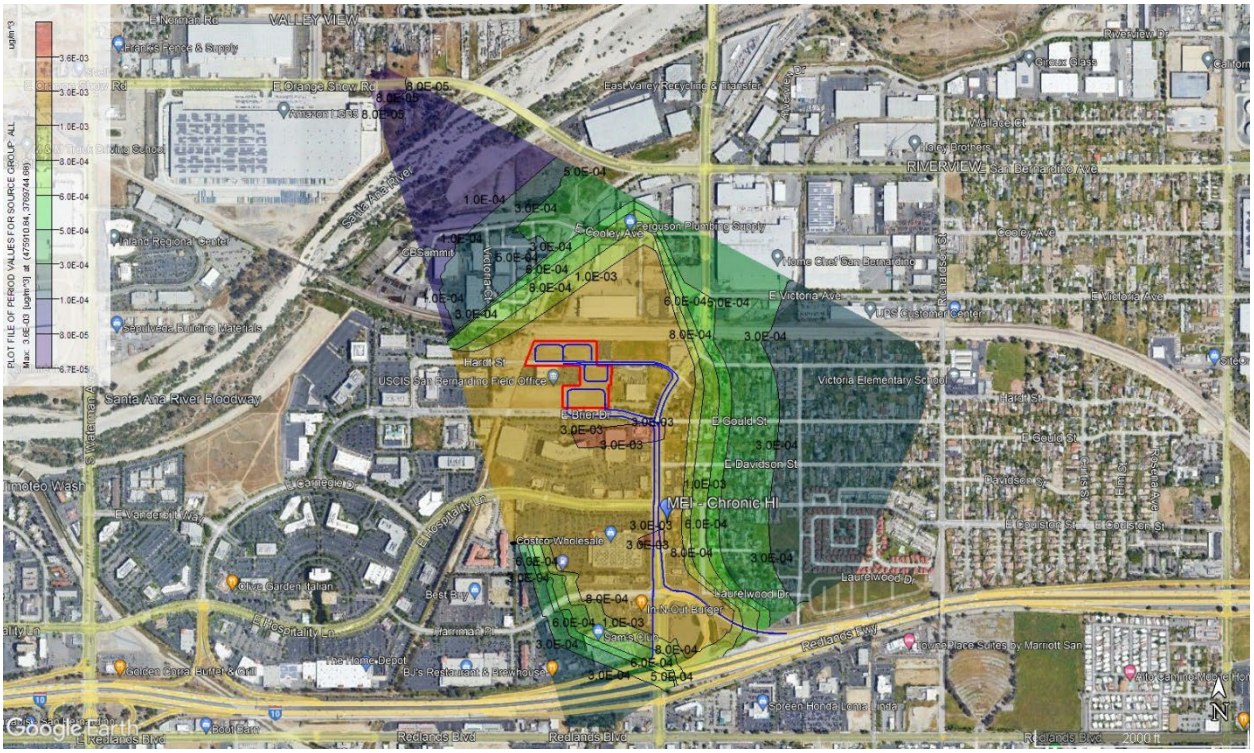


Worker Receptor Operational Cancer Risk

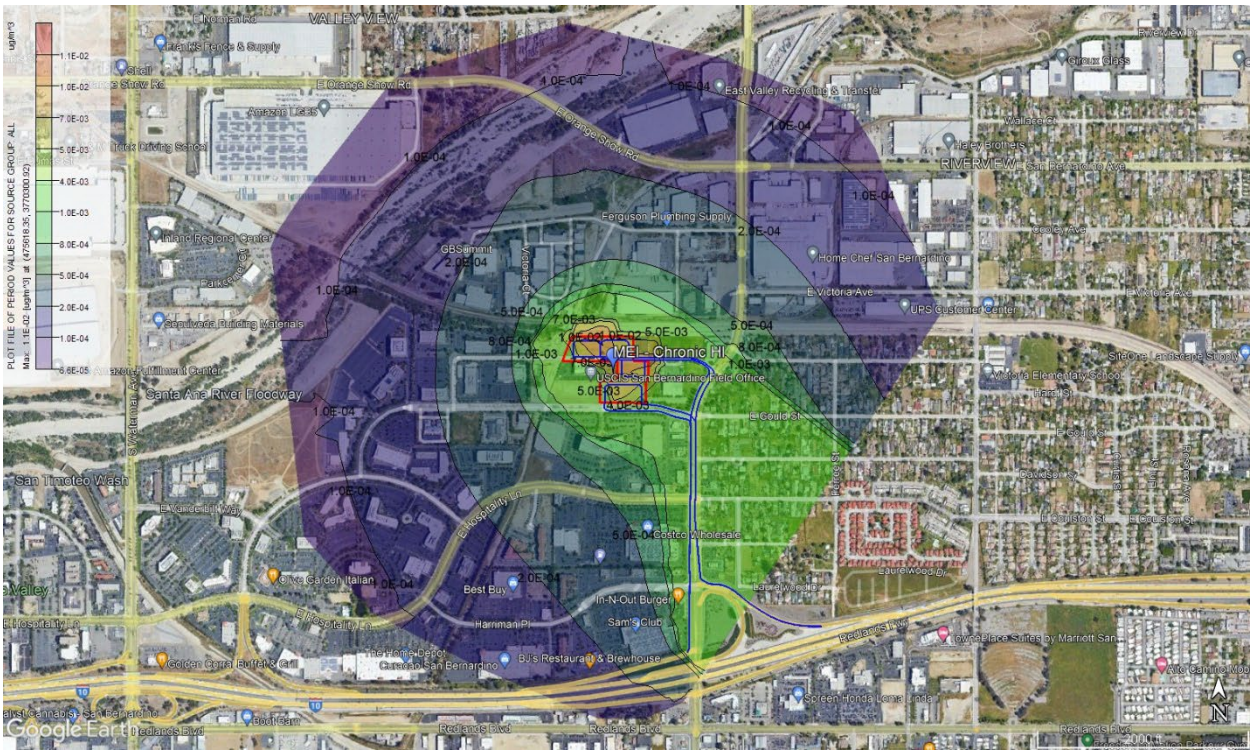


School Receptor Operational Cancer Risk

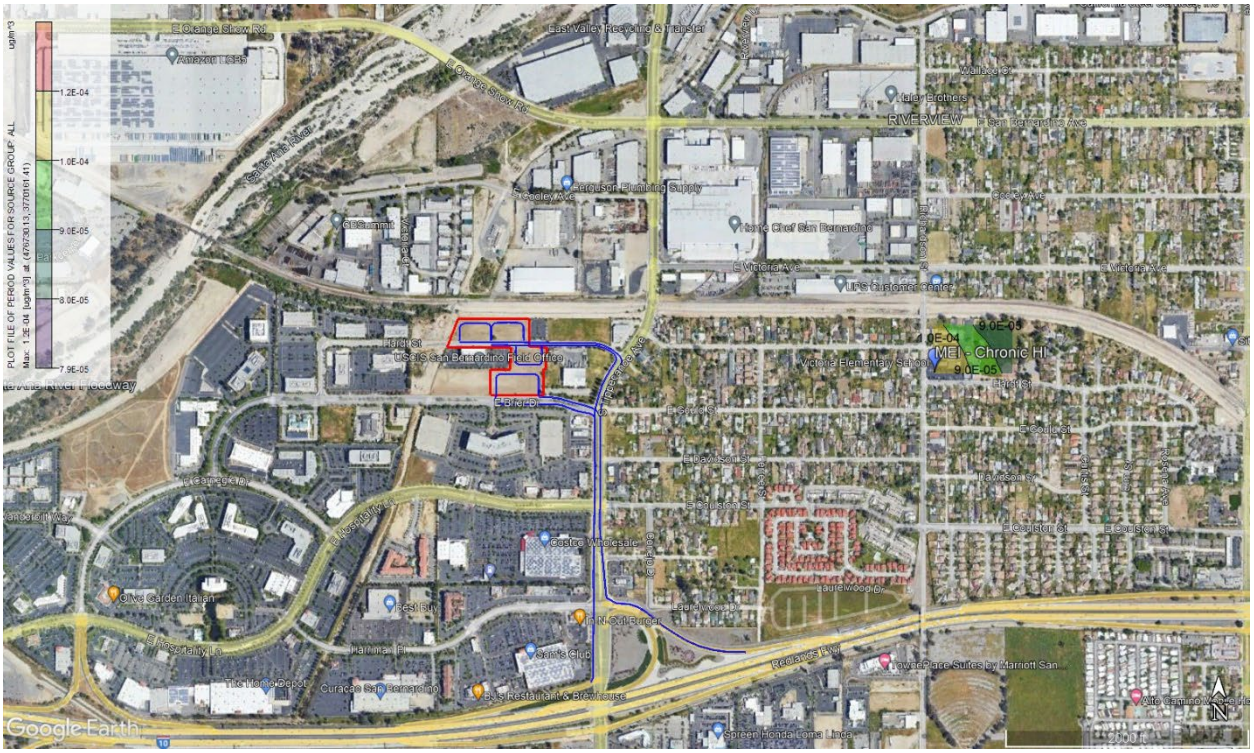
Sensitive Receptor Operational Chronic Hazard Index



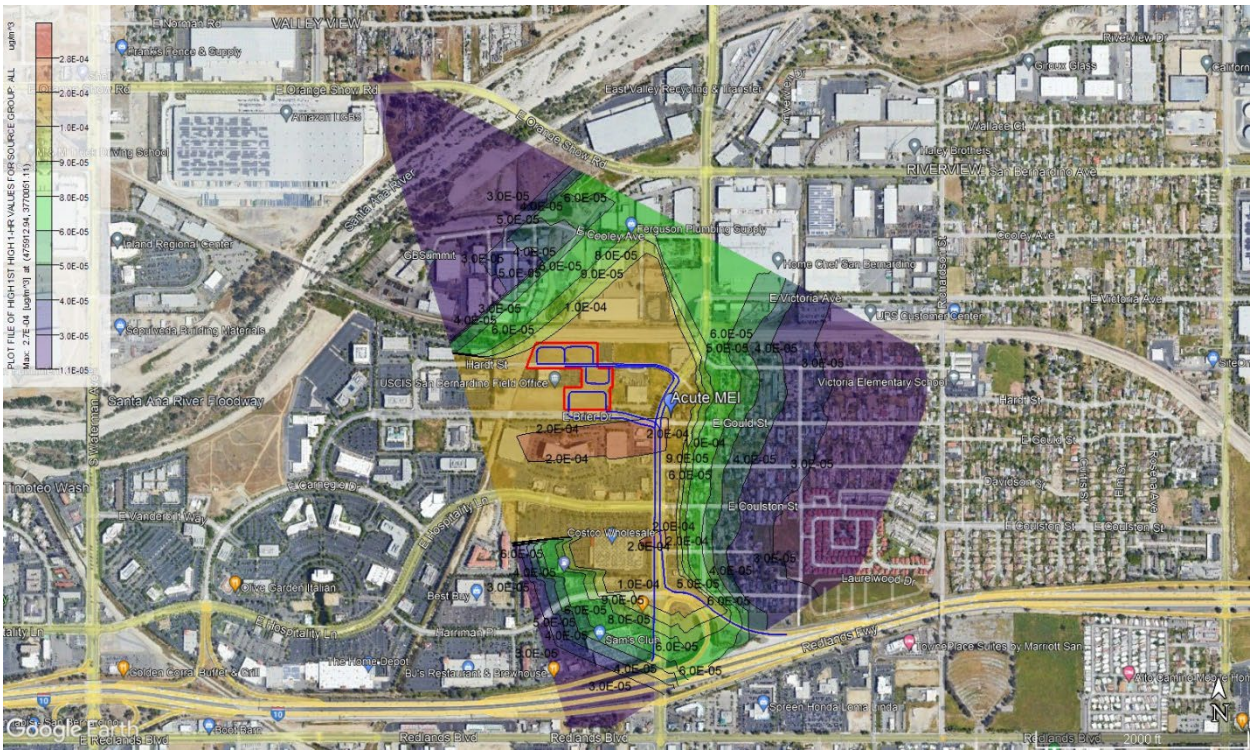
Worker Receptor Operational Chronic Hazard Index



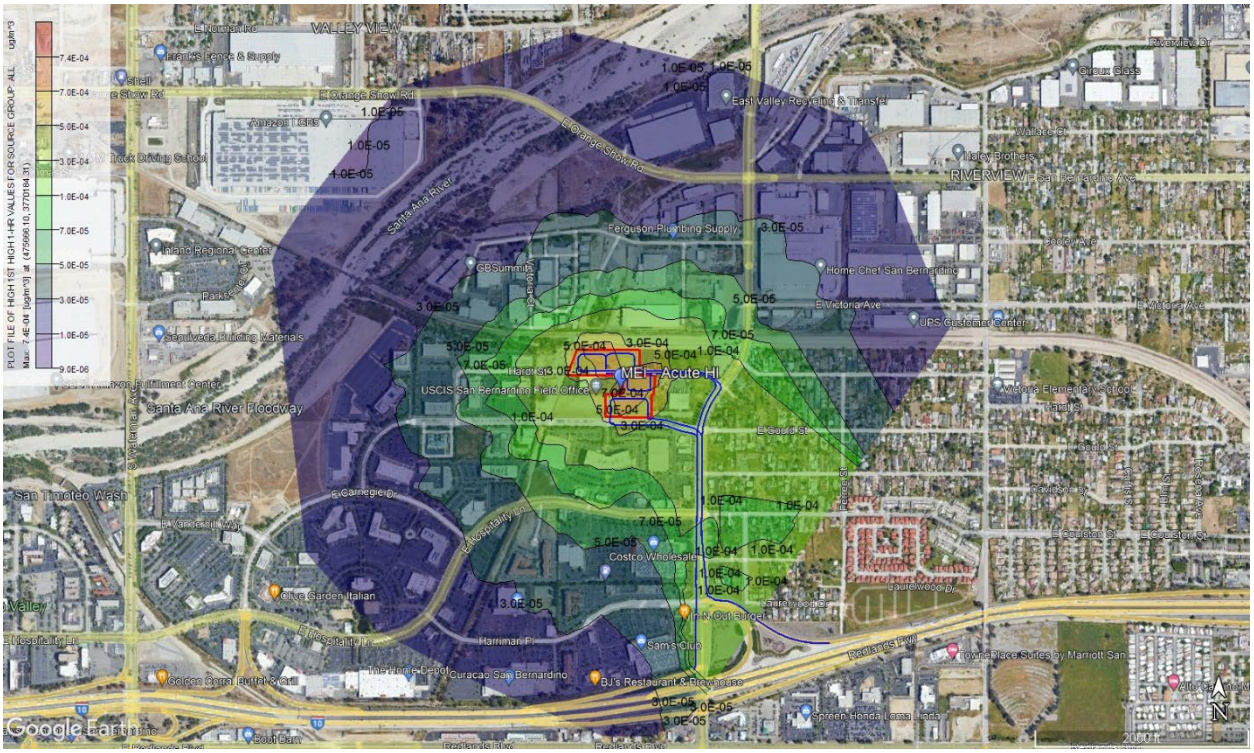
School Receptor Operational Chronic Hazard Index



Sensitive Receptor Operational Acute Hazard Index



Worker Receptor Operational Acute Hazard Index



School Receptor Operational Acute Hazard Index

Construction MEI (Sensitive) - Cancer Risk (in a Million) HARP Rec #: 261 X: 475933.07 Y: 3770120.90			
Unmitigated	T2	T3	T4
0.00	0.00	0.00	0.38
MEI (Sensitive) - Chronic Hazard Index HARP Rec #: 261 X: 475933.07 Y: 3770120.90			
Unmitigated	T2	T3	T4
0.00E+00	0.00E+00	0.00E+00	4.97E-04
MEI (Sensitive) - Acute Hazard Index HARP Rec #: NA X: NA Y: NA			
Unmitigated	T2	T3	T4
0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEI (Sensitive) - PM 2.5 HARP Rec #: 261 X: 475933.07 Y: 3770120.90			
Unmitigated	T2	T3	T4
0.000	0.000	0.000	0.002

Construction MEI (Worker) - Cancer Risk (in a Million) HARP Rec #: 2126 X: 475666.14 Y: 3770224.31			
Unmitigated	T2	T3	T4
0.00	0.00	0.00	0.07
MEI (Worker) - Chronic Hazard Index HARP Rec #: 2126 X: 475666.14 Y: 3770224.31			
Unmitigated	T2	T3	T4
0.00E+00	0.00E+00	0.00E+00	5.73E-03
MEI (Worker) - Acute Hazard Index HARP Rec #: NA X: NA Y: NA			
Unmitigated	T2	T3	T4
0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEI (Worker) - PM 2.5 HARP Rec #: 2126 X: 475666.14 Y: 3770224.31			
Unmitigated	T2	T3	T4
0.000	0.000	0.000	0.029

Construction MEI (School) - Cancer Risk (in a Million) HARP Rec #:1 X: 476730.13 Y: 3770161.41			
Unmitigated	T2	T3	T4
0.00	0.00	0.00	0.07
MEI (School) - Chronic Hazard Index HARP Rec #: 1 X: 476730.13 Y: 3770161.41			
Unmitigated	T2	T3	T4
0.00E+00	0.00E+00	0.00E+00	5.50E-05
MEI (School) - Acute Hazard Index HARP Rec #: NA X: NA Y: NA			
Unmitigated	T2	T3	T4
0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEI (School) - PM 2.5 HARP Rec #: 1 X: 476730.13 Y: 3770161.41			
Unmitigated	T2	T3	T4
0.0000	0.0000	0.0000	0.0003

Operational Sensitive Receptor			
Parameter	**HARP Rec #**	**X & Y Coordinate**	**Result**
30 Yr Cancer Risk (in a Million)	1	475954.8 3770171.08	7.55
Chronic HI	1142	475915.09 3769792.98	2.56E-03
Acute HI	259	475922.2 3770095.8	1.97E-04
PM 2.5	1142	475915.09 3769792.98	0.012

Operational Worker Receptor			
Parameter	**HARP Rec #**	**X & Y Coordinate**	**Result**
25 Yr Cancer Risk (in a Million)	2126	475666.14 3770224.31	2.53
Chronic HI	2126	475666.14 3770224.31	8.39E-03
Acute HI	2097	475666.1 3770184.31	7.38E-04
PM 2.5	2126	475666.14 3770224.31	4.05E-02

Operational School Receptor			
Parameter	**HARP Rec #**	**X & Y Coordinate**	**Result**
9 Yr Cancer Risk (in a Million)	1	476730.13 3770161.41	0.30
Chronic HI	1	476730.13 3770161.41	1.15E-04
Acute HI	1	476730.13 3770161.41	2.49E-05
PM 2.5	1	476730.13 3770161.41	0.0006

General AERMOD Input Parameters			
Project Boundary			
	Based on site plan		
Project Elevation Data			
	Source	**Lakes Environmental**	
	Link	http://www.webgis.com/terraindata.html	
	Evel Data Descr.	**7.5 min DEM not available**	
Project Receptor Grid			
	Telescoping Grid	Spacing (m)	Distance (m)
	Grid 1	**10**	**200**
	Grid 2	**20**	**200**
	Grid 3	**30**	**300**
	Grid 4	**40**	**200**
	Comments	**Receptors on roads or paring lot areas have been removed.**	
Meteorological Dataset			
	Location	**Redlands**	
	Provided By	**South Coast AQMD**	
	Years	**2012-2016**	
	Elevation (m)	**481**	
	Link	https://www.aqmd.gov/docs/default-source/air-quality/meterorological-data/aermod-ready-meteorological-data/table-1-meteorological-sites/2017/RedlandsADJU.zip?sfvrsn=13	
Construction Modeling Specific Inputs			
AERMOD Input Options			
	Regulatory Options	**Default**	
	Pollutant Type	**Other**	
	Averaging Period	**Period & Hourly**	
	Dispersion Coefficient	**Urban**	
	County	**San Bernardino**	
	Urban Grouping / Pop	**Y**	**2,035,210**
	# of Worker Receptors	**4,344**	
	# of Sensitive Receptors	**1,817**	
	# of School Receptors	**77**	
Construction Area Parameters			
	Source Type	**Polygon Area**	
	Project Area (m^2)	**17667.5**	
	Ht. of Source (m)	**3.048**	
Operational Modeling Specific Inputs			
AERMOD Input Options			
	Regulatory Options	**Default**	
	Pollutant Type	**Other**	
	Averaging Period	**Period / Hourly**	
	Dispersion Coefficient	**Urban**	
	Urban Grouping / Pop	**Y**	**2,035,210**
	# Worker Receptors	**4,344**	
	# Sensitive Receptors	**1,817**	
	# of School Receptors	**77**	
Diesel Truck Idling Parameters			
	Source Type	**Point**	
	Stack Ht. (m)	**3.658**	
	Stack Dia (m)	**0.044**	
	Stack Temp (k)	**388.7**	
	Velocity (m/s)	**25**	
Diesel Truck Travel Parameters			
	Source Type	**Line Volume**	
	Initial Vertical (m)	**1.42**	
	Initial Lateral (m)	**2.84**	
	Release Ht (m)	**Surface**	
	Volume Length (m)	**Roadway Segment Specific**	
Vehicle Travel Parameters			

7858.7	0.444811094
3560	0.201499929
6248.8	0.353688977
17667.5	

	Source Type	**Line Volume**
	Initial Vertical (m)	**0.85**
	Initial Lateral (m)	**1.70**
	Release Ht (m)	**Surface**
	Comments	**Combined if trucks travel the same path**

General HARP Input Parameters		
Construction		
School Receptors		
School Scenario Parameters		
	Class Grade	**K-12**
	Starting Age	**4**
	Age Range	**4 Year Old**
	Receptor Type	**Individual Resident**
	Assessment Type	**Cancer / Chronic / Acute**
	Exposure Duration	**1**
	Intake Rate	**RMP using the Derived Merthod**
	Comments	**Each year of construction is modeled seperately and the impact to each recepetor is summed to estimate the total esposure from construction emissions. Additionally, the starting age is increased for each year of construction.**
School Pathway Parameters		
	Pathways	**SCAQMD Manadatory minimum Pathways**
	Deposition Rate	**0.02**
	TAH < 16 yrs	**N**
	TAH ≥ 16 yrs	**N**
Sensitive Receptors		
Sensitive Scenario Parameters		
	Starting Age	**3rd Trimester**
	Age Range	**3rd Trimester - 4 Year**
	Receptor Type	**Individual Resident**
	Assessment Type	**Cancer / Chronic / Acute**
	Exposure Duration	**1**
	Intake Rate	**RMP using the Derived Merthod**
	Comments	**Each year of construction is modeled seperately and the impact to each recepetor is summed to estimate the total esposure from construction emissions. Additionally, the starting age is increased for each year of construction.**
Sensitive Pathway Parameters		
	Pathways	**SCAQMD Manadatory minimum Pathways**
	Deposition Rate	**0.02**
	TAH < 16 yrs	**Y**
	TAH ≥ 16 yrs	**Y**
Worker Receptors		
Worker Scenario Parameters		
	Starting Age	**16**
	Age Range	**16 - 19**
	Receptor Type	**Worker**
	Assessment Type	**Cancer / Chronic / Acute**
	Exposure Duration	**1**
	Intake Rate	**OEHHA Derived Merthod**
	Comments	**Each year of construction is modeled seperately and the impact to each recepetor is summed to estimate the total esposure from construction emissions. Additionally, the starting age is increased for each year of construction.**
Worker Pathway Parameters		
	Pathways	**OEHHA minimum Pathways**
	Deposition Rate	**0.02**
	TAH < 16 yrs	**N**
	TAH ≥ 16 yrs	**N**

PM 10				
Tons/Yr	Unmitigated	T2	T3	T4
Year 1	0.0045785	0	0	0.004579
Year 2	0	0	0	0
Year 3	0	0	0	0
Year 4	0	0	0	0

PM 2.5				
Tons/Yr	UM	T2	T3	T4
Year 1	4.58E-03	0.00E+00	0.00E+00	4.58E-03
Year 2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Year 3	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Year 4	0.00E+00	0.00E+00	0.00E+00	0.00E+00

PM 10				
Lbs /Yr	Unmitigated	T2	T3	T4
Year 1	9.157	0	0	9.157
Year 2	0	0	0	0
Year 3	0	0	0	0
Year 4	0	0	0	0

PM 2.5				
Lbs /Yr	UM	T2	T3	T4
Year 1	9.157	0	0	9.157
Year 2	0	0	0	0
Year 3	0	0	0	0
Year 4	0	0	0	0

PM 10				
% Chng	Unmitigated	T2	T3	T4
Year 1	100%	0%	0%	100%
Year 2	0%	0%	0%	0%
Year 3	0%	0%	0%	0%
Year 4	0%	0%	0%	0%

PM 2.5				
g/sec	UM	T2	T3	T4
Year 1	0.000132	0	0	0.000132
Year 2	0	0	0	0
Year 3	0	0	0	0
Year 4	0	0	0	0

Project Descr.	Total Vehicles	Percent		
Buildings A & B	442	43.590%	21.79%	
Buildings C	229	22.584%		66.174%
Buildings D	343	33.826%		
Total	1014	100%		

	CalEEMod*	Adjusted
HHD	1.76%	2.15%
LDA	50.15%	61.29%
LDT1	4.06%	4.96%
LDT2	20.44%	24.98%
LHD1	2.89%	3.53%
LHD2	0.79%	0.97%
MDH	1.73%	2.11%
Totals	81.82%	100.00%

* % from CalEEMod without vehicle related to Project

Passenger Vehicles	2-Axle Trks	3-Axle Trks	4-Axle Trks	Total
91.24%	4.50%	2.11%	2.15%	100.00%

	Daily Trips				
	1014				
	Passenger Vehicles	2-Axle Trks	3-Axle Trks	4-Axle Trks	Total
Percentage	91.2%	4.5%	2.1%	2.2%	100%
# Daily Vehicles	925.14	45.61	21.44	21.81	1014
# Annual Vehicles	337,677	16,646	7,826	7,961	370,110

Truck Travel

Onsite Truck Travel Emissions			
Category	# of Trucks / Yr	% of Total	DPM EF (lb/Mile)
2-Axle Trks	16,646	51.3%	1.40E+01
3-Axle Trks	7,826	24.1%	4.55E-01
4-Axle Trks	7,961	24.5%	1.93E-01
Total	32,433	100%	---

DPM Lbs/ Yr	BLD_A	BLD_B	BLD_C	BLD_D			Total
Distance (m)	153.1	156.9	146.8	200.6	0	0	657.4
%	21.79%	21.79%	22.59%	33.83%	0%	0%	100.00%
2-Axle Trks	2.91E-01	2.98E-01	2.89E-01	5.91E-01	0.00E+00	0.00E+00	1.47E+00
3-Axle Trks	9.43E-03	9.66E-03	9.37E-03	1.92E-02	0.00E+00	0.00E+00	4.76E-02
4-Axle Trks	3.99E-03	4.09E-03	3.97E-03	8.13E-03	0.00E+00	0.00E+00	2.02E-02
Total	3.04E-01	3.12E-01	3.02E-01	6.19E-01	0.00E+00	0.00E+00	1.54E+00

Offsite Truck Travel Emissions			
Category	# of Trucks / Yr	% of Total	DPM EF (lb/Mile)
2-Axle Trks	16,646	51.3%	1.01E+00
3-Axle Trks	7,826	24.1%	1.84E-01
4-Axle Trks	7,961	24.5%	5.56E-01
Total	32,433	100%	---

DPM Lbs/ Yr	HARDT_IN	HARDT_OT	BRIER_IN	BRIER_OT	OUT	IN	Total
Gas Only	N	N	N	N	N	N	
Distance (m)	574.2	478.7	166.5	269.9	658.7	831.7	2979.7
%	33%	33%	17%	17%	50%	50%	200%
2-Axle Trks	1.19E-01	9.93E-02	1.76E-02	2.86E-02	2.06E-01	2.61E-01	7.32E-01
3-Axle Trks	2.18E-02	1.82E-02	3.23E-03	5.23E-03	3.78E-02	4.77E-02	1.34E-01
4-Axle Trks	6.57E-02	5.48E-02	9.74E-03	1.58E-02	1.14E-01	1.44E-01	4.04E-01
Total	2.07E-01	1.72E-01	3.06E-02	4.96E-02	3.58E-01	4.52E-01	1.27E+00

Truck Idle

# of Idling Pts	5											
Truck Idling						Idle						Total
Category	# of Trucks / Yr	Idle EF (lbs /Idle-Event)	Time (Hr)	Lbs/ Yr	Lbs / Yr /Unit	5	0	0	0	0	0	5
2-Axle Trks	16,646	6.08E-05	0.25	2.53E-01	5.06E-02	2.53E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.53E-01
3-Axle Trks	7,826	4.61E-05	0.25	9.02E-02	1.80E-02	9.02E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.02E-02
4-Axle Trks	7,961	8.53E-05	0.25	1.70E-01	3.40E-02	1.70E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.70E-01
Total	32,433	--	--	5.13E-01	1.03E-01	1.03E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.13E-01

TRUs

Percent of Trucks	0		# of Units	1	
Onsite TRU Emissions					
Category	Percentage	# of TRUs / Yr	Time (Hr)	*DPM EF (lbs/Event)	Emissions (lb/Yr)
2-Axle Trks	15.5	0	0.50	4.19E-03	0.00
3-Axle Trks	4.9	0			0.00
4-Axle Trks	24.3	0			0.00
Total	45	0	Emission/Unit		0.00

* TRU EF * BHP * Load factor * Time in hours

Vehicle Emissions

Vehicle Travel Percentage / Count			
Category	# of Vehicles / Yr	% LDA	% LDT
Passenger Vehicles	337,677	67%	32.72%
# Vehicles		227,199	110,477

Category	TOG Exhaust EF (lb/Mile)	TOG Runloss EF (lb/Mile)
LDA	2.85E-05	5.12E-04
LDT	6.73E-05	8.81E-04

CARB TOG Speciation Profile Run Exhaust			Lbs/mi/yr	
CAS#	Chemical Name	Fraction	LDA	LDT
75070	Acetaldehyde	2.80E-03	1.81E-02	2.08E-02
107028	Acrolein	1.30E-03	8.42E-03	9.66E-03
71432	Benzene	2.47E-02	1.60E-01	1.84E-01
106990	1,3-Butadiene	5.50E-03	3.56E-02	4.09E-02
100414	Ethylbenzene	1.05E-02	6.80E-02	7.80E-02
50000	Formaldehyde	1.58E-02	1.02E-01	1.17E-01
110543	Hexane	1.60E-02	1.04E-01	1.19E-01
67561	Methanol	1.20E-03	7.77E-03	8.92E-03
78933	Methyl Ethyl Ketone	2.00E-04	1.30E-03	1.49E-03
91203	Naphthalene	5.00E-04	3.24E-03	3.72E-03
115071	Propylene	3.06E-02	1.98E-01	2.27E-01
100425	Styrene	1.20E-03	7.77E-03	8.92E-03
108883	Toluene	5.76E-02	3.73E-01	4.28E-01
1330207	Xylenes	4.80E-02	3.11E-01	3.57E-01
9901	Diesel	1.38E-02	6.91E+00	3.36E+00

CARB TOG Speciation Profile Evaporative Losses			Lbs/mi/yr	
CAS#	Chemical Name	Fraction	LDA	LDT
71432	Benzene	3.600E-03	2.33E-02	2.68E-02
100414	Ethylbenzene	1.180E-03	7.64E-03	8.77E-03
110543	Hexane	1.540E-02	9.98E-02	1.14E-01
108883	Toluene	1.700E-02	1.10E-01	1.26E-01
1330207	Xylenes	5.780E-03	3.74E-02	4.29E-02

Vehicle Emissions Travel Summary

Emissions Summary				Source Col	1		2		3		4		5		6		7		8		9		10		11		12			
				Vehicles	BLD_A		BLD_B		BLD_C		BLD_D		0		0		HARDT_IN		HARDT_OT		BRIER_IN		BRIER_OT		OUT		IN		Total Percentage	Total Distance
				Cars	22%		22%		23%		34%		10%		10%		33%		33%		17%		17%		50%		50%			
					21.79%		21.79%		22.59%		33.83%		10.00%		10.00%		33.09%		33.09%		16.91%		16.91%		50.00%		50.00%		320.00%	3637.1
				Trucks	0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%			
					0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%			
CAS#	Chemical Name	Lbs/mi/Hr	Lbs/mi/ Yr		Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr
75070	Acetaldehyde	1.30E-05	3.89E-02		2.83E-06	8.49E-03	2.83E-06	8.49E-03	2.93E-06	8.80E-03	4.39E-06	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.42E-06	4.26E-03	1.42E-06	4.26E-03	3.71E-07	1.11E-03	3.71E-07	1.11E-03	3.25E-06	9.74E-03	3.25E-06	9.74E-03	2.31E-05	6.92E-02
107028	Acrolein	6.03E-06	1.81E-02		1.31E-06	3.94E-03	1.31E-06	3.94E-03	1.36E-06	4.08E-03	2.04E-06	6.12E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.60E-07	1.98E-03	6.60E-07	1.98E-03	1.72E-07	5.17E-04	1.72E-07	5.17E-04	1.51E-06	4.52E-03	1.51E-06	4.52E-03	1.07E-05	3.21E-02
71432	Benzene	1.31E-04	3.94E-01		2.86E-05	8.58E-02	2.86E-05	8.58E-02	2.96E-05	8.89E-02	4.44E-05	1.33E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E-05	4.31E-02	1.44E-05	4.31E-02	3.75E-06	1.13E-02	3.75E-06	1.13E-02	3.28E-05	9.84E-02	3.28E-05	9.84E-02	2.33E-04	6.99E-01
106990	1,3-Butadiene	2.55E-05	7.65E-02		5.56E-06	1.67E-02	5.56E-06	1.67E-02	5.76E-06	1.73E-02	8.63E-06	2.59E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.79E-06	8.37E-03	2.79E-06	8.37E-03	7.29E-07	2.19E-03	7.29E-07	2.19E-03	6.38E-06	1.91E-02	6.38E-06	1.91E-02	4.53E-05	1.36E-01
100414	Ethylbenzene	5.42E-05	1.62E-01		1.18E-05	3.54E-02	1.18E-05	3.54E-02	1.22E-05	3.67E-02	1.83E-05	5.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.93E-06	1.78E-02	5.93E-06	1.78E-02	1.55E-06	4.65E-03	1.55E-06	4.65E-03	1.35E-05	4.06E-02	1.35E-05	4.06E-02	9.62E-05	2.89E-01
50000	Formaldehyde	7.33E-05	2.20E-01		1.60E-05	4.79E-02	1.60E-05	4.79E-02	1.65E-05	4.96E-02	2.48E-05	7.43E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.02E-06	2.41E-02	8.02E-06	2.41E-02	2.10E-06	6.29E-03	2.10E-06	6.29E-03	1.83E-05	5.49E-02	1.83E-05	5.49E-02	1.30E-04	3.90E-01
110543	Hexane	1.46E-04	4.37E-01		3.17E-05	9.52E-02	3.17E-05	9.52E-02	3.29E-05	9.87E-02	4.93E-05	1.48E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.59E-05	4.78E-02	1.59E-05	4.78E-02	4.16E-06	1.25E-02	4.16E-06	1.25E-02	3.64E-05	1.09E-01	3.64E-05	1.09E-01	2.59E-04	7.76E-01
67561	Methanol	5.56E-06	1.67E-02		1.21E-06	3.64E-03	1.21E-06	3.64E-03	1.26E-06	3.77E-03	1.88E-06	5.65E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.09E-07	1.83E-03	6.09E-07	1.83E-03	1.59E-07	4.77E-04	1.59E-07	4.77E-04	1.39E-06	4.17E-03	1.39E-06	4.17E-03	9.88E-06	2.96E-02
78933	Methyl Ethyl Ketone	9.27E-07	2.78E-03		2.02E-07	6.06E-04	2.02E-07	6.06E-04	2.09E-07	6.28E-04	3.14E-07	9.41E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-07	3.05E-04	1.02E-07	3.05E-04	2.65E-08	7.96E-05	2.65E-08	7.96E-05	2.32E-07	6.95E-04	2.32E-07	6.95E-04	1.65E-06	4.94E-03
91203	Naphthalene	2.32E-06	6.95E-03		5.05E-07	1.52E-03	5.05E-07	1.52E-03	5.24E-07	1.57E-03	7.84E-07	2.35E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.54E-07	7.61E-04	2.54E-07	7.61E-04	6.63E-08	1.99E-04	6.63E-08	1.99E-04	5.80E-07	1.74E-03	5.80E-07	1.74E-03	4.12E-06	1.24E-02
115071	Propylene	1.42E-04	4.26E-01		3.09E-05	9.27E-02	3.09E-05	9.27E-02	3.20E-05	9.61E-02	4.80E-05	1.44E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.55E-05	4.66E-02	1.55E-05	4.66E-02	4.06E-06	1.22E-02	4.06E-06	1.22E-02	3.55E-05	1.06E-01	3.55E-05	1.06E-01	2.52E-04	7.56E-01
100425	Styrene	5.56E-06	1.67E-02		1.21E-06	3.64E-03	1.21E-06	3.64E-03	1.26E-06	3.77E-03	1.88E-06	5.65E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.09E-07	1.83E-03	6.09E-07	1.83E-03	1.59E-07	4.77E-04	1.59E-07	4.77E-04	1.39E-06	4.17E-03	1.39E-06	4.17E-03	9.88E-06	2.96E-02
108883	Toluene	3.46E-04	1.04E+00		7.54E-05	2.26E-01	7.54E-05	2.26E-01	7.81E-05	2.34E-01	1.17E-04	3.51E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.79E-05	1.14E-01	3.79E-05	1.14E-01	9.89E-06	2.97E-02	9.89E-06	2.97E-02	8.65E-05	2.59E-01	8.65E-05	2.59E-01	6.14E-04	1.84E+00
1330207	Xylenes	2.49E-04	7.48E-01		5.43E-05	1.63E-01	5.43E-05	1.63E-01	5.63E-05	1.69E-01	8.44E-05	2.53E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.73E-05	8.19E-02	2.73E-05	8.19E-02	7.13E-06	2.14E-02	7.13E-06	2.14E-02	6.23E-05	1.87E-01	6.23E-05	1.87E-01	4.43E-04	1.33E+00
9901	Diesel	3.42E-03	1.03E+01		7.46E-04	2.54E+00	7.46E-04	2.55E+00	7.73E-04	2.62E+00	3.92E-04	1.79E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.75E-04	1.33E+00	3.75E-04	1.30E+00	9.79E-05	3.24E-01	9.79E-05	3.43E-01	8.56E-04	2.93E+00	8.56E-04	3.02E+00	5.31E-03	1.87E+01

	Model Source		Source Col	Dat Col		Col	Row	CAS#	Chemical Name	Pol Count	Source Count
1	BLD_A		1	8	1	8	98	75070	Acetaldehyde	15	19
2	BLD_B		2	10	2	10	99	107028	Acrolein		
3	BLD_C		3	12	3	12	100	71432	Benzene		
4	BLD_D		4	14	4	14	101	106990	1-3,Butadiene		
5		0	5	16	5	16	102	100414	Ethylbenzene		
6		0	6	18	6	18	103	50000	Formaldehyde		
7	HARDT_IN		7	20	7	20	104	110543	Hexane		
8	HARDT_OT		8	22	8	22	105	67561	Methanol		
9	BRIER_IN		9	24	9	24	106	78933	Methyl Ethyl Ketone		
10	BRIER_OT		10	26	10	26	107	91203	Naphthalene		
11	OUT		11	28	11	28	108	115071	Propylene		
12	IN		12	30	12	30	109	100425	Styrene		
13	Idle		Idle1	8		8	110	108883	Toluene		
14		0	Idle1	9		8	111	1330207	Xylenes		
15		0	Idle1	10		8	112	9901	Diesel		
16		0	Idle1	11		8					
17		0	Idle1	12		8	37		Idle		
18		0	Idle1	13		7	47		TRU		
19	TRU		TRU	7							
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1	8	98	1	1	BLD_A	0	0	75070	Acetaldehyde	1	8.49E-03	2.83E-06	1
1	8	99	1	2	BLD_A	0	0	107028	Acrolein	1	3.94E-03	1.31E-06	1
1	8	100	1	3	BLD_A	0	0	71432	Benzene	1	8.58E-02	2.86E-05	1
1	8	101	1	4	BLD_A	0	0	106990	1-3,Butadiene	1	1.67E-02	5.56E-06	1
1	8	102	1	5	BLD_A	0	0	100414	Ethylbenzene	1	3.54E-02	1.18E-05	1
1	8	103	1	6	BLD_A	0	0	50000	Formaldehyde	1	4.79E-02	1.60E-05	1
1	8	104	1	7	BLD_A	0	0	110543	Hexane	1	9.52E-02	3.17E-05	1
1	8	105	1	8	BLD_A	0	0	67561	Methanol	1	3.64E-03	1.21E-06	1
1	8	106	1	9	BLD_A	0	0	78933	Methyl Ethyl Ketone	1	6.06E-04	2.02E-07	1
1	8	107	1	10	BLD_A	0	0	91203	Naphthalene	1	1.52E-03	5.05E-07	1
1	8	108	1	11	BLD_A	0	0	115071	Propylene	1	9.27E-02	3.09E-05	1
1	8	109	1	12	BLD_A	0	0	100425	Styrene	1	3.64E-03	1.21E-06	1
1	8	110	1	13	BLD_A	0	0	108883	Toluene	1	2.26E-01	7.54E-05	1
1	8	111	1	14	BLD_A	0	0	1330207	Xylenes	1	1.63E-01	5.43E-05	1
1	8	112	1	15	BLD_A	0	0	9901	Diesel	1	2.54E+00	7.46E-04	1
2	10	98	2	1	BLD_B	0	0	75070	Acetaldehyde	1	8.49E-03	2.83E-06	1
2	10	99	2	2	BLD_B	0	0	107028	Acrolein	1	3.94E-03	1.31E-06	1
2	10	100	2	3	BLD_B	0	0	71432	Benzene	1	8.58E-02	2.86E-05	1
2	10	101	2	4	BLD_B	0	0	106990	1-3,Butadiene	1	1.67E-02	5.56E-06	1
2	10	102	2	5	BLD_B	0	0	100414	Ethylbenzene	1	3.54E-02	1.18E-05	1
2	10	103	2	6	BLD_B	0	0	50000	Formaldehyde	1	4.79E-02	1.60E-05	1
2	10	104	2	7	BLD_B	0	0	110543	Hexane	1	9.52E-02	3.17E-05	1
2	10	105	2	8	BLD_B	0	0	67561	Methanol	1	3.64E-03	1.21E-06	1
2	10	106	2	9	BLD_B	0	0	78933	Methyl Ethyl Ketone	1	6.06E-04	2.02E-07	1
2	10	107	2	10	BLD_B	0	0	91203	Naphthalene	1	1.52E-03	5.05E-07	1
2	10	108	2	11	BLD_B	0	0	115071	Propylene	1	9.27E-02	3.09E-05	1
2	10	109	2	12	BLD_B	0	0	100425	Styrene	1	3.64E-03	1.21E-06	1
2	10	110	2	13	BLD_B	0	0	108883	Toluene	1	2.26E-01	7.54E-05	1
2	10	111	2	14	BLD_B	0	0	1330207	Xylenes	1	1.63E-01	5.43E-05	1
2	10	112	2	15	BLD_B	0	0	9901	Diesel	1	2.55E+00	7.46E-04	1
3	12	98	3	1	BLD_C	0	0	75070	Acetaldehyde	1	8.80E-03	2.93E-06	1
3	12	99	3	2	BLD_C	0	0	107028	Acrolein	1	4.08E-03	1.36E-06	1
3	12	100	3	3	BLD_C	0	0	71432	Benzene	1	8.89E-02	2.96E-05	1
3	12	101	3	4	BLD_C	0	0	106990	1-3,Butadiene	1	1.73E-02	5.76E-06	1
3	12	102	3	5	BLD_C	0	0	100414	Ethylbenzene	1	3.67E-02	1.22E-05	1
3	12	103	3	6	BLD_C	0	0	50000	Formaldehyde	1	4.96E-02	1.65E-05	1
3	12	104	3	7	BLD_C	0	0	110543	Hexane	1	9.87E-02	3.29E-05	1
3	12	105	3	8	BLD_C	0	0	67561	Methanol	1	3.77E-03	1.26E-06	1
3	12	106	3	9	BLD_C	0	0	78933	Methyl Ethyl Ketone	1	6.28E-04	2.09E-07	1
3	12	107	3	10	BLD_C	0	0	91203	Naphthalene	1	1.57E-03	5.24E-07	1
3	12	108	3	11	BLD_C	0	0	115071	Propylene	1	9.61E-02	3.20E-05	1
3	12	109	3	12	BLD_C	0	0	100425	Styrene	1	3.77E-03	1.26E-06	1
3	12	110	3	13	BLD_C	0	0	108883	Toluene	1	2.34E-01	7.81E-05	1
3	12	111	3	14	BLD_C	0	0	1330207	Xylenes	1	1.69E-01	5.63E-05	1
3	12	112	3	15	BLD_C	0	0	9901	Diesel	1	2.62E+00	7.73E-04	1
4	14	98	4	1	BLD_D	0	0	75070	Acetaldehyde	1	1.32E-02	4.39E-06	1
4	14	99	4	2	BLD_D	0	0	107028	Acrolein	1	6.12E-03	2.04E-06	1
4	14	100	4	3	BLD_D	0	0	71432	Benzene	1	1.33E-01	4.44E-05	1
4	14	101	4	4	BLD_D	0	0	106990	1-3,Butadiene	1	2.59E-02	8.63E-06	1
4	14	102	4	5	BLD_D	0	0	100414	Ethylbenzene	1	5.50E-02	1.83E-05	1
4	14	103	4	6	BLD_D	0	0	50000	Formaldehyde	1	7.43E-02	2.48E-05	1
4	14	104	4	7	BLD_D	0	0	110543	Hexane	1	1.48E-01	4.93E-05	1
4	14	105	4	8	BLD_D	0	0	67561	Methanol	1	5.65E-03	1.88E-06	1
4	14	106	4	9	BLD_D	0	0	78933	Methyl Ethyl Ketone	1	9.41E-04	3.14E-07	1
4	14	107	4	10	BLD_D	0	0	91203	Naphthalene	1	2.35E-03	7.84E-07	1
4	14	108	4	11	BLD_D	0	0	115071	Propylene	1	1.44E-01	4.80E-05	1
4	14	109	4	12	BLD_D	0	0	100425	Styrene	1	5.65E-03	1.88E-06	1
4	14	110	4	13	BLD_D	0	0	108883	Toluene	1	3.51E-01	1.17E-04	1
4	14	111	4	14	BLD_D	0	0	1330207	Xylenes	1	2.53E-01	8.44E-05	1
4	14	112	4	15	BLD_D	0	0	9901	Diesel	1	1.79E+00	3.92E-04	1
5	16	98	5	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
5	16	99	5	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
5	16	100	5	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
5	16	101	5	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
5	16	102	5	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
5	16	103	5	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
5	16	104	5	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
5	16	105	5	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
5	16	106	5	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
5	16	107	5	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
5	16	108	5	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
5	16	109	5	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
5	16	110	5	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
5	16	111	5	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
5	16	112	5	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
6	18	98	6	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
6	18	99	6	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
6	18	100	6	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
6	18	101	6	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
6	18	102	6	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
6	18	103	6	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
6	18	104	6	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
6	18	105	6	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
6	18	106	6	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
6	18	107	6	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
6	18	108	6	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
6	18	109	6	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
6	18	110	6	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
6	18	111	6	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
6	18	112	6	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
7	20	98	7	1	HARDT_IN	0	0	75070	Acetaldehyde	1	4.26E-03	1.42E-06	1
7	20	99	7	2	HARDT_IN	0	0	107028	Acrolein	1	1.98E-03	6.60E-07	1
7	20	100	7	3	HARDT_IN	0	0	71432	Benzene	1	4.31E-02	1.44E-05	1
7	20	101	7	4	HARDT_IN	0	0	106990	1-3,Butadiene	1	8.37E-03	2.79E-06	1
7	20	102	7	5	HARDT_IN	0	0	100414	Ethylbenzene	1	1.78E-02	5.93E-06	1
7	20	103	7	6	HARDT_IN	0	0	50000	Formaldehyde	1	2.41E-02	8.02E-06	1
7	20	104	7	7	HARDT_IN	0	0	110543	Hexane	1	4.78E-02	1.59E-05	1
7	20	105	7	8	HARDT_IN	0	0	67561	Methanol	1	1.83E-03	6.09E-07	1
7	20	106	7	9	HARDT_IN	0	0	78933	Methyl Ethyl Ketone	1	3.05E-04	1.02E-07	1
7	20	107	7	10	HARDT_IN	0	0	91203	Naphthalene	1	7.61E-04	2.54E-07	1
7	20	108	7	11	HARDT_IN	0	0	115071	Propylene	1	4.66E-02	1.55E-05	1
7	20	109	7	12	HARDT_IN	0	0	100425	Styrene	1	1.83E-03	6.09E-07	1
7	20	110	7	13	HARDT_IN	0	0	108883	Toluene	1	1.14E-01	3.79E-05	1
7	20	111	7	14	HARDT_IN	0	0	1330207	Xylenes	1	8.19E-02	2.73E-05	1
7	20	112	7	15	HARDT_IN	0	0	9901	Diesel	1	1.33E+00	3.75E-04	1
8	22	98	8	1	HARDT_OT	0	0	75070	Acetaldehyde	1	4.26E-03	1.42E-06	1
8	22	99	8	2	HARDT_OT	0	0	107028	Acrolein	1	1.98E-03	6.60E-07	1
8	22	100	8	3	HARDT_OT	0	0	71432	Benzene	1	4.31E-02	1.44E-05	1
8	22	101	8	4	HARDT_OT	0	0	106990	1-3,Butadiene	1	8.37E-03	2.79E-06	1
8	22	102	8	5	HARDT_OT	0	0	100414	Ethylbenzene	1	1.78E-02	5.93E-06	1
8	22	103	8	6	HARDT_OT	0	0	50000	Formaldehyde	1	2.41E-02	8.02E-06	1
8	22	104	8	7	HARDT_OT	0	0	110543	Hexane	1	4.78E-02	1.59E-05	1
8	22	105	8	8	HARDT_OT	0	0	67561	Methanol	1	1.83E-03	6.09E-07	1
8	22	106	8	9	HARDT_OT	0	0	78933	Methyl Ethyl Ketone	1	3.05E-04	1.02E-07	1
8	22	107	8	10	HARDT_OT	0	0	91203	Naphthalene	1	7.61E-04	2.54E-07	1
8	22	108	8	11	HARDT_OT	0	0	115071	Propylene	1	4.66E-02	1.55E-05	1
8	22	109	8	12	HARDT_OT	0	0	100425	Styrene	1	1.83E-03	6.09E-07	1
8	22	110	8	13	HARDT_OT	0	0	108883	Toluene	1	1.14E-01	3.79E-05	1
8	22	111	8	14	HARDT_OT	0	0	1330207	Xylenes	1	8.19E-02	2.73E-05	1
8	22	112	8	15	HARDT_OT	0	0	9901	Diesel	1	1.30E+00	3.75E-04	1
9	24	98	9	1	BRIER_IN	0	0	75070	Acetaldehyde	1	1.11E-03	3.71E-07	1
9	24	99	9	2	BRIER_IN	0	0	107028	Acrolein	1	5.17E-04	1.72E-07	1
9	24	100	9	3	BRIER_IN	0	0	71432	Benzene	1	1.13E-02	3.75E-06	1
9	24	101	9	4	BRIER_IN	0	0	106990	1-3,Butadiene	1	2.19E-03	7.29E-07	1
9	24	102	9	5	BRIER_IN	0	0	100414	Ethylbenzene	1	4.65E-03	1.55E-06	1
9	24	103	9	6	BRIER_IN	0	0	50000	Formaldehyde	1	6.29E-03	2.10E-06	1
9	24	104	9	7	BRIER_IN	0	0	110543	Hexane	1	1.25E-02	4.16E-06	1
9	24	105	9	8	BRIER_IN	0	0	67561	Methanol	1	4.77E-04	1.59E-07	1
9	24	106	9	9	BRIER_IN	0	0	78933	Methyl Ethyl Ketone	1	7.96E-05	2.65E-08	1
9	24	107	9	10	BRIER_IN	0	0	91203	Naphthalene	1	1.99E-04	6.63E-08	1
9	24	108	9	11	BRIER_IN	0	0	115071	Propylene	1	1.22E-02	4.06E-06	1
9	24	109	9	12	BRIER_IN	0	0	100425	Styrene	1	4.77E-04	1.59E-07	1
9	24	110	9	13	BRIER_IN	0	0	108883	Toluene	1	2.97E-02	9.89E-06	1
9	24	111	9	14	BRIER_IN	0	0	1330207	Xylenes	1	2.14E-02	7.13E-06	1
9	24	112	9	15	BRIER_IN	0	0	9901	Diesel	1	3.24E-01	9.79E-05	1
10	26	98	10	1	BRIER_OT	0	0	75070	Acetaldehyde	1	1.11E-03	3.71E-07	1
10	26	99	10	2	BRIER_OT	0	0	107028	Acrolein	1	5.17E-04	1.72E-07	1
10	26	100	10	3	BRIER_OT	0	0	71432	Benzene	1	1.13E-02	3.75E-06	1
10	26	101	10	4	BRIER_OT	0	0	106990	1-3,Butadiene	1	2.19E-03	7.29E-07	1
10	26	102	10	5	BRIER_OT	0	0	100414	Ethylbenzene	1	4.65E-03	1.55E-06	1
10	26	103	10	6	BRIER_OT	0	0	50000	Formaldehyde	1	6.29E-03	2.10E-06	1
10	26	104	10	7	BRIER_OT	0	0	110543	Hexane	1	1.25E-02	4.16E-06	1
10	26	105	10	8	BRIER_OT	0	0	67561	Methanol	1	4.77E-04	1.59E-07	1
10	26	106	10	9	BRIER_OT	0	0	78933	Methyl Ethyl Ketone	1	7.96E-05	2.65E-08	1
10	26	107	10	10	BRIER_OT	0	0	91203	Naphthalene	1	1.99E-04	6.63E-08	1
10	26	108	10	11	BRIER_OT	0	0	115071	Propylene	1	1.22E-02	4.06E-06	1

10	26	109	10	12	BRIER_OT	0	0	100425	Styrene	1	4.77E-04	1.59E-07	1
10	26	110	10	13	BRIER_OT	0	0	108883	Toluene	1	2.97E-02	9.89E-06	1
10	26	111	10	14	BRIER_OT	0	0	1330207	Xylenes	1	2.14E-02	7.13E-06	1
10	26	112	10	15	BRIER_OT	0	0	9901	Diesel	1	3.43E-01	9.79E-05	1
11	28	98	11	1	OUT	0	0	75070	Acetaldehyde	1	9.74E-03	3.25E-06	1
11	28	99	11	2	OUT	0	0	107028	Acrolein	1	4.52E-03	1.51E-06	1
11	28	100	11	3	OUT	0	0	71432	Benzene	1	9.84E-02	3.28E-05	1
11	28	101	11	4	OUT	0	0	106990	1-3,Butadiene	1	1.91E-02	6.38E-06	1
11	28	102	11	5	OUT	0	0	100414	Ethylbenzene	1	4.06E-02	1.35E-05	1
11	28	103	11	6	OUT	0	0	50000	Formaldehyde	1	5.49E-02	1.83E-05	1
11	28	104	11	7	OUT	0	0	110543	Hexane	1	1.09E-01	3.64E-05	1
11	28	105	11	8	OUT	0	0	67561	Methanol	1	4.17E-03	1.39E-06	1
11	28	106	11	9	OUT	0	0	78933	Methyl Ethyl Ketone	1	6.95E-04	2.32E-07	1
11	28	107	11	10	OUT	0	0	91203	Naphthalene	1	1.74E-03	5.80E-07	1
11	28	108	11	11	OUT	0	0	115071	Propylene	1	1.06E-01	3.55E-05	1
11	28	109	11	12	OUT	0	0	100425	Styrene	1	4.17E-03	1.39E-06	1
11	28	110	11	13	OUT	0	0	108883	Toluene	1	2.59E-01	8.65E-05	1
11	28	111	11	14	OUT	0	0	1330207	Xylenes	1	1.87E-01	6.23E-05	1
11	28	112	11	15	OUT	0	0	9901	Diesel	1	2.93E+00	8.56E-04	1
12	30	98	12	1	IN	0	0	75070	Acetaldehyde	1	9.74E-03	3.25E-06	1
12	30	99	12	2	IN	0	0	107028	Acrolein	1	4.52E-03	1.51E-06	1
12	30	100	12	3	IN	0	0	71432	Benzene	1	9.84E-02	3.28E-05	1
12	30	101	12	4	IN	0	0	106990	1-3,Butadiene	1	1.91E-02	6.38E-06	1
12	30	102	12	5	IN	0	0	100414	Ethylbenzene	1	4.06E-02	1.35E-05	1
12	30	103	12	6	IN	0	0	50000	Formaldehyde	1	5.49E-02	1.83E-05	1
12	30	104	12	7	IN	0	0	110543	Hexane	1	1.09E-01	3.64E-05	1
12	30	105	12	8	IN	0	0	67561	Methanol	1	4.17E-03	1.39E-06	1
12	30	106	12	9	IN	0	0	78933	Methyl Ethyl Ketone	1	6.95E-04	2.32E-07	1
12	30	107	12	10	IN	0	0	91203	Naphthalene	1	1.74E-03	5.80E-07	1
12	30	108	12	11	IN	0	0	115071	Propylene	1	1.06E-01	3.55E-05	1
12	30	109	12	12	IN	0	0	100425	Styrene	1	4.17E-03	1.39E-06	1
12	30	110	12	13	IN	0	0	108883	Toluene	1	2.59E-01	8.65E-05	1
12	30	111	12	14	IN	0	0	1330207	Xylenes	1	1.87E-01	6.23E-05	1
12	30	112	12	15	IN	0	0	9901	Diesel	1	3.02E+00	8.56E-04	1
Idle	8	98	13	1	Idle	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	8	99	13	2	Idle	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	8	100	13	3	Idle	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	8	101	13	4	Idle	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	8	102	13	5	Idle	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	8	103	13	6	Idle	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	8	104	13	7	Idle	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
Idle	8	105	13	8	Idle	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	8	106	13	9	Idle	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	8	107	13	10	Idle	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	8	108	13	11	Idle	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	8	109	13	12	Idle	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	8	110	13	13	Idle	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	8	111	13	14	Idle	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	8	37	13	15	Idle	0	0	9901	Diesel	1	1.03E-01	1.03E-01	1
Idle	9	98	14	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	9	99	14	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	9	100	14	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	9	101	14	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	9	102	14	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	9	103	14	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	9	104	14	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
Idle	9	105	14	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	9	106	14	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	9	107	14	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	9	108	14	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	9	109	14	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	9	110	14	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	9	111	14	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	9	37	14	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
Idle	10	98	15	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	10	99	15	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	10	100	15	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	10	101	15	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	10	102	15	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	10	103	15	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	10	104	15	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
Idle	10	105	15	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	10	106	15	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	10	107	15	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	10	108	15	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	10	109	15	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	10	110	15	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	10	111	15	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	10	37	15	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
Idle	11	98	16	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	11	99	16	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	11	100	16	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	11	101	16	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	11	102	16	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	11	103	16	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	11	104	16	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
Idle	11	105	16	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	11	106	16	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	11	107	16	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	11	108	16	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	11	109	16	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	11	110	16	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	11	111	16	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	11	37	16	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
Idle	12	98	17	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	12	99	17	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	12	100	17	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	12	101	17	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	12	102	17	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	12	103	17	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	12	104	17	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
Idle	12	105	17	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	12	106	17	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	12	107	17	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	12	108	17	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	12	109	17	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	12	110	17	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	12	111	17	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	12	37	17	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
Idle	13	98	18	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	13	99	18	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	13	100	18	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	13	101	18	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	13	102	18	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	13	103	18	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	13	104	18	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
Idle	13	105	18	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	13	106	18	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	13	107	18	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	13	108	18	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	13	109	18	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	13	110	18	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	13	111	18	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	13	37	18	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
TRU	7	98	19	1	TRU	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
TRU	7	99	19	2	TRU	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
TRU	7	100	19	3	TRU	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
TRU	7	101	19	4	TRU	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
TRU	7	102	19	5	TRU	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
TRU	7	103	19	6	TRU	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
TRU	7	104	19	7	TRU	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
TRU	7	105	19	8	TRU	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
TRU	7	106	19	9	TRU	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
TRU	7	107	19	10	TRU	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
TRU	7	108	19	11	TRU	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
TRU	7	109	19	12	TRU	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
TRU	7	110	19	13	TRU	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
TRU	7	111	19	14	TRU	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
TRU	7	47	19	15	TRU	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1

	Daily Trips				
	0				
	Passenger Vehicles	2-Axle Trks	3-Axle Trks	4-Axle Trks	Total
Percentage	55.3%	15.5%	4.9%	24.3%	100%
# Daily Vehicles	0.00	0.00	0.00	0.00	0
# Annual Vehicles	0	0	0	0	0

Truck Travel

Onsite Truck Travel Emissions			
Category	# of Trucks / Yr	% of Total	DPM EF (lb/Mile)
2-Axle Trks	0	#DIV/0!	0.00E+00
3-Axle Trks	0	#DIV/0!	0.00E+00
4-Axle Trks	0	#DIV/0!	0.00E+00
Total	0	#DIV/0!	---

DPM Lbs/ Yr							Total
Distance (m)	1	0	0	0	0	0	1
5	0%	100%	0%	0%	0%	0%	100%
2-Axle Trks	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3-Axle Trks	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4-Axle Trks	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Offsite Truck Travel Emissions			
Category	# of Trucks / Yr	% of Total	DPM EF (lb/Mile)
2-Axle Trks	0	#DIV/0!	0.00E+00
3-Axle Trks	0	#DIV/0!	0.00E+00
4-Axle Trks	0	#DIV/0!	0.00E+00
Total	0	#DIV/0!	---

DPM Lbs/ Yr							Total
Gas Only	N	N	N	N	N	N	
Distance (m)	1	0	0	0	0	0	1
%	100%	100%	0%	0%	0%	0%	200%
2-Axle Trks	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3-Axle Trks	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4-Axle Trks	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Truck Idle

# of Idling Pts	1												
Truck Idling						Idle							Total
Category	# of Trucks / Yr	Idle EF (lbs / Event)	Time (Hr)	Lbs/ Yr	Lbs / Yr /Unit	0	0	0	0	0	0		0
2-Axle Trks	0	6.08E-05	0.25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00
3-Axle Trks	0	4.61E-05	0.25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00
4-Axle Trks	0	8.53E-05	0.25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Total	0	--	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00

TRUs

Percent of Trucks	0		# of Units	1	
Onsite TRU Emissions					
Category	Percentage	# of TRUs / Yr	Time (Hr)	*DPM EF (lbs/Event)	Emissions (lb/Yr)
2-Axle Trks	15.5	0	0.25	2.09E-03	0.00
3-Axle Trks	4.9	0			0.00
4-Axle Trks	24.3	0			0.00
Total	45	0	Emission/Unit		0.00

* TRU EF * BHP * Load factor * Time in hours

Vehicle Emissions

Vehicle Travel Percentage / Count			
Category	# of Vehicles / Yr	% LDA	% LDT
Passenger Vehicles	0	67%	32.72%
# Vehicles		0	0

Category	TOG Exhaust EF (lb/Mile)	TOG Runloss EF (lb/Mile)
LDA	2.85E-05	5.12E-04
LDT	6.73E-05	8.81E-04

CARB TOG Speciation Profile Run Exhaust			Lbs/mi/yr	
CAS#	Chemical Name	Fraction	LDA	LDT
75070	Acetaldehyde	2.80E-03	0.00E+00	0.00E+00
107028	Acrolein	1.30E-03	0.00E+00	0.00E+00
71432	Benzene	2.47E-02	0.00E+00	0.00E+00
106990	1,3-Butadiene	5.50E-03	0.00E+00	0.00E+00
100414	Ethylbenzene	1.05E-02	0.00E+00	0.00E+00
50000	Formaldehyde	1.58E-02	0.00E+00	0.00E+00
110543	Hexane	1.60E-02	0.00E+00	0.00E+00
67561	Methanol	1.20E-03	0.00E+00	0.00E+00
78933	Methyl Ethyl Ketone	2.00E-04	0.00E+00	0.00E+00
91203	Naphthalene	5.00E-04	0.00E+00	0.00E+00
115071	Propylene	3.06E-02	0.00E+00	0.00E+00
100425	Styrene	1.20E-03	0.00E+00	0.00E+00
108883	Toluene	5.76E-02	0.00E+00	0.00E+00
1330207	Xylenes	4.80E-02	0.00E+00	0.00E+00
9901	Diesel	1.38E-02	0.00E+00	0.00E+00

CARB TOG Speciation Profile Evaporative Losses			Lbs/mi/yr	
CAS#	Chemical Name	Fraction	LDA	LDT
71432	Benzene	3.600E-03	0.00E+00	0.00E+00
100414	Ethylbenzene	1.180E-03	0.00E+00	0.00E+00
110543	Hexane	1.540E-02	0.00E+00	0.00E+00
108883	Toluene	1.700E-02	0.00E+00	0.00E+00
1330207	Xylenes	5.780E-03	0.00E+00	0.00E+00

Vehicle Emissions Travel Summary

			Source Col	1		2		3		4		5		6		7		8		9		10		11		12			
Emissions Summary			Vehicles	0		0		0		0		0		0		0		0		0		0		0		0		Total Percentage	Total Distance
			Cars	0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%			
				50.00%		0.00%		0.00%		0.00%		0.00%		0.00%		50.00%		0.00%		0.00%		0.00%		0.00%		0.00%		100.00%	2
			Trucks	0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%			
				0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%			
CAS#	Chemical Name	Lbs/mi/Hr	Lbs/mi/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr	Lbs/ Hr	Lbs/ Yr
75070	Acetaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
107028	Acrolein	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
71432	Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
106990	1,3-Butadiene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
100414	Ethylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50000	Formaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
110543	Hexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
67561	Methanol	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
78933	Methyl Ethyl Ketone	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
91203	Naphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
115071	Propylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
100425	Styrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
108883	Toluene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1330207	Xylenes	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9901	Diesel	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

	Model Source	Source Col	Dat Col		Col	Row	CAS#	Chemical Name	Pol Count	Source Count
1	0	1	8	1	8	98	75070	Acetaldehyde	15	19
2	0	2	10	2	10	99	107028	Acrolein		
3	0	3	12	3	12	100	71432	Benzene		
4	0	4	14	4	14	101	106990	1-3,Butadiene		
5	0	5	16	5	16	102	100414	Ethylbenzene		
6	0	6	18	6	18	103	50000	Formaldehyde		
7	0	7	20	7	20	104	110543	Hexane		
8	0	8	22	8	22	105	67561	Methanol		
9	0	9	24	9	24	106	78933	Methyl Ethyl Ketone		
10	0	10	26	10	26	107	91203	Naphthalene		
11	0	11	28	11	28	108	115071	Propylene		
12	0	12	30	12	30	109	100425	Styrene		
13	Idle	Idle1	8	13	8	110	108883	Toluene		
14	0	Idle1	9	14	8	111	1330207	Xylenes		
15	0	Idle1	10	15	8	112	9901	Diesel		
16	0	Idle1	11	16	8					
17	0	Idle1	12	17	8	37		Idle		
18	0	Idle1	13	18	7	47		TRU		
19	TRU	TRU	7	19						
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1	8	98	1	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
1	8	99	1	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
1	8	100	1	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
1	8	101	1	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
1	8	102	1	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
1	8	103	1	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
1	8	104	1	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
1	8	105	1	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
1	8	106	1	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
1	8	107	1	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
1	8	108	1	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
1	8	109	1	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
1	8	110	1	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
1	8	111	1	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
1	8	112	1	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
2	10	98	2	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
2	10	99	2	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
2	10	100	2	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
2	10	101	2	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
2	10	102	2	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
2	10	103	2	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
2	10	104	2	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
2	10	105	2	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
2	10	106	2	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
2	10	107	2	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
2	10	108	2	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
2	10	109	2	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
2	10	110	2	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
2	10	111	2	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
2	10	112	2	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
3	12	98	3	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
3	12	99	3	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
3	12	100	3	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
3	12	101	3	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
3	12	102	3	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
3	12	103	3	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
3	12	104	3	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
3	12	105	3	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
3	12	106	3	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
3	12	107	3	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
3	12	108	3	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
3	12	109	3	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
3	12	110	3	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
3	12	111	3	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
3	12	112	3	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
4	14	98	4	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
4	14	99	4	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
4	14	100	4	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
4	14	101	4	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
4	14	102	4	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
4	14	103	4	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
4	14	104	4	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
4	14	105	4	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
4	14	106	4	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
4	14	107	4	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
4	14	108	4	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
4	14	109	4	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
4	14	110	4	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
4	14	111	4	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
4	14	112	4	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
5	16	98	5	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
5	16	99	5	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
5	16	100	5	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
5	16	101	5	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
5	16	102	5	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
5	16	103	5	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
5	16	104	5	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
5	16	105	5	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
5	16	106	5	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
5	16	107	5	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
5	16	108	5	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
5	16	109	5	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
5	16	110	5	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
5	16	111	5	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
5	16	112	5	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
6	18	98	6	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
6	18	99	6	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
6	18	100	6	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
6	18	101	6	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
6	18	102	6	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
6	18	103	6	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
6	18	104	6	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
6	18	105	6	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
6	18	106	6	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
6	18	107	6	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
6	18	108	6	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
6	18	109	6	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
6	18	110	6	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
6	18	111	6	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
6	18	112	6	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
7	20	98	7	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
7	20	99	7	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
7	20	100	7	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
7	20	101	7	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
7	20	102	7	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
7	20	103	7	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
7	20	104	7	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
7	20	105	7	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
7	20	106	7	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
7	20	107	7	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
7	20	108	7	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
7	20	109	7	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
7	20	110	7	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
7	20	111	7	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
7	20	112	7	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
8	22	98	8	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
8	22	99	8	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
8	22	100	8	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
8	22	101	8	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
8	22	102	8	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
8	22	103	8	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
8	22	104	8	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
8	22	105	8	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
8	22	106	8	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
8	22	107	8	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
8	22	108	8	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
8	22	109	8	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
8	22	110	8	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
8	22	111	8	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
8	22	112	8	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
9	24	98	9	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
9	24	99	9	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
9	24	100	9	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
9	24	101	9	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
9	24	102	9	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
9	24	103	9	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
9	24	104	9	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
9	24	105	9	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
9	24	106	9	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
9	24	107	9	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
9	24	108	9	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
9	24	109	9	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
9	24	110	9	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
9	24	111	9	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
9	24	112	9	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
10	26	98	10	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
10	26	99	10	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
10	26	100	10	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
10	26	101	10	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
10	26	102	10	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
10	26	103	10	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
10	26	104	10	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
10	26	105	10	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
10	26	106	10	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
10	26	107	10	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
10	26	108	10	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1

10	26	109	10	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
10	26	110	10	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
10	26	111	10	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
10	26	112	10	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
11	28	98	11	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
11	28	99	11	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
11	28	100	11	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
11	28	101	11	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
11	28	102	11	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
11	28	103	11	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
11	28	104	11	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
11	28	105	11	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
11	28	106	11	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
11	28	107	11	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
11	28	108	11	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
11	28	109	11	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
11	28	110	11	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
11	28	111	11	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
11	28	112	11	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
12	30	98	12	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
12	30	99	12	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
12	30	100	12	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
12	30	101	12	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
12	30	102	12	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
12	30	103	12	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
12	30	104	12	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
12	30	105	12	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
12	30	106	12	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
12	30	107	12	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
12	30	108	12	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
12	30	109	12	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
12	30	110	12	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
12	30	111	12	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
12	30	112	12	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
Idle	8	98	13	1	Idle	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	8	99	13	2	Idle	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	8	100	13	3	Idle	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	8	101	13	4	Idle	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	8	102	13	5	Idle	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	8	103	13	6	Idle	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	8	104	13	7	Idle	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
Idle	8	105	13	8	Idle	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	8	106	13	9	Idle	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	8	107	13	10	Idle	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	8	108	13	11	Idle	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	8	109	13	12	Idle	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	8	110	13	13	Idle	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	8	111	13	14	Idle	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	8	37	13	15	Idle	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
Idle	9	98	14	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	9	99	14	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	9	100	14	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	9	101	14	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	9	102	14	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	9	103	14	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	9	104	14	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
Idle	9	105	14	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	9	106	14	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	9	107	14	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	9	108	14	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	9	109	14	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	9	110	14	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	9	111	14	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	9	37	14	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
Idle	10	98	15	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	10	99	15	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	10	100	15	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	10	101	15	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	10	102	15	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	10	103	15	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	10	104	15	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
Idle	10	105	15	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	10	106	15	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	10	107	15	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	10	108	15	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	10	109	15	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	10	110	15	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	10	111	15	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	10	37	15	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
Idle	11	98	16	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	11	99	16	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	11	100	16	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	11	101	16	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	11	102	16	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	11	103	16	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	11	104	16	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
Idle	11	105	16	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	11	106	16	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	11	107	16	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	11	108	16	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	11	109	16	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	11	110	16	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	11	111	16	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	11	37	16	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
Idle	12	98	17	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	12	99	17	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	12	100	17	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	12	101	17	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	12	102	17	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	12	103	17	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	12	104	17	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
Idle	12	105	17	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	12	106	17	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	12	107	17	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	12	108	17	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	12	109	17	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	12	110	17	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	12	111	17	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	12	37	17	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
Idle	13	98	18	1	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	13	99	18	2	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	13	100	18	3	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	13	101	18	4	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	13	102	18	5	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	13	103	18	6	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	13	104	18	7	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
Idle	13	105	18	8	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	13	106	18	9	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	13	107	18	10	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	13	108	18	11	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	13	109	18	12	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	13	110	18	13	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	13	111	18	14	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	13	37	18	15	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
TRU	7	98	19	1	TRU	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
TRU	7	99	19	2	TRU	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
TRU	7	100	19	3	TRU	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
TRU	7	101	19	4	TRU	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
TRU	7	102	19	5	TRU	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
TRU	7	103	19	6	TRU	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
TRU	7	104	19	7	TRU	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
TRU	7	105	19	8	TRU	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
TRU	7	106	19	9	TRU	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
TRU	7	107	19	10	TRU	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
TRU	7	108	19	11	TRU	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
TRU	7	109	19	12	TRU	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
TRU	7	110	19	13	TRU	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
TRU	7	111	19	14	TRU	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
TRU	7	47	19	15	TRU	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1

BLD_A	0	0	75070	Acetaldehyde	1	8.49E-03	2.83E-06	1
BLD_A	0	0	107028	Acrolein	1	3.94E-03	1.31E-06	1
BLD_A	0	0	71432	Benzene	1	8.58E-02	2.86E-05	1
BLD_A	0	0	106990	1-3,Butadiene	1	1.67E-02	5.56E-06	1
BLD_A	0	0	100414	Ethylbenzene	1	3.54E-02	1.18E-05	1
BLD_A	0	0	50000	Formaldehyde	1	4.79E-02	1.60E-05	1
BLD_A	0	0	110543	Hexane	1	9.52E-02	3.17E-05	1
BLD_A	0	0	67561	Methanol	1	3.64E-03	1.21E-06	1
BLD_A	0	0	78933	Methyl Ethyl Ketone	1	6.06E-04	2.02E-07	1
BLD_A	0	0	91203	Naphthalene	1	1.52E-03	5.05E-07	1
BLD_A	0	0	115071	Propylene	1	9.27E-02	3.09E-05	1
BLD_A	0	0	100425	Styrene	1	3.64E-03	1.21E-06	1
BLD_A	0	0	108883	Toluene	1	2.26E-01	7.54E-05	1
BLD_A	0	0	1330207	Xylenes	1	1.63E-01	5.43E-05	1
BLD_A	0	0	9901	Diesel	1	2.54E+00	7.46E-04	1
BLD_B	0	0	75070	Acetaldehyde	1	8.49E-03	2.83E-06	1
BLD_B	0	0	107028	Acrolein	1	3.94E-03	1.31E-06	1
BLD_B	0	0	71432	Benzene	1	8.58E-02	2.86E-05	1
BLD_B	0	0	106990	1-3,Butadiene	1	1.67E-02	5.56E-06	1
BLD_B	0	0	100414	Ethylbenzene	1	3.54E-02	1.18E-05	1
BLD_B	0	0	50000	Formaldehyde	1	4.79E-02	1.60E-05	1
BLD_B	0	0	110543	Hexane	1	9.52E-02	3.17E-05	1
BLD_B	0	0	67561	Methanol	1	3.64E-03	1.21E-06	1
BLD_B	0	0	78933	Methyl Ethyl Ketone	1	6.06E-04	2.02E-07	1
BLD_B	0	0	91203	Naphthalene	1	1.52E-03	5.05E-07	1
BLD_B	0	0	115071	Propylene	1	9.27E-02	3.09E-05	1
BLD_B	0	0	100425	Styrene	1	3.64E-03	1.21E-06	1
BLD_B	0	0	108883	Toluene	1	2.26E-01	7.54E-05	1
BLD_B	0	0	1330207	Xylenes	1	1.63E-01	5.43E-05	1
BLD_B	0	0	9901	Diesel	1	2.55E+00	7.46E-04	1
BLD_C	0	0	75070	Acetaldehyde	1	8.80E-03	2.93E-06	1
BLD_C	0	0	107028	Acrolein	1	4.08E-03	1.36E-06	1
BLD_C	0	0	71432	Benzene	1	8.89E-02	2.96E-05	1
BLD_C	0	0	106990	1-3,Butadiene	1	1.73E-02	5.76E-06	1
BLD_C	0	0	100414	Ethylbenzene	1	3.67E-02	1.22E-05	1
BLD_C	0	0	50000	Formaldehyde	1	4.96E-02	1.65E-05	1
BLD_C	0	0	110543	Hexane	1	9.87E-02	3.29E-05	1
BLD_C	0	0	67561	Methanol	1	3.77E-03	1.26E-06	1
BLD_C	0	0	78933	Methyl Ethyl Ketone	1	6.28E-04	2.09E-07	1
BLD_C	0	0	91203	Naphthalene	1	1.57E-03	5.24E-07	1
BLD_C	0	0	115071	Propylene	1	9.61E-02	3.20E-05	1
BLD_C	0	0	100425	Styrene	1	3.77E-03	1.26E-06	1
BLD_C	0	0	108883	Toluene	1	2.34E-01	7.81E-05	1
BLD_C	0	0	1330207	Xylenes	1	1.69E-01	5.63E-05	1
BLD_C	0	0	9901	Diesel	1	2.62E+00	7.73E-04	1
BLD_D	0	0	75070	Acetaldehyde	1	1.32E-02	4.39E-06	1

BLD_D	0	0	107028	Acrolein	1	6.12E-03	2.04E-06	1
BLD_D	0	0	71432	Benzene	1	1.33E-01	4.44E-05	1
BLD_D	0	0	106990	1-3,Butadiene	1	2.59E-02	8.63E-06	1
BLD_D	0	0	100414	Ethylbenzene	1	5.50E-02	1.83E-05	1
BLD_D	0	0	50000	Formaldehyde	1	7.43E-02	2.48E-05	1
BLD_D	0	0	110543	Hexane	1	1.48E-01	4.93E-05	1
BLD_D	0	0	67561	Methanol	1	5.65E-03	1.88E-06	1
BLD_D	0	0	78933	Methyl Ethyl Ketone	1	9.41E-04	3.14E-07	1
BLD_D	0	0	91203	Naphthalene	1	2.35E-03	7.84E-07	1
BLD_D	0	0	115071	Propylene	1	1.44E-01	4.80E-05	1
BLD_D	0	0	100425	Styrene	1	5.65E-03	1.88E-06	1
BLD_D	0	0	108883	Toluene	1	3.51E-01	1.17E-04	1
BLD_D	0	0	1330207	Xylenes	1	2.53E-01	8.44E-05	1
BLD_D	0	0	9901	Diesel	1	1.79E+00	3.92E-04	1
0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
HARDT_IN	0	0	75070	Acetaldehyde	1	4.26E-03	1.42E-06	1
HARDT_IN	0	0	107028	Acrolein	1	1.98E-03	6.60E-07	1
HARDT_IN	0	0	71432	Benzene	1	4.31E-02	1.44E-05	1

HARDT_IN	0	0	106990	1-3,Butadiene	1	8.37E-03	2.79E-06	1
HARDT_IN	0	0	100414	Ethylbenzene	1	1.78E-02	5.93E-06	1
HARDT_IN	0	0	50000	Formaldehyde	1	2.41E-02	8.02E-06	1
HARDT_IN	0	0	110543	Hexane	1	4.78E-02	1.59E-05	1
HARDT_IN	0	0	67561	Methanol	1	1.83E-03	6.09E-07	1
HARDT_IN	0	0	78933	Methyl Ethyl Ketone	1	3.05E-04	1.02E-07	1
HARDT_IN	0	0	91203	Naphthalene	1	7.61E-04	2.54E-07	1
HARDT_IN	0	0	115071	Propylene	1	4.66E-02	1.55E-05	1
HARDT_IN	0	0	100425	Styrene	1	1.83E-03	6.09E-07	1
HARDT_IN	0	0	108883	Toluene	1	1.14E-01	3.79E-05	1
HARDT_IN	0	0	1330207	Xylenes	1	8.19E-02	2.73E-05	1
HARDT_IN	0	0	9901	Diesel	1	1.33E+00	3.75E-04	1
HARDT_OT	0	0	75070	Acetaldehyde	1	4.26E-03	1.42E-06	1
HARDT_OT	0	0	107028	Acrolein	1	1.98E-03	6.60E-07	1
HARDT_OT	0	0	71432	Benzene	1	4.31E-02	1.44E-05	1
HARDT_OT	0	0	106990	1-3,Butadiene	1	8.37E-03	2.79E-06	1
HARDT_OT	0	0	100414	Ethylbenzene	1	1.78E-02	5.93E-06	1
HARDT_OT	0	0	50000	Formaldehyde	1	2.41E-02	8.02E-06	1
HARDT_OT	0	0	110543	Hexane	1	4.78E-02	1.59E-05	1
HARDT_OT	0	0	67561	Methanol	1	1.83E-03	6.09E-07	1
HARDT_OT	0	0	78933	Methyl Ethyl Ketone	1	3.05E-04	1.02E-07	1
HARDT_OT	0	0	91203	Naphthalene	1	7.61E-04	2.54E-07	1
HARDT_OT	0	0	115071	Propylene	1	4.66E-02	1.55E-05	1
HARDT_OT	0	0	100425	Styrene	1	1.83E-03	6.09E-07	1
HARDT_OT	0	0	108883	Toluene	1	1.14E-01	3.79E-05	1
HARDT_OT	0	0	1330207	Xylenes	1	8.19E-02	2.73E-05	1
HARDT_OT	0	0	9901	Diesel	1	1.30E+00	3.75E-04	1
BRIER_IN	0	0	75070	Acetaldehyde	1	1.11E-03	3.71E-07	1
BRIER_IN	0	0	107028	Acrolein	1	5.17E-04	1.72E-07	1
BRIER_IN	0	0	71432	Benzene	1	1.13E-02	3.75E-06	1
BRIER_IN	0	0	106990	1-3,Butadiene	1	2.19E-03	7.29E-07	1
BRIER_IN	0	0	100414	Ethylbenzene	1	4.65E-03	1.55E-06	1
BRIER_IN	0	0	50000	Formaldehyde	1	6.29E-03	2.10E-06	1
BRIER_IN	0	0	110543	Hexane	1	1.25E-02	4.16E-06	1
BRIER_IN	0	0	67561	Methanol	1	4.77E-04	1.59E-07	1
BRIER_IN	0	0	78933	Methyl Ethyl Ketone	1	7.96E-05	2.65E-08	1
BRIER_IN	0	0	91203	Naphthalene	1	1.99E-04	6.63E-08	1
BRIER_IN	0	0	115071	Propylene	1	1.22E-02	4.06E-06	1
BRIER_IN	0	0	100425	Styrene	1	4.77E-04	1.59E-07	1
BRIER_IN	0	0	108883	Toluene	1	2.97E-02	9.89E-06	1
BRIER_IN	0	0	1330207	Xylenes	1	2.14E-02	7.13E-06	1
BRIER_IN	0	0	9901	Diesel	1	3.24E-01	9.79E-05	1
BRIER_OT	0	0	75070	Acetaldehyde	1	1.11E-03	3.71E-07	1
BRIER_OT	0	0	107028	Acrolein	1	5.17E-04	1.72E-07	1
BRIER_OT	0	0	71432	Benzene	1	1.13E-02	3.75E-06	1
BRIER_OT	0	0	106990	1-3,Butadiene	1	2.19E-03	7.29E-07	1
BRIER_OT	0	0	100414	Ethylbenzene	1	4.65E-03	1.55E-06	1

BRIER_OT	0	0	50000	Formaldehyde	1	6.29E-03	2.10E-06	1
BRIER_OT	0	0	110543	Hexane	1	1.25E-02	4.16E-06	1
BRIER_OT	0	0	67561	Methanol	1	4.77E-04	1.59E-07	1
BRIER_OT	0	0	78933	Methyl Ethyl Ketone	1	7.96E-05	2.65E-08	1
BRIER_OT	0	0	91203	Naphthalene	1	1.99E-04	6.63E-08	1
BRIER_OT	0	0	115071	Propylene	1	1.22E-02	4.06E-06	1
BRIER_OT	0	0	100425	Styrene	1	4.77E-04	1.59E-07	1
BRIER_OT	0	0	108883	Toluene	1	2.97E-02	9.89E-06	1
BRIER_OT	0	0	1330207	Xylenes	1	2.14E-02	7.13E-06	1
BRIER_OT	0	0	9901	Diesel	1	3.43E-01	9.79E-05	1
OUT	0	0	75070	Acetaldehyde	1	9.74E-03	3.25E-06	1
OUT	0	0	107028	Acrolein	1	4.52E-03	1.51E-06	1
OUT	0	0	71432	Benzene	1	9.84E-02	3.28E-05	1
OUT	0	0	106990	1-3,Butadiene	1	1.91E-02	6.38E-06	1
OUT	0	0	100414	Ethylbenzene	1	4.06E-02	1.35E-05	1
OUT	0	0	50000	Formaldehyde	1	5.49E-02	1.83E-05	1
OUT	0	0	110543	Hexane	1	1.09E-01	3.64E-05	1
OUT	0	0	67561	Methanol	1	4.17E-03	1.39E-06	1
OUT	0	0	78933	Methyl Ethyl Ketone	1	6.95E-04	2.32E-07	1
OUT	0	0	91203	Naphthalene	1	1.74E-03	5.80E-07	1
OUT	0	0	115071	Propylene	1	1.06E-01	3.55E-05	1
OUT	0	0	100425	Styrene	1	4.17E-03	1.39E-06	1
OUT	0	0	108883	Toluene	1	2.59E-01	8.65E-05	1
OUT	0	0	1330207	Xylenes	1	1.87E-01	6.23E-05	1
OUT	0	0	9901	Diesel	1	2.93E+00	8.56E-04	1
IN	0	0	75070	Acetaldehyde	1	9.74E-03	3.25E-06	1
IN	0	0	107028	Acrolein	1	4.52E-03	1.51E-06	1
IN	0	0	71432	Benzene	1	9.84E-02	3.28E-05	1
IN	0	0	106990	1-3,Butadiene	1	1.91E-02	6.38E-06	1
IN	0	0	100414	Ethylbenzene	1	4.06E-02	1.35E-05	1
IN	0	0	50000	Formaldehyde	1	5.49E-02	1.83E-05	1
IN	0	0	110543	Hexane	1	1.09E-01	3.64E-05	1
IN	0	0	67561	Methanol	1	4.17E-03	1.39E-06	1
IN	0	0	78933	Methyl Ethyl Ketone	1	6.95E-04	2.32E-07	1
IN	0	0	91203	Naphthalene	1	1.74E-03	5.80E-07	1
IN	0	0	115071	Propylene	1	1.06E-01	3.55E-05	1
IN	0	0	100425	Styrene	1	4.17E-03	1.39E-06	1
IN	0	0	108883	Toluene	1	2.59E-01	8.65E-05	1
IN	0	0	1330207	Xylenes	1	1.87E-01	6.23E-05	1
IN	0	0	9901	Diesel	1	3.02E+00	8.56E-04	1
Idle	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
Idle	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
Idle	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
Idle	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
Idle	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
Idle	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
Idle	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1

Idle	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
Idle	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
Idle	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
Idle	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
Idle	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
Idle	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
Idle	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
Idle	0	0	9901	Diesel	1	1.03E-01	1.03E-01	1
0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1

	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
	0	0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
	0	0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
	0	0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
	0	0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
	0	0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
	0	0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
	0	0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
	0	0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
	0	0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
	0	0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
	0	0	0	115071	Propylene	1	0.00E+00	0.00E+00	1
	0	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
	0	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
	0	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
	0	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1
TRU		0	0	75070	Acetaldehyde	1	0.00E+00	0.00E+00	1
TRU		0	0	107028	Acrolein	1	0.00E+00	0.00E+00	1
TRU		0	0	71432	Benzene	1	0.00E+00	0.00E+00	1
TRU		0	0	106990	1-3,Butadiene	1	0.00E+00	0.00E+00	1
TRU		0	0	100414	Ethylbenzene	1	0.00E+00	0.00E+00	1
TRU		0	0	50000	Formaldehyde	1	0.00E+00	0.00E+00	1
TRU		0	0	110543	Hexane	1	0.00E+00	0.00E+00	1
TRU		0	0	67561	Methanol	1	0.00E+00	0.00E+00	1
TRU		0	0	78933	Methyl Ethyl Ketone	1	0.00E+00	0.00E+00	1
TRU		0	0	91203	Naphthalene	1	0.00E+00	0.00E+00	1
TRU		0	0	115071	Propylene	1	0.00E+00	0.00E+00	1

TRU	0	0	100425	Styrene	1	0.00E+00	0.00E+00	1
TRU	0	0	108883	Toluene	1	0.00E+00	0.00E+00	1
TRU	0	0	1330207	Xylenes	1	0.00E+00	0.00E+00	1
TRU	0	0	9901	Diesel	1	0.00E+00	0.00E+00	1

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	PM2.5_RUNEX	PM10_RUNEX
San Bernardino	2024	HHDT	Aggregate	5	Diesel	0.011565138	0.012088062
San Bernardino	2024	HHDT	Aggregate	10	Diesel	0.011194969	0.011701156
San Bernardino	2024	HHDT	Aggregate	15	Diesel	0.008744462	0.009139848
					Average	0.010501523	0.010976355
San Bernardino	2024	LDT1	Aggregate	5	Diesel	0.989240237	1.033969291
San Bernardino	2024	LDT1	Aggregate	10	Diesel	0.675824786	0.706382583
San Bernardino	2024	LDT1	Aggregate	15	Diesel	0.490762276	0.512952368
San Bernardino	2024	LDT2	Aggregate	5	Diesel	0.015536399	0.016238886
San Bernardino	2024	LDT2	Aggregate	10	Diesel	0.012223083	0.012775757
San Bernardino	2024	LDT2	Aggregate	15	Diesel	0.009945228	0.010394907
					Average	0.365588668	0.382118965
San Bernardino	2024	MHDT	Aggregate	5	Diesel	0.032569873	0.034042538
San Bernardino	2024	MHDT	Aggregate	10	Diesel	0.025986547	0.027161544
San Bernardino	2024	MHDT	Aggregate	15	Diesel	0.017076185	0.017848294
					Average	0.025210868	0.026350792

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Bernardino
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, g/mile for RUNEX, PMBW and PMTW, mph for Speed, kWh/mile for Energy Consumption, gallon/mile for Fuel Consumption. PHEV calculated based on total VMT.

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Total VM	CVMT	EVMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX	NH3_RUNE	PM10_PM	PM2.5_PM	Fuel Consu	Energy Consumption
San Bernardino	2024	HHDT	Aggregate	5	Diesel	20.55	20.55337004	0	11.05847562	0.011565138	0.012088062	3076.293505	0.005742093	0.484671294	0.123625687	0.140738435	1.147396314	0.02913066	0.218767	0.137524	0.048133	0.30292	0
San Bernardino	2024	HHDT	Aggregate	10	Diesel	360.2	360.1635112	0	8.245010184	0.011194969	0.011701156	2794.59562	0.003493283	0.440289678	0.075209415	0.085620194	0.711183774	0.026463149	0.213824	0.139282	0.048749	0.275181	0
San Bernardino	2024	HHDT	Aggregate	15	Diesel	863.8	863.7631768	0	5.417974186	0.008744462	0.009139848	2299.269783	0.001771539	0.362250891	0.038140743	0.043420332	0.396857535	0.02177271	0.214131	0.137357	0.048075	0.226407	0
San Bernardino	2024	LDA	Aggregate	5	Diesel	10.18	10.18274501	0	0.281177537	0.071772124	0.075017341	603.6639859	0.013432514	0.095107507	0.289194128	0.329228288	4.429922519	0.005720023	0.0031	0.00607	0.002124	0.059442	0
San Bernardino	2024	LDA	Aggregate	10	Diesel	64.82	64.81666426	0	0.239662077	0.045008287	0.047043362	498.4077074	0.009469453	0.078524337	0.203871755	0.232094439	3.288613674	0.004722666	0.0031	0.007494	0.002623	0.049078	0
San Bernardino	2024	LDA	Aggregate	15	Diesel	161.5	161.4918013	0	0.205951314	0.033221303	0.034723423	409.4362629	0.005178581	0.06450685	0.111491808	0.126926011	1.679982599	0.003879617	0.0031	0.008918	0.003121	0.040317	0
San Bernardino	2024	LDT1	Aggregate	5	Diesel	0.062	0.062329908	0	1.115068791	0.989240237	1.033969291	1051.78052	0.058465553	0.165708449	1.258728936	1.432979208	4.802901937	0.009966155	0.0031	0.009743	0.00341	0.103568	0
San Bernardino	2024	LDT1	Aggregate	10	Diesel	0.328	0.328280501	0	1.141392714	0.675824786	0.706382583	879.6055595	0.040387184	0.138582214	0.869512301	0.989881946	3.483026698	0.00833471	0.0031	0.012105	0.004237	0.086614	0
San Bernardino	2024	LDT1	Aggregate	15	Diesel	0.795	0.794755093	0	1.193096606	0.490762276	0.512952368	728.533143	0.029338109	0.114780693	0.631632204	0.719071271	2.606164351	0.006903222	0.0031	0.014489	0.005071	0.071738	0
San Bernardino	2024	LDT2	Aggregate	5	Diesel	5.781	5.780713311	0	0.168209395	0.015536399	0.016238886	770.2674895	0.012322761	0.121355957	0.26530179	0.30202845	2.533365142	0.007298676	0.0031	0.008004	0.002802	0.075847	0
San Bernardino	2024	LDT2	Aggregate	10	Diesel	38.59	38.59126133	0	0.141334908	0.012223083	0.012775757	643.086339	0.009131991	0.101318515	0.196606385	0.223823298	1.854533263	0.00609357	0.0031	0.009895	0.003463	0.063324	0
San Bernardino	2024	LDT2	Aggregate	15	Diesel	96.76	96.75797075	0	0.101404044	0.009945228	0.010394907	532.6593477	0.004526247	0.083920697	0.097447423	0.110937413	0.912236324	0.005047218	0.0031	0.011837	0.004143	0.05245	0
San Bernardino	2024	LHDT1	Aggregate	5	Diesel	10.05	10.05351686	0	2.625959943	0.107062208	0.111903086	1194.05254	0.022626272	0.188123464	0.487130315	0.554565477	1.565507956	0.011314255	0.154235	0.078	0.0273	0.117577	0
San Bernardino	2024	LHDT1	Aggregate	10	Diesel	151	151.0037901	0	2.241636981	0.080686677	0.08433497	1030.253306	0.017153198	0.162316828	0.36929826	0.420421516	1.14848051	0.009762174	0.160593	0.078	0.0273	0.101448	0
San Bernardino	2024	LHDT1	Aggregate	15	Diesel	406	406.0320882	0	2.039613111	0.06497044	0.067908115	865.1351526	0.013951334	0.136302396	0.300364002	0.341944447	0.902026452	0.008197595	0.16226	0.078	0.0273	0.085189	0
San Bernardino	2024	LHDT2	Aggregate	5	Diesel	4.403	4.403355673	0	2.294819552	0.091933802	0.096090641	1420.074275	0.019224368	0.22373328	0.41388933	0.471185485	1.313481136	0.013455925	0.169846	0.091	0.03185	0.139833	0
San Bernardino	2024	LHDT2	Aggregate	10	Diesel	65.24	65.23609461	0	1.965001653	0.072717207	0.076005157	1231.727147	0.015411398	0.194059114	0.331798321	0.37773033	1.010467066	0.011671241	0.173215	0.091	0.03185	0.121287	0
San Bernardino	2024	LHDT2	Aggregate	15	Diesel	174.8	174.7762188	0	1.757012842	0.059710324	0.062410159	1049.6505	0.01286676	0.165372864	0.277013777	0.315361768	0.807727483	0.009945972	0.174114	0.091	0.03185	0.103358	0
San Bernardino	2024	MHDT	Aggregate	5	Diesel	63.72	63.7196644	0	3.289700857	0.032569873	0.034042538	2410.410956	0.008336883	0.379761228	0.179490809	0.204336623	0.470832404	0.02282515	0.215256	0.061496	0.021524	0.237351	0
San Bernardino	2024	MHDT	Aggregate	10	Diesel	2294	2293.79086	0	2.483978743	0.025986547	0.027161544	1997.307216	0.005547204	0.314676565	0.119429783	0.135961717	0.327631472	0.018913305	0.215426	0.061496	0.021524	0.196673	0
San Bernardino	2024	MHDT	Aggregate	15	Diesel	2014	2014.337503	0	1.740762394	0.017076185	0.017848294	1570.574498	0.002806433	0.247444652	0.060421742	0.068785554	0.206938365	0.014872401	0.215072	0.061496	0.021524	0.154653	0

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	Diesel %	Trips	PM2.5_RUNEX	PM10_RUNEX	TOG_RUNEX	TOG_RUNLOSS
San Bernardino	2024	LDA	Aggregate	Aggregate	Gasoline	768865.9289	33024787.61	33024787.61	0%	3568324.635	0.001173493	0.00127628	0.012934215	0.232343076
San Bernardino	2024	LDA	Aggregate	Aggregate	Diesel	2082.571633	71739.62549	71739.62549	63%	8899.208594	0.016882337	0.017645682	0.030910941	0
							33096527.24	67.3%						
San Bernardino	2024	LDT1	Aggregate	Aggregate	Gasoline	71959.12939	2460565.057	2460565.057	0%	309662.07	0.002064499	0.00224527	0.060674402	0.721597526
San Bernardino	2024	LDT1	Aggregate	Aggregate	Diesel	26.71801826	374.0512762	374.0512762	0.3%	76.14596219	0.239547171	0.250378431	0.348963609	0
San Bernardino	2024	LDT2	Aggregate	Aggregate	Gasoline	330380.251	13590073.66	13590073.66	0%	1543019.585	0.001197678	0.001302579	0.017919217	0.244850621
San Bernardino	2024	LDT2	Aggregate	Aggregate	Diesel	956.1891951	42432.4165	42432.4165	37%	4611.071679	0.004976206	0.005201208	0.013976167	0
							16093445.18	32.7%	114546			Gasoline Avg EF	0.030509278	0.399597074
								Diesel Wt EF	0.013795746					

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	Trips	PM2.5_RUNEX	PM2.5_IDLEX	PM10_RUNEX	PM10_IDLEX
San Bernardino	2024	HHDT	Aggregate	Aggregate	Diesel	27173.91352	4430763.767	4430763.767	485811.7149	0.030334013	0.037015464	0.031705582	0.038689139
San Bernardino	2024	MHDT	Aggregate	Aggregate	Diesel	17660.92816	809994.4973	809994.4973	219343.2888	0.01022919	0.020016746	0.010691708	0.020921814
San Bernardino	2024	LHDT1	Aggregate	Aggregate	Diesel	22449.99827	845078.5311	845078.5311	282392.7362	0.027876037	0.026461321	0.029136468	0.027657785
San Bernardino	2024	LHDT2	Aggregate	Aggregate	Diesel	9557.327727	367558.7935	367558.7935	120219.1597	0.024696826	0.026315952	0.025813507	0.027505843
									Average	0.026286432	0.026388637	0.027474987	0.027581814

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Bernardino
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Yea	Vehicle C	Model Ye	Speed	Fuel	Populatio	Total VMT	CVMT	EVMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RUNEX	PM2.5_IDLEX	PM2.5_STREX	PM2.5_PMTW	PM2.5_PMBW	PM10_RUNEX	PM10_IDLEX	PM10_STREX	PM10_PMTW	PM10_PMBW	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTSOAK	ROG_RUNLOSS	ROG_DIURN	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTSOAK	TOG_RUNLOSS	TOG_DIURN	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNEX	SOx_IDLEX	SOx_STREX
San Bern	2024	HHDT	Aggregate	Aggregate	Gasoline	8.239703	379.7766158	379.7766158	0	164.859976	10.62124716	0	0.963164193	0.003738896	0	0.002086697	0.005000001	0.030450475	0.04006639	0	0.002269474	0.020000006	0.087001356	2262.980946	0	52.95423724	0.337131119	0	8.32767E-05	0.264997739	0	0.020812892	2.1567968	0	0.000042982	0.142965404	1.271509521	11.5240469	3.147192828	0	0.000470599	0.142965404	1.271509521	11.5240469	0.040247169	118.6559106	0	2.915895277	0.022371871	0	0.000523507
San Bern	2024	HHDT	Aggregate	Aggregate	Diesel	2717.91	4430763.767	4430763.767	0	485811.715	1.622971911	88.85366946	2.599613102	0.003334013	0.037015464	0	0.008904659	0.025391497	0.031705582	0.038689139	0	0.035618634	0.072546962	1558.041412	17260.03585	0	0.000598708	0.345528309	0	0.245470059	2.719325677	0	0.012890024	7.439129732	0	0	0	0	0.014674311	8.468882924	0	0	0	0	0.217832249	0.0521316	109.1591664	0	0.01475372	0.163442218	0
San Bern	2024	LDA	Aggregate	Aggregate	Gasoline	768865.9	3302478741	3302478741	0	3568324.63	0.04117725	0	0.248421871	0.001173493	0	0.001931958	0.002000001	0.003325126	0.00127628	0	0.00210118	0.008000002	0.006643216	283.7502931	0	69.83949618	0.003975646	0	0.069927997	0.004690407	0	0.033313961	0.008863922	0	0.031563987	0.091620237	0.232343076	1.590241709	0.012934215	0	0.341123349	0.091620237	0.232343076	1.590241709	0.034567926	0.754066577	0	3.047958052	0.002805161	0	0.006690435
San Bern	2024	LDA	Aggregate	Aggregate	Diesel	2082.572	71739.62549	71739.62549	0	8899.20859	0.21633028	0	0.016882337	0	0	0	0.002000001	0.002307152	0.017645682	0	0	0.008000002	0.006591863	240.961696	0	0	0.001261166	0	0	0.037963613	0	0	0.027152171	0	0	0	0	0.009019941	0	0	0	0	0	0.0031	0.329960113	0	0	0.002283235	0	0
San Bern	2024	LDT1	Aggregate	Aggregate	Gasoline	71959.13	2460565.057	2460565.057	0	309662.07	0.194733506	0	0.483699488	0.002064499	0	0.003329495	0.002000001	0.00278649	0.00224527	0	0.003620997	0.008000002	0.00796614	341.9089803	0	91.02059975	0.099238928	0	0.133045835	0.013236728	0	0.043205355	0.041586497	0	0.71146614	0.240433423	0.721597526	4.270636525	0.060674402	0	0.778964881	0.240433423	0.721597526	4.270636525	0.038055578	1.982779928	0	6.77248854	0.003380118	0	0.00089983
San Bern	2024	LDT1	Aggregate	Aggregate	Diesel	26.71802	374.0512762	374.0512762	0	76.145962	1.668277368	0	0	0.239547171	0	0	0.002000001	0.003025087	0.250378431	0	0	0.008000002	0.008643106	436.6034305	0	0	0.014327716	0	0	0.067211544	0	0	0.030639634	0	0	0	0	0.348963609	0	0	0	0	0	0.0031	1.976282139	0	0	0.004042284	0	0
San Bern	2024	LDT2	Aggregate	Aggregate	Gasoline	330380.3	3359007.66	3359007.66	0	154301.959	0.075731589	0	0.341335311	0.001197678	0	0.001946684	0.002000001	0.002654089	0.001302579	0	0.002117185	0.008000002	0.007583112	347.9635195	0	87.32334094	0.00312493	0	0.083501415	0.006354071	0	0.037763271	0.012280753	0	0.385674257	0.088834782	0.244850621	1.663403888	0.017919217	0	0.422264668	0.088834782	0.244850621	1.663403888	0.036544979	0.900710308	0	3.646232047	0.003439974	0	0.00086328
San Bern	2024	LDT2	Aggregate	Aggregate	Diesel	956.1892	42432.4165	42432.4165	0	4611.07168	0.051812604	0	0	0.004976206	0	0	0.002000001	0.002558996	0.005201208	0	0	0.008000002	0.007311417	311.192302	0	0	0.000570228	0	0	0.049028474	0	0	0.012276665	0	0	0	0	0.013976167	0	0	0	0	0	0.0031	0.116105784	0	0	0.002948705	0	0
San Bern	2024	LHDT1	Aggregate	Aggregate	Gasoline	30244.62	1118103.334	1118103.334	0	450599.705	0.250819585	0.037215659	0.648302078	0.001173786	0	0.000356069	0.002000001	0.007300008	0.0012766	0	0.000387257	0.008000002	0.078000022	630.838266	120.0988533	25.63008318	0.006429878	0.116421288	0.035503035	0.015141867	0.002998225	0.051094974	0.032260271	0.426127763	0.173000976	0.053801002	0.316852855	3.580168595	0.047074112	0.621870296	0.189414293	0.055801002	0.316852855	3.580168595	0.0448632	1.313972347	3.749133416	3.027265688	0.006236479	0.001187294	0.000253379
San Bern	2024	LHDT1	Aggregate	Aggregate	Diesel	22450	845078.5311	845078.5311	0	282392.736	2.032479164	2.124988843	0	0.027876037	0.026461321	0	0.003000001	0.027300008	0.029136468	0.027657585	0	0.012000003	0.078000022	492.0941273	134.1311993	0	0.005205531	0.005098128	0	0.007752963	0.021132425	0	0.011207202	0.109759705	0	0	0	0.015748126	0.388742312	0.090745076	0	0	0	0.015748126	0.388742312	0.090745076	0	0.004662842	0.001270961	0
San Bern	2024	LHDT2	Aggregate	Aggregate	Gasoline	4610.823	165460.8677	165460.8677	0	68694.389	0.165591994	0.037305173	0.657472905	0.000969834	0	0.000248738	0.002000001	0.031850009	0.001054783	0	0.000270525	0.008000002	0.091000026	708.5513053	139.1452945	25.56301654	0.003595753	0.117731192	0.03390627	0.010263473	0.003000151	0.051248672	0.016579406	0.427776091	0.164858192	0.048106503	0.259826345	3.093862384	0.024192631	0.624209867	0.180498969	0.048106503	0.259826345	3.093862384	0.044977641	0.854382028	3.763254476	2.934723364	0.007004751	0.001375593	0.000252716
San Bern	2024	LHDT2	Aggregate	Aggregate	Diesel	9557.328	367558.7935	367558.7935	0	120219.16	1.49603547	2.072484038	0	0.024696826	0.026315952	0	0.003000001	0.031850009	0.025813507	0.027505843	0	0.012000003	0.091000026	589.0746722	214.1172799	0	0.004435535	0.005099128	0	0.092808955	0.033734265	0	0.095494453	0.109759705	0	0	0	0.171554582	0.280819179	0.090745076	0	0.005581782	0.00202887	0
San Bern	2024	MHDT	Aggregate	Aggregate	Gasoline	2359.268	142286.4089	142286.4089	0	47204.2385	0.435279006	0.089192741	0.431880599	0.000904711	0	0.000481419	0.002000001	0.014754156	0.000983955	0	0.000523587	0.012000003	0.042154733	1638.586521	542.5283984	46.05139983	0.011119324	0.263617533	0.047763848	0.021996314	0.007617108	0.033601481	0.053864948	1.001827579	0.255784474	0.035805421	0.285935583	3.29476365	0.078599605	1.461864451	0.280051803	0.035805421	0.285935583	3.29476365	0.044974885	1.342243818	14.34679563	5.442807793	0.016199096	0.005363446	0.000455265
San Bern	2024	MHDT	Aggregate	Aggregate	Diesel	17660.93	809994.4973	809994.4973	0	219343.289	0.793489724	11.97664319	1.621157441	0.01022919	0.020016746	0	0.003000001	0.01482978	0.010691708	0.020921814	0	0.012000003	0.042370801	1083.730517	2163.544894	0	0.000667015	0.010136351	0	0.170742184	0.340867379	0	0.014360645	0.218232858	0	0	0	0.214242186	0.0606163	7.312794985	0	0.010262628	0.020487476	0

APPENDIX C

DETAILED ENERGY CALCULATIONS

Construction Off-Road Equipment										
Phase	**Off-Road Equipment Type**	**Amount**	**Usage Hour/Day**	**Total Usage Days**	**Total Usage Hours/Equipment**	**Horsepower**	**Load Factor**	**Total Usage Hours/ Equipment**	**Horsepower-Hour**	**Fuel Usage (gallons)**
Site Preparation	Rubber Tired Dozers	3	8	15	360	247	0.4	360	35,568.0	1,821.08
	Tractors/Loaders/Backhoes	4	8	15	480	97	0.37	480	17,227.2	882.03
Grading	Excavators	1	8	10	80	158	0.38	80	4,803.2	245.92
	Graders	1	8	10	80	187	0.41	80	6,133.6	314.04
	Rubber Tired Dozers	1	8	10	80	247	0.4	80	7,904.0	404.68
	Tractors/Loaders/Backhoes	3	8	10	240	97	0.37	240	8,613.6	441.02
Building Construction	Cranes	1	7	130	910	231	0.29	910	60,960.9	3,121.20
	Forklifts	3	8	130	3,120	89	0.2	3,120	55,536.0	2,843.44
	Generator Sets	1	8	130	1,040	84	0.74	1,040	64,646.4	3,309.90
	Tractors/Loaders/Backhoes	3	7	130	2,730	97	0.37	2,730	97,979.7	5,016.56
	Welders	1	8	130	1,040	46	0.45	1,040	21,528.0	1,102.23
Paving	Pavers	2	8	10	160	130	0.42	160	8,736.0	447.28
	Paving Equipment	2	8	10	160	132	0.36	160	7,603.2	389.28
	Rollers	2	8	10	160	80	0.38	160	4,864.0	249.04
Architectural Coating	Air Compressors	1	6	75	450	78	0.48	450	16,848.0	862.62
									Total	**21,450.33** Diesel

Construction Truck and Construction Worker Vehicle Fuel Efficiency				
		EMFAC 2021 Outputs		
Vehicle Type	Vehicle Class	Fuel Consumption (1,000 gallons/day)	VMT (miles/ day)	Fuel Efficency (miles/gallon)
Construction Truck	MHDT	90.87	820,207.1	9.0
	HHDT	718.82	4,470,291.5	6.2
	HHDT/MHDT	-	-	7.6
Construction Worker Vehicle	LDA	1,088.41	32,810,290.0	30.1
	LDT1	97.10	2,409,959.0	24.8
	LDT2	564.19	13,929,503.0	24.7
	Worker Mix	-	-	27.4

Notes:

[1] For construction trucks assumes 50 percent HHDT and 50 percent MHDT vehicles, consistent with assumptions in CalEEMod for hauling trucks. For construction worker vehicles assumes 50 percent LDA, 25 percent LDT1, and 25 percent LDT2 vehicles, consistent with assumptions in CalEEMod for worker vehicles.

[2] EMFAC2021 was run for San Bernardino County for the construction year 2025. Data was aggregated over all vehicle model years and speed bins.

[3] The fuel efficiency was calculated by dividing the VMT (miles/day) by the fuel consumption (gallons/day).

Construction Vehicle Fuel Use - Diesel Vehicles							
Phase	Trip Type	Total Trips	Trip Length (miles)	Total VMT	Diesel Fuel Effiency (miles/gallon)	Fuel Usage (gallons/year)	
Grading	Hauling	600.0	20.0	12,000.0	6.2	1,935.5	
Building Construction	Vendor	3,458.0	10.2	35,271.6	7.6	4,641.0	
					Total	**6,576.5**	Diesel

[1] Assumes 100 percent HHDT vehicles for haul trucks and 50 percent HHDT/50 percent MHDT vehicles for MHDT, consistent with assumptions in CalEEMod.

[2] EMFAC2021 was run for San Bernardino County for the construction year 2025. Data was aggregated over all vehicle model years and speed bins.

[3] The fuel efficiency was calculated by dividing the VMT (miles/day) by the fuel consumption (gallons/day).

Construction Worker Vehicle Fuel Use - Gasoline Vehicles								
Phase	Total One-Way Trips/Day	Total Days	Total Trips	Trip Length (miles)	Total VMT	Gasoline Fuel Effiency (miles/gallon)	Fuel Usage (gallons/year)	
Site Preparation	17.5	15	525.0	18.5	9,712.5	27.4	354.5	
Grading	15.0	10	300.0	18.5	5,550.0	27.4	202.6	
Building Construction	34.1	130	8,866.0	18.5	164,021.0	27.4	5,986.2	
Paving	15.0	10	300.0	18.5	5,550.0	27.4	202.6	
Architectural Coating	6.8	75	1,023.0	18.5	18,925.5	27.4	690.7	
						Total	**7,436.5**	Gas

Total Construction Gasoline Usage	7,436.46
Total Construction Diesel Usage	28,026.82

Proposed Project Operational Trips			
Vehicle Class	CalEEMod	Total Project Trips	Total Trips per Vehicle Class
LDA	0.5015	1,014.0	508.52
LDT1	0.0406	1,014.0	41.13
LDT2	0.2044	1,014.0	207.26
MDV	0.1541	1,014.0	156.26
LHD1	0.0289	1,014.0	29.29
LHD2	0.0079	1,014.0	7.96
MHD	0.0173	1,014.0	17.58
HHD	0.0176	1,014.0	17.85
OBUS	0.0006	1,014.0	0.63
UBUS	0.0003	1,014.0	0.32
MCY	0.0211	1,014.0	21.40
SBUS	0.0011	1,014.0	1.11
MH	0.0046	1,014.0	4.68

Proposed Project Operational Trips – Fuel Efficiency					
		EMFAC2021 Outputs1			
Fuel	Vehicle Class	Fleet Mix (%)2	Consumption (1,000 gallons/day)	VMT (miles/day)	Fuel Efficiency3 (miles/gallon)
Gas	LDA	0.54	1,088.41	32,810,290.00	30.15
	LDT1	0.04	97.10	2,409,959.00	24.82
	LDT2	0.23	564.19	13,929,503.00	24.69
	MDV	0.16	498.69	9,921,873.00	19.90
	LHD1	0.02	80.89	1,108,491.00	13.70
	MCY	0.00	5.45	226,907.60	41.64
	MH	0.00	11.08	53,536.53	4.83
	Fleet Mix	–	–	–	26.71
Diesel	LHD2	0.06	21.29	355,990.40	16.72
	MHDT	0.15	90.87	820,207.06	9.03
	HHDT	0.79	718.82	4,470,291.50	6.22
	Fleet Mix	–	–	–	7.29

Notes:

1 EMFAC2021 was run for San Bernardino County for the operational year 2025. Data was aggregated over all vehicle model years and speed bins.

2 Fleet mix is based on assumptions made in CalEEMod for the proposed project.

3 The fuel efficiency was calculated by dividing the VMT (miles/day) by the fuel consumption (gallons/day).

Proposed Project Operational Trips – Fuel Usage						
Land Use	Total Annual VMT2 (miles/year)	Fuel Type	Portion of Fleet3 (%)	VMT by Fuel Type (miles/year)	Fleet Mix Efficiency4 (miles/gallon)	Fuel Usage (gallons/ year)
Industrial Park	6,553,900.00	Gas	0.96	6,269,308.03	26.71	234,688.67
		Diesel	0.04	280,467.60	7.29	38,480.28
					Total Gasoline/year	**234,688.67**
					Total Diesel/year	**38,480.28**

Notes:

1 Calculated for operational year 2025 only. Future years will likely use less fuel due to more efficient cars.

2 Total VMT is based on project's trip generation and trip lengths.

3 Fleet distribution is based on EMFAC2021 output and CalEEMod assumptions.

4 Fuel efficiency is based on fuel consumption and VMT data from EMFAC2021 for San Bernardino County and total VMT.

Electricity Usage	
Electricity by Land Use	**kWh/year**
Industrial Park	1,417,268
Parking Lot	30,908
Total	**1,448,176**

Natural Gas Usage			
Natural Gas by Land Use	**kBTU/year**	**BTU/year**	**therms/year**
Industrial Park	2,228,404	2,228,404,000	22,289
Parking Lot	0	0	0
Total	**2,228,404**	**2,228,404,000**	**22,289**