



Ottawa Business Center

GREENHOUSE GAS ANALYSIS

CITY OF VICTORVILLE

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LIST OF ABBREVIATED TERMS

(1)	Reference
%	Percent
AB	Assembly Bill
AB 32	Global Warming Solutions Act of 2006
AB 1493	Pavley Fuel Efficiency Standards
AB 1881	California Water Conservation in Landscaping Act of 2006
APA	Administrative Procedure Act
AQIA	Air Quality Impact Analysis
BAU	Business As Usual
BSC	Building Standards Commission
CAA	Federal Clean Air Act
CalEEMod	California Emissions Estimator Model™
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGAPS	California LBNL GHG Analysis of Policies Spreadsheet
CALGreen	Californina Green Building Standards Code
CalRecycle	California's Department of Resources Recycling and Recovery
CalSTA	California State Transportation Agency
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resource Board
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFC	Chlorofluorocarbons
CH ₄	Methane
City	City of Victorville
CNRA	California Natural Resources Agency
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
Convention	United Nations Framework Convention on Climate Change
COP	UNCFCC Conference of the Parties

CPUC	California Public Utilities Commission
CTC	California Transportation Commission
DOF	Department of Finance
EPA	Environmental Protection Agency
FED	Functional Equivelent Document
GCC	Global Climate Change
Gg	Gigagram
GHG	Greenhouse Gas
GHGA	Greenhouse Gas Analysis
Gpd/acre	Gallons per Day per Acre
GO-Biz	Governor’s Office of Business and Economic Development
GWP	Global Warming Potential
H ₂ O	Water Vapor
HD	Heavy-Duty
HFC	Hydrofluorocarbons
I-15	Interstate 15
IBank	California Infrastructure and Economic Development Bank
IPCC	Intergovernmental Panel on Climate Change
IRP	Integrated Resource Planning
LBNL	Lawrence Berkeley National Laboratory
LCA	Life-Cycle Analysis
LCFS	Low Carbon Fuel Standard
MD	Medium-Duty
MDAQMD	Mojave Desert Air Quality Management District
MMT	Million Metric Tons
MMTCO ₂ e	Million Metric Ton of Carbon Dioxide Equivalent
MPG	Miles Per Gallon
MT	Metric Tons
MT/yr	Metric Tons per Year
MTCO ₂ e	Metric Ton of Carbon Dioxide Equivalent
MY	Model Year
N ₂ O	Nitrogen Dioxide
NDC	Nationally Determined Contributions
NHTSA	National Highway Traffic Safety Administration
NO _x	Oxides of Nitrogen
NF ₃	Nitrogen Trifluoride
OAL	Office of Administrative Law
Ordinance	Model Water Efficient Landscape Ordinance

OPR	Governor's Office of Planning and Research
PDF	Project Design Features
PFC	Perfluorocarbons
PM ₁₀	Particulate Matter 10 microns in diameter or less
PM _{2.5}	Particulate Matter 2.5 microns in diameter or less
ppb	Parts Per Billion
ppm	Parts Per Million
ppt	Parts Per Trillion
Project	Ottawa Business Center
PSD	Prevention Significant Deterioration
RPS	Renewables Portfolio Standard
SB	Senate Bill
SB 32	Senate Bill 32
SB 375	Regional GHG Emissions Reduction Targets/Sustainable Communities Strategies
SCAQMD	South Coast Air Quality Management District
Scoping Plan	CARB's Climate Change Scoping Plan
sf	Square Feet
SF ₆	Sulfur Hexafluoride
SGC	Strategic Growth Council
SLPS	Short-Lived Climate Pollutant Strategy
SO _x	Oxides of Sulfur
SWRCB	California State Water Resources Control Board
tpy	Tons Per Year
tsf	Thousand Square Feet
UNFCCC	United Nations' Framework Convention on Climate Change
Update	CARB approved First Updated to the Scoping Plan
VMT	Vehicle-Miles Traveled
VOC	Volatile Organic Compounds
ZE/NZE	Zero- and near-zero-emission
ZEV	Zero Emission Vehicle

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EXECUTIVE SUMMARY

ES.1 SUMMARY OF FINDINGS

The results of this *Ottawa Business Center Greenhouse Gas Analysis* (GHGA) are summarized below based on the significance criteria in Section 3 of this report consistent with Appendix G of the *California Environmental Quality Act (CEQA) Guidelines* (1). Table ES-1 shows the findings of significance for potential greenhouse gas (GHG) impacts under CEQA.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
GHG Impact #1: The Project would not generate direct or indirect GHG emission that would result in a significant impact on the environment.	3.8	<i>Potentially Significant</i>	<i>Significant and Unavoidable</i>
GHG Impact #2: The Project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.	3.8	<i>Potentially Significant</i>	<i>Significant and Unavoidable</i>

ES.2 REGULATORY REQUIREMENTS

The Project would be required to comply with all mandates imposed by the State of California and the Mojave Desert Air Quality Management District (MDAQMD). Those that are applicable to the Project and that would assist in the reduction of GHG emissions are:

- Global Warming Solutions Act of 2006 (AB 32) (2).
- Regional GHG Emissions Reduction Targets/Sustainable Communities Strategies (SB 375) (3).
- Pavley Fuel Efficiency Standards (AB 1493). Establishes fuel efficiency ratings for new vehicles (4).
- Title 24 California Code of Regulations (California Building Code). Establishes energy efficiency requirements for new construction (5).
- Title 20 California Code of Regulations (Appliance Energy Efficiency Standards). Establishes energy efficiency requirements for appliances (6).
- Title 17 California Code of Regulations (Low Carbon Fuel Standard). Requires carbon content of fuel sold in California to be 10% less by 2020 (7).
- California Water Conservation in Landscaping Act of 2006 (AB 1881). Requires local agencies to adopt the Department of Water Resources updated Water Efficient Landscape Ordinance or

equivalent by January 1, 2010 to ensure efficient landscapes in new development and reduced water waste in existing landscapes (8).

- Statewide Retail Provider Emissions Performance Standards (SB 1368). Requires energy generators to achieve performance standards for GHG emissions (9).
- Renewable Portfolio Standards (SB 1078). Requires electric corporations to increase the amount of energy obtained from eligible renewable energy resources to 20 percent (%) by 2010 and 33% by 2020 (10).
- Senate Bill 32 (SB 32). Requires the state to reduce statewide GHG emissions to 40% below 1990 levels by 2030, a reduction target that was first introduced in Executive Order B-30-15 (11).

ES.3 MITIGATION MEASURES

MM GHG-1

Prior to the issuance of a building permit, the site plan shall include surface parking lots to provide parking for low-emitting, fuel-efficient, and carpool/van vehicles. At minimum, the number of preferential parking spaces shall equal to the Tier 2 Nonresidential Voluntary Measures of CALGreen Section A5.106.5.1.2.

MM GHG-2

Prior to the issuance of a building permit, the site plan shall include the minimum number of automobile electric vehicle (EV) charging stations required by the CCR Title 24. Final designs of Project buildings shall include electrical infrastructure sufficiently sized to accommodate the potential installation of additional auto and truck EV charging stations.

MM GHG-3

The Project shall implement Screening Table Measures providing for a minimum 45 points per the City’s CAP Screening Tables. The City shall verify incorporation of the identified Screening Table Measures or equivalent replacement measures within the Project building plans and site designs prior to the issuance of building permit(s) and/or site plans (as applicable).

An example of how the Project could achieve a minimum of 45 Screening Table Points is provided at Table ES-2. The Project would not be required or limited to these specific measures as long as the Project demonstrates a minimum of 45 points would be achieved.

TABLE ES-2: CAP CONSISTENCY

Feature	Description	Points
Windows	Enhanced Window Insulation (0.32 U-factor, 0.25 SHGC)	8
Thermal Storage of Building	Modest Thermal Mass (10% of floor or 10% of walls 12” or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood or other insulating materials)	4

Feature	Description	Points
Space Heating/Cooling Equipment	High Efficiency HVAC (EER 15/80% AFUE or 8.5 HSPF)	8
Water Heaters	Improved Efficiency Water Heater (0.675 Energy Factor)	14
Photovoltaic	Solar Ready Roofs (sturdy roof and electrical hookups)	2
Water Efficient Landscaping	Only California Native landscape that requires no or only supplemental irrigation	8
Water Efficient Irrigation Systems	Weather based irrigation control systems combined with drip irrigation (demonstrate 20% reduced water)	5
Toilets	Waterless Efficient Toilets/Urinals (1.5gpm)	3
Faucets	Water Efficient faucets (1.28 gpm)	3
Electric Vehicle (EV)	Provide public charging station for use by an electric vehicle (ten points for each charging station within the facility).	10
TOTAL POINTS EARNED BY COMMERCIAL/INDUSTRIAL PROJECT		65

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1 INTRODUCTION

This report presents the results of the GHGA prepared by Urban Crossroads, Inc., for the Ottawa Business Center (Project).

The purpose of this GHGA is to evaluate Project-related construction and operational emissions and determine the level of GHG impacts as a result of constructing and operating the proposed Project.

1.1 SITE LOCATION

The proposed project is located at the northwest corner of Hesperia Road and Ottawa Street in the City of Victorville, as shown on Exhibit 1-A. An industrial use is located to the south, residential uses located to the east across the Union Pacific railroad, and vacant land surrounds the Project site to the west and north. The Project Site is currently vacant. Per the City of Victorville General Plan designates the Project site or Heavy Industrial uses. The Heavy Industrial land use category refers to industrial and manufacturing uses that are more specialized in nature and require special consideration in terms of use of the property as well as impacts on adjacent properties (12).

1.2 PROJECT DESCRIPTION

The proposed Project consists of the following uses:

- 200,000 square feet (sf) of High-Cube Cold Storage warehouse use (20% of the total building sf)
- 796,520 sf of High-Cube Fulfillment Center Warehouse use (80% of the total building sf)

The Project is anticipated to be developed within a single phase with an anticipated opening year of 2024. Regional access to the Project site will be provided by the Interstate 15 (I-15) Freeway via Nisqualli Road. At the time this GHG was prepared, the future tenants of the proposed Project were unknown.

The on-site Project-related emission sources are expected to include loading dock activity and entry gate & truck movements. This air study is intended to describe air quality impacts associated with the expected typical operational activities at the Project site. To present a conservative approach, this report assumes the Project will operate 24-hours daily for seven days per week.

EXHIBIT 1-A: LOCATION MAP

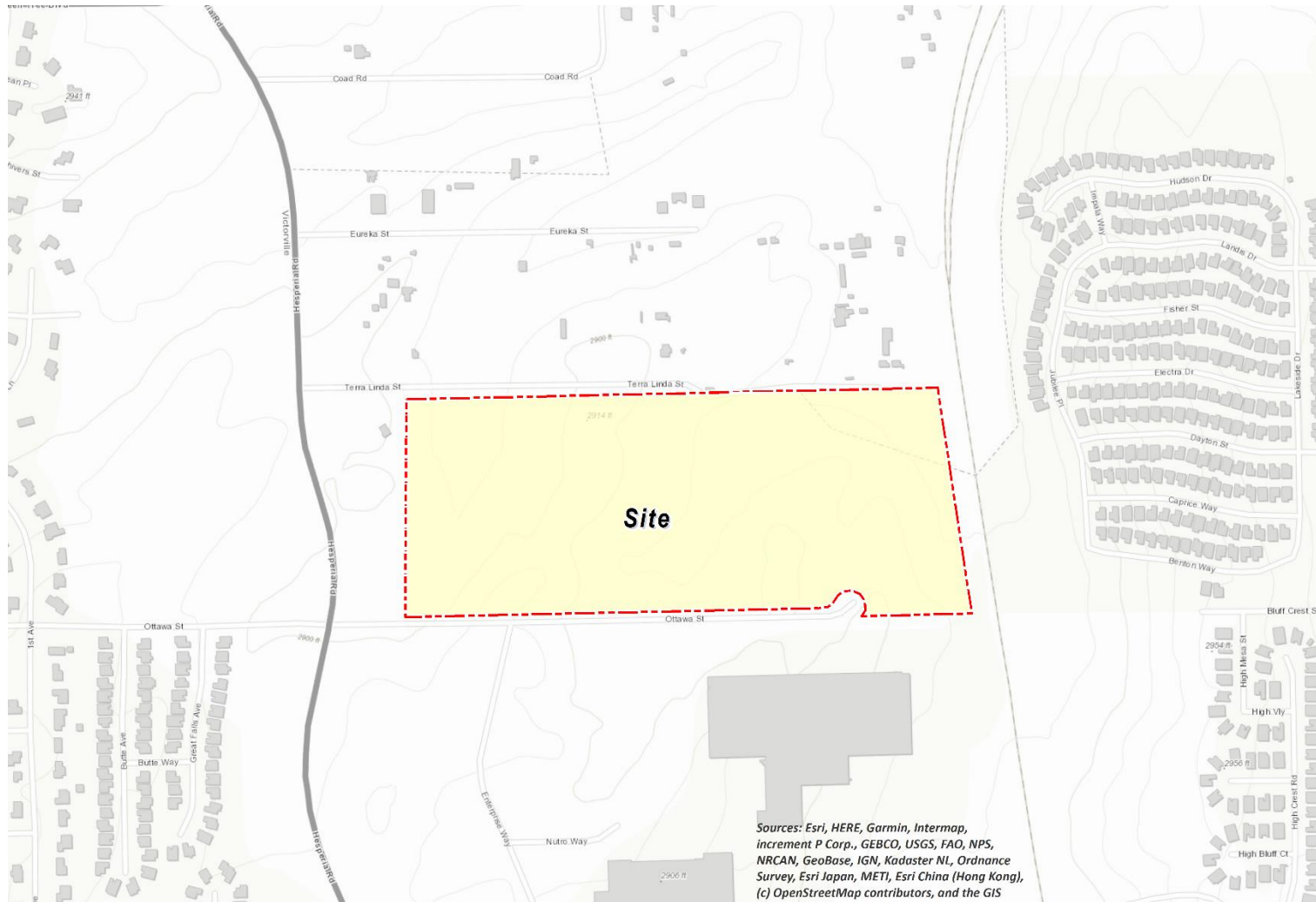
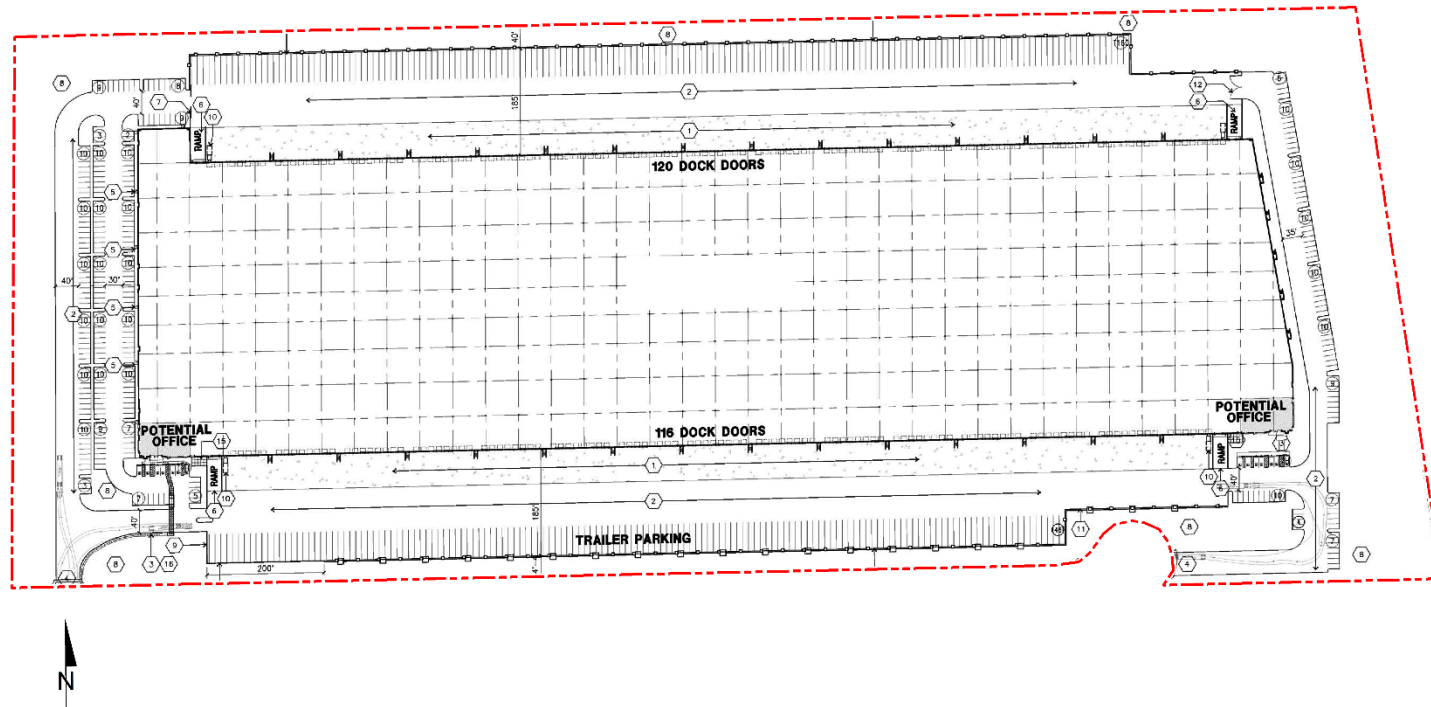


EXHIBIT 1-B: SITE PLAN



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2 CLIMATE CHANGE SETTING

2.1 INTRODUCTION TO GLOBAL CLIMATE CHANGE

GCC is defined as the change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms. The majority of scientists believe that the climate shift taking place since the Industrial Revolution is occurring at a quicker rate and magnitude than in the past. Scientific evidence suggests that GCC is the result of increased concentrations of GHGs in the earth's atmosphere, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases. The majority of scientists believe that this increased rate of climate change is the result of GHGs resulting from human activity and industrialization over the past 200 years.

An individual project like the proposed Project evaluated in this GHGA cannot generate enough GHG emissions to affect a discernible change in global climate. However, the proposed Project may participate in the potential for GCC by its incremental contribution of GHGs combined with the cumulative increase of all other sources of GHGs, which when taken together constitute potential influences on GCC. Because these changes may have serious environmental consequences, Section 3.0 will evaluate the potential for the proposed Project to have a significant effect upon the environment as a result of its potential contribution to the greenhouse effect.

2.2 GLOBAL CLIMATE CHANGE DEFINED

GCC refers to the change in average meteorological conditions on the earth with respect to temperature, wind patterns, precipitation and storms. Global temperatures are regulated by naturally occurring atmospheric gases such as water vapor, CO₂, N₂O, CH₄, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF₃), and sulfur hexafluoride (SF₆). These particular gases are important due to their residence time (duration they stay) in the atmosphere, which ranges from 10 years to more than 100 years. These gases allow solar radiation into the earth's atmosphere, but prevent radioactive heat from escaping, thus warming the earth's atmosphere. GCC can occur naturally as it has in the past with the previous ice ages.

Gases that trap heat in the atmosphere are often referred to as GHGs. GHGs are released into the atmosphere by both natural and anthropogenic activity. Without the natural GHG effect, the earth's average temperature would be approximately 61 degrees Fahrenheit (°F) cooler than it is currently. The cumulative accumulation of these gases in the earth's atmosphere is considered to be the cause for the observed increase in the earth's temperature.

2.3 GHGs

2.3.1 GHGs AND HEALTH EFFECTS

GHGs trap heat in the atmosphere, creating a GHG effect that results in global warming and climate change. Many gases demonstrate these properties and as discussed in Table 2-1. For the purposes of this analysis, emissions of CO₂, CH₄, and N₂O were evaluated (see Table 3-1 later in

this report) because these gases are the primary contributors to GCC from development projects. Although there are other substances such as fluorinated gases that also contribute to GCC, these fluorinated gases were not evaluated as their sources are not well-defined and do not contain accepted emissions factors or methodology to accurately calculate these gases.

TABLE 2-1: GHGS

GHGs	Description	Sources	Health Effects
Water	<p>Water is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered to be a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. A climate feedback is an indirect, or secondary, change, either positive or negative, that occurs within the climate system in response to a forcing mechanism. The feedback loop in which water is involved is critically important to projecting future climate change.</p> <p>As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to ‘hold’ more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a “positive feedback loop.” The extent to which this positive</p>	<p>The main source of water vapor is evaporation from the oceans (approximately 85%). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from sea ice and snow, and transpiration from plant leaves.</p>	<p>There are no known direct health effects related to water vapor at this time. It should be noted however that when some pollutants react with water vapor, the reaction forms a transport mechanism for some of these pollutants to enter the human body through water vapor.</p>

GHGs	Description	Sources	Health Effects
	<p>feedback loop will continue is unknown as there are also dynamics that hold the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the earth's surface and heat it up) (13).</p>		
<p>CO₂</p>	<p>CO₂ is an odorless and colorless GHG. Since the industrial revolution began in the mid-1700s, the sort of human activity that increases GHG emissions has increased dramatically in scale and distribution. Data from the past 50 years suggests a corollary increase in levels and concentrations. As an example, prior to the industrial revolution, CO₂ concentrations were fairly stable at 280 parts per million (ppm). Today, they are around 370 ppm, an increase of more than 30%. Left unchecked, the concentration of CO₂ in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources (14).</p>	<p>CO₂ is emitted from natural and manmade sources. Natural sources include: the decomposition of dead organic matter; respiration of bacteria, plants, animals and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include: the burning of coal, oil, natural gas, and wood. CO₂ is naturally removed from the air by photosynthesis, dissolution into ocean water, transfer to soils and ice caps, and chemical weathering of carbonate rocks (15).</p>	<p>Outdoor levels of CO₂ are not high enough to result in negative health effects.</p> <p>According to the National Institute for Occupational Safety and Health (NIOSH) high concentrations of CO₂ can result in health effects such as: headaches, dizziness, restlessness, difficulty breathing, sweating, increased heart rate, increased cardiac output, increased blood pressure, coma, asphyxia, and/or convulsions. It should be noted that current concentrations of CO₂ in the earth's atmosphere are estimated to be approximately 370 ppm, the actual reference exposure level (level at which adverse health effects typically occur) is at exposure levels of 5,000 ppm averaged over 10 hours in a 40-hour workweek and short-term reference exposure levels of 30,000 ppm averaged over a 15 minute period (16).</p>

GHGs	Description	Sources	Health Effects
CH ₄	CH ₄ is an extremely effective absorber of radiation, although its atmospheric concentration is less than CO ₂ and its lifetime in the atmosphere is brief (10-12 years), compared to other GHGs.	CH ₄ has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of CH ₄ . Other anthropogenic sources include fossil-fuel combustion and biomass burning (17).	CH ₄ is extremely reactive with oxidizers, halogens, and other halogen-containing compounds. Exposure to high levels of CH ₄ can cause asphyxiation, loss of consciousness, headache and dizziness, nausea and vomiting, weakness, loss of coordination, and an increased breathing rate.
N ₂ O	N ₂ O, also known as laughing gas, is a colorless GHG. Concentrations of N ₂ O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb).	N ₂ O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant, i.e., in whipped cream bottles. It is also	N ₂ O can cause dizziness, euphoria, and sometimes slight hallucinations. In small doses, it is considered harmless. However, in some cases, heavy and extended use can cause Olney's Lesions (brain damage) (18).

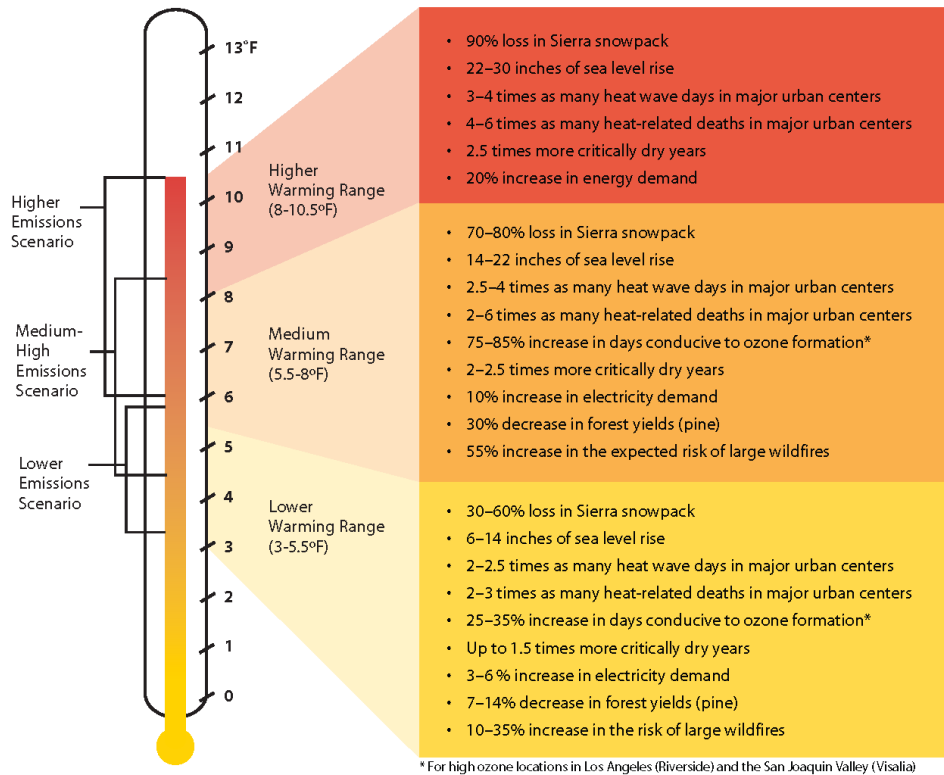
GHGs	Description	Sources	Health Effects
		<p>used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars. N₂O can be transported into the stratosphere, be deposited on the earth's surface, and be converted to other compounds by chemical reaction (18).</p>	
<p>Chlorofluorocarbons (CFCs)</p>	<p>CFCs are gases formed synthetically by replacing all hydrogen atoms in CH₄ or ethane (C₂H₆) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the earth's surface).</p>	<p>CFCs have no natural source but were first synthesized in 1928. They were used for refrigerants, aerosol propellants and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and was extremely successful, so much so that levels of the major CFCs are now remaining steady or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years (19).</p>	<p>In confined indoor locations, working with CFC-113 or other CFCs is thought to result in death by cardiac arrhythmia (heart frequency too high or too low) or asphyxiation.</p>

GHGs	Description	Sources	Health Effects
HFCs	HFCs are synthetic, man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential (GWP). The HFCs with the largest measured atmospheric abundances are (in order), Fluoroform (HFC-23), 1,1,1,2-tetrafluoroethane (HFC-134a), and 1,1-difluoroethane (HFC-152a). Prior to 1990, the only significant emissions were of HFC-23. HCF-134a emissions are increasing due to its use as a refrigerant.	HFCs are manmade for applications such as automobile air conditioners and refrigerants.	No health effects are known to result from exposure to HFCs.
PFCs	PFCs have stable molecular structures and do not break down through chemical processes in the lower atmosphere. High-energy ultraviolet rays, which occur about 60 kilometers above earth's surface, are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF ₄) and hexafluoroethane (C ₂ F ₆). The EPA estimates that concentrations of CF ₄ in the atmosphere are over 70 parts per trillion (ppt).	The two main sources of PFCs are primary aluminum production and semiconductor manufacture.	No health effects are known to result from exposure to PFCs.
SF ₆	SF ₆ is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest GWP of any gas evaluated (23,900) (20). The EPA indicates that concentrations in the 1990s were about 4 ppt.	SF ₆ is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.	In high concentrations in confined areas, the gas presents the hazard of suffocation because it displaces the oxygen needed for breathing.

GHGs	Description	Sources	Health Effects
Nitrogen Trifluoride (NF ₃)	NF ₃ is a colorless gas with a distinctly moldy odor. The World Resources Institute (WRI) indicates that NF ₃ has a 100-year GWP of 17,200 (21).	NF ₃ is used in industrial processes and is produced in the manufacturing of semiconductors, Liquid Crystal Display (LCD) panels, types of solar panels, and chemical lasers.	Long-term or repeated exposure may affect the liver and kidneys and may cause fluorosis (22).

The potential health effects related directly to the emissions of CO₂, CH₄, and N₂O as they relate to development projects such as the proposed Project are still being debated in the scientific community. Their cumulative effects to GCC have the potential to cause adverse effects to human health. Increases in Earth’s ambient temperatures would result in more intense heat waves, causing more heat-related deaths. Scientists also purport that higher ambient temperatures would increase disease survival rates and result in more widespread disease. Climate change will likely cause shifts in weather patterns, potentially resulting in devastating droughts and food shortages in some areas (23). Exhibit 2-A presents the potential impacts of global warming (24).

EXHIBIT 2-A: SUMMARY OF PROJECTED GLOBAL WARMING IMPACT, 2070-2099 (AS COMPARED WITH 1961-1990)



Source: Barbara H. Allen-Diaz. "Climate change affects us all." University of California, Agriculture and Natural Resources

2.4 GLOBAL WARMING POTENTIAL

GHGs have varying GWP values. GWP of a GHG indicates the amount of warming a gas causes over a given period of time and represents the potential of a gas to trap heat in the atmosphere. CO₂ is utilized as the reference gas for GWP, and thus has a GWP of 1. CO₂ equivalent (CO₂e) is a term used for describing the difference GHGs in a common unit. CO₂e signifies the amount of CO₂ which would have the equivalent GWP.

The atmospheric lifetime and GWP of selected GHGs are summarized at Table 2-2. As shown in the table below, GWP for the 2nd Assessment Report, the Intergovernmental Panel on Climate Change (IPCC)'s scientific and socio-economic assessment on climate change, range from 1 for CO₂ to 23,900 for SF₆ and GWP for the IPCC's 5th Assessment Report range from 1 for CO₂ to 23,500 for SF₆ (25).

TABLE 2-2: GWP AND ATMOSPHERIC LIFETIME OF SELECT GHGS

Gas	Atmospheric Lifetime (years)	GWP (100-year time horizon)		
		2 nd Assessment Report	4 th Assessment Report	5 th Assessment Report
CO ₂	See*	1	1	1
CH ₄	12 .4	21	25	28
N ₂ O	121	310	298	265
HFC-23	222	11,700	14,800	12,400
HFC-134a	13.4	1,300	1,430	1,300
HFC-152a	1.5	140	124	138
SF ₆	3,200	23,900	22,800	23,500
NF ₃	740	-	17,200	16,100

*As per Appendix 8.A. of IPCC's 5th Assessment Report, no single lifetime can be given.

Source: IPCC Fourth Assessment Report: https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

IPCC Fifth Assessment Report: https://www.ipcc.ch/pdf/assessmentreport/ar5/wg1/WG1AR5_Chapter08_FINAL.pdf

2.5 GHG EMISSIONS INVENTORIES

2.5.1 GLOBAL

Worldwide anthropogenic GHG emissions are tracked by the IPCC for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I). Human GHG emissions data for Annex I nations are available through 2018. Based on the latest available data, the sum of these emissions totaled approximately 28,768,440 gigagram (Gg) CO₂e¹ (26) (27) as summarized on Table 2-3.

¹ The global emissions are the sum of Annex I and non-Annex I countries, without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries without 2018 data, the United Nations' Framework Convention on Climate Change (UNFCCC) data for the most recent year were used U.N. Framework Convention on Climate Change, "Annex I Parties – GHG total without LULUCF," The most recent GHG emissions for China and India are from 2014 and 2010, respectively.

2.5.2 UNITED STATES

As noted in Table 2-3, the United States, as a single country, was the number two producer of GHG emissions in 2018.

TABLE 2-3: TOP GHG PRODUCING COUNTRIES AND THE EUROPEAN UNION ²

Emitting Countries	GHG Emissions (Gg CO ₂ e)
China	12,300,200
United States	6,676,650
European Union (28-member countries)	4,232,274
Russian Federation	2,220,123
India	2,100,850
Japan	1,238,343
Total	28,768,440

2.5.3 STATE OF CALIFORNIA

California has significantly slowed the rate of growth of GHG emissions due to the implementation of energy efficiency programs as well as adoption of strict emission controls but is still a substantial contributor to the United States (U.S.) emissions inventory total (28). The California Air Resource Board (CARB) compiles GHG inventories for the State of California. Based upon the 2020 GHG inventory data (i.e., the latest year for which data are available) for the 2000-2019 GHG emissions period, California emitted an average 418.1 million metric tons of CO₂e per year (MMTCO₂e/yr) or 418,100 Gg CO₂e (6.26% of the total United States GHG emissions) (29).

2.6 EFFECTS OF CLIMATE CHANGE IN CALIFORNIA

2.6.1 PUBLIC HEALTH

Higher temperatures may increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation could increase from 25 to 35% under the lower warming range to 75 to 85% under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances, depending on wind conditions. Based on *Our Changing Climate Assessing the Risks to California by the California Climate Change Center*, large wildfires could become up to 55% more frequent if GHG emissions are not significantly reduced (30).

In addition, under the higher warming range scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a

² Used <http://unfccc.int> data for Annex I countries. Consulted the CAIT Climate Data Explorer in <https://www.climatewatchdata.org> site to reference Non-Annex I countries of China and India.

significant increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures could increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

2.6.2 WATER RESOURCES

A vast network of man-made reservoirs and aqueducts captures and transports water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages.

If temperatures continue to increase, more precipitation could fall as rain instead of snow, and the snow that does fall could melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90%. Under the lower warming range scenario, snowpack losses could be only half as large as those possible if temperatures were to rise to the higher warming range. How much snowpack could be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snowpack could pose challenges to water managers and hamper hydropower generation. It could also adversely affect winter tourism. Under the lower warming range, the ski season at lower elevations could be reduced by as much as a month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing and snowboarding.

The State's water supplies are also at risk from rising sea levels. An influx of saltwater could degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta – a major fresh water supply.

2.6.3 AGRICULTURE

Increased temperatures could cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. First, California farmers could possibly lose as much as 25% of the water supply needed. Although higher CO₂ levels can stimulate plant production and increase plant water-use efficiency, California's farmers could face greater water demand for crops and a less reliable water supply as temperatures rise. Crop growth and development could change, as could the intensity and frequency of pest and disease outbreaks. Rising temperatures could aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures could worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits, and nuts.

In addition, continued GCC could shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion could occur in many species while range contractions may be less likely in rapidly evolving species with significant populations already established. Should range contractions occur, new or different weed species could fill the emerging gaps. Continued GCC could alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

2.6.4 FORESTS AND LANDSCAPES

GCC has the potential to intensify the current threat to forests and landscapes by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55%, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks would not be uniform throughout the state. In contrast, wildfires in northern California could increase by up to 90% due to decreased precipitation.

Moreover, continued GCC has the potential to alter natural ecosystems and biological diversity within the state. For example, alpine and subalpine ecosystems could decline by as much as 60 to 80% by the end of the century as a result of increasing temperatures. The productivity of the state's forests has the potential to decrease as a result of GCC.

2.6.5 RISING SEA LEVELS

Rising sea levels, more intense coastal storms, and warmer water temperatures could increasingly threaten the state's coastal regions. Under the higher warming range scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate low-lying coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats. Under the lower warming range scenario, sea level could rise 12-14 inches.

2.7 REGULATORY SETTING

2.7.1 INTERNATIONAL

Climate change is a global issue involving GHG emissions from all around the world; therefore, countries such as the ones discussed below have made an effort to reduce GHGs.

IPCC

In 1988, the United Nations (U.N.) and the World Meteorological Organization established the IPCC to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

UNITED NATION'S FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

On March 21, 1994, the U.S. joined a number of countries around the world in signing the Convention. Under the UNFCCC, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

INTERNATIONAL CLIMATE CHANGE TREATIES

The Kyoto Protocol is an international agreement linked to the UNFCCC. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at an average of 5% against 1990 levels over the five-year period 2008–2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of “common but differentiated responsibilities.”

In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended American involvement in the Kyoto Protocol. In December 2009, international leaders met in Copenhagen to address the future of international climate change commitments post-Kyoto. No binding agreement was reached in Copenhagen; however, the UN Climate Change Committee identified the long-term goal of limiting the maximum global average temperature increase to no more than 2 degrees Celsius (°C) above pre-industrial levels, subject to a review in 2015. The Committee held additional meetings in Durban, South Africa in November 2011; Doha, Qatar in November 2012; and Warsaw, Poland in November 2013. The meetings gradually gained consensus among participants on individual climate change issues.

On September 23, 2014, more than 100 Heads of State and Government and leaders from the private sector and civil society met at the Climate Summit in New York hosted by the U.N. At the Summit, heads of government, business and civil society announced actions in areas that would have the greatest impact on reducing emissions, including climate finance, energy, transport, industry, agriculture, cities, forests, and building resilience.

Parties to the UNFCCC reached a landmark agreement on December 12, 2015, in Paris, charting a fundamentally new course in the two-decade-old global climate effort. Culminating a four-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen them in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts and undergo international review.

The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st session of the UNFCCC Conference of the Parties (COP) 21. Together, the Paris Agreement and the accompanying COP decision:

- Reaffirm the goal of limiting global temperature increase well below 2°C, while urging efforts to limit the increase to 1.5 degrees;
- Establish binding commitments by all parties to make “nationally determined contributions” (NDCs), and to pursue domestic measures aimed at achieving them;
- Commit all countries to report regularly on their emissions and “progress made in implementing and achieving” their NDCs, and to undergo international review;
- Commit all countries to submit new NDCs every five years, with the clear expectation that they would “represent a progression” beyond previous ones;
- Reaffirm the binding obligations of developed countries under the UNFCCC to support the efforts of developing countries, while for the first time encouraging voluntary contributions by developing countries too;
- Extend the current goal of mobilizing \$100 billion a year in support by 2020 through 2025, with a new, higher goal to be set for the period after 2025;
- Extend a mechanism to address “loss and damage” resulting from climate change, which explicitly would not “involve or provide a basis for any liability or compensation;”
- Require parties engaging in international emissions trading to avoid “double counting;” and
- Call for a new mechanism, similar to the Clean Development Mechanism under the Kyoto Protocol, enabling emission reductions in one country to be counted toward another country’s NDC (C2ES 2015a) (31).

2.7.2 NATIONAL

Prior to the last decade, there have been no concrete federal regulations of GHGs or major planning for climate change adaptation. The following are actions regarding the federal government, GHGs, and fuel efficiency.

GHG ENDANGERMENT

In *Massachusetts v. Environmental Protection Agency* 549 U.S. 497 (2007), decided on April 2, 2007, the United States Supreme Court (Supreme Court) found that four GHGs, including CO₂, are air pollutants subject to regulation under Section 202(a)(1) of the Clean Air Act (CAA). The Supreme Court held that the EPA Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the CAA:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs— CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆—in the atmosphere threaten the public health and welfare of current and future generations.

- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section “Clean Vehicles” below. After a lengthy legal challenge, the Supreme Court declined to review an Appeals Court ruling that upheld the EPA Administrator’s findings (32).

CLEAN VEHICLES

Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the U.S. On April 1, 2010, the EPA, and the Department of Transportation’s National Highway Traffic Safety Administration (NHTSA) announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the U.S.

The first phase of the national program applies to passenger cars, light-duty trucks, and medium-duty (MD) passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO₂ per mile, equivalent to 35.5 miles per gallon (mpg) if the automobile industry were to meet this CO₂ level solely through fuel economy improvements. Together, these standards would cut CO₂ emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The EPA and the NHTSA issued final rules on a second-phase joint rulemaking establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012. The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and MD passenger vehicles. The final standards are projected to result in an average industry fleetwide level of 163 grams/mile of CO₂ in model year 2025, which is equivalent to 54.5 mpg if achieved exclusively through fuel economy improvements.

The EPA and the U.S. Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks (HDT) and buses on September 15, 2011, effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that begin in the 2014 model year and achieve up to a 20% reduction in CO₂ emissions and fuel consumption by the 2018 model year. For HDT and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10% reduction for gasoline vehicles and a 15% reduction for diesel vehicles by the 2018 model year (12 and 17% respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10% reduction in fuel consumption and CO₂ emissions from the 2014 to 2018 model years.

On April 2, 2018, the EPA signed the Mid-term Evaluation Final Determination, which declared that the MY 2022-2025 GHG standards are not appropriate and should be revised (33). This Final

Determination serves to initiate a notice to further consider appropriate standards for MY 2022-2025 light-duty vehicles. On August 2, 2018, the NHTSA in conjunction with the EPA, released a notice of proposed rulemaking, the *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule)*. The SAFE Vehicles Rule was proposed to amend existing Corporate Average Fuel Economy (CAFE) and tailpipe CO₂ standards for passenger cars and light trucks and to establish new standards covering model years 2021 through 2026. As of March 31, 2020, the NHTSA and EPA finalized the SAFE Vehicle Rule which increased stringency of CAFE and CO₂ emissions standards by 1.5% each year through model year 2026 (34).

MANDATORY REPORTING OF GHGs

The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of GHGs Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the U.S. and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons per year (MT/yr) or more of GHG emissions are required to submit annual reports to the EPA.

NEW SOURCE REVIEW

The EPA issued a final rule on May 13, 2010, that establishes thresholds for GHGs that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule “tailors” the requirements of these CAA permitting programs to limit which facilities would be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the Federal Code of Regulations, the EPA states:

“This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the CAA, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to GHG sources, starting with the largest GHG emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for GHG emissions until at least April 30, 2016.”

The EPA estimates that facilities responsible for nearly 70% of the national GHG emissions from stationary sources would be subject to permitting requirements under this rule. This includes the nation’s largest GHG emitters—power plants, refineries, and cement production facilities.

STANDARDS OF PERFORMANCE FOR GHG EMISSIONS FOR NEW STATIONARY SOURCES: ELECTRIC UTILITY GENERATING UNITS

As required by a settlement agreement, the EPA proposed new performance standards for emissions of CO₂ for new, affected, fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatts (MW) would be required to meet an output-based standard of 1,000 pounds (lbs) of CO₂ per MW-hour (MWh), based on the performance of widely used natural gas combined cycle technology. It should be noted that on February 9, 2016, the Supreme Court issued a stay of this regulation pending litigation. Additionally, the current EPA Administrator has also signed a measure to repeal the Clean Power Plan, including the CO₂ standards. The Clean Power Plan was officially repealed on June 19, 2019, when the EPA issued the final Affordable Clean Energy rule (ACE). Under ACE, new state emission guidelines were established that provided existing coal-fired electric utility generating units with achievable standards.

CAP-AND-TRADE

Cap-and-trade refers to a policy tool where emissions are limited to a certain amount and can be traded or provides flexibility on how the emitter can comply. Successful examples in the U.S. include the Acid Rain Program and the N₂O Budget Trading Program and Clean Air Interstate Rule in the northeast. There is no federal GHG cap-and-trade program currently; however, some states have joined to create initiatives to provide a mechanism for cap-and-trade.

The Regional GHG Initiative is an effort to reduce GHGs among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Each state caps CO₂ emissions from power plants, auctions CO₂ emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Initiative began in 2008 and in 2020 has retained all participating states.

The Western Climate Initiative (WCI) partner jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15% below 2005 levels by 2020. The partners were originally California, British Columbia, Manitoba, Ontario, and Quebec. However, Manitoba and Ontario are not currently participating. California linked with Quebec's cap-and-trade system January 1, 2014, and joint offset auctions took place in 2015. While the WCI has yet to publish whether it has successfully reached the 2020 emissions goal initiative set in 2007, SB 32 requires that California, a major partner in the WCI, adopt the goal of reducing statewide GHG emissions to 40% below the 1990 level by 2030.

SMARTWAY PROGRAM

The SmartWay Program is a public-private initiative between the EPA, large and small trucking companies, rail carriers, logistics companies, commercial manufacturers, retailers, and other federal and state agencies. Its purpose is to improve fuel efficiency and the environmental performance (reduction of both GHG emissions and air pollution) of the goods movement supply chains. SmartWay is comprised of four components (35):

1. SmartWay Transport Partnership: A partnership in which freight carriers and shippers commit to benchmark operations, track fuel consumption, and improve performance annually.
2. SmartWay Technology Program: A testing, verification, and designation program to help freight companies identify equipment, technologies, and strategies that save fuel and lower emissions.
3. SmartWay Vehicles: A program that ranks light-duty cars and small trucks and identifies superior environmental performers with the SmartWay logo.
4. SmartWay International Interests: Guidance and resources for countries seeking to develop freight sustainability programs modeled after SmartWay.

SmartWay effectively refers to requirements geared towards reducing fuel consumption. Most large trucking fleets driving newer vehicles are compliant with SmartWay design requirements. Moreover, over time, all HDTs would have to comply with the CARB GHG Regulation that is designed with the SmartWay Program in mind, to reduce GHG emissions by making them more fuel-efficient. For instance, in 2015, 53 foot or longer dry vans or refrigerated trailers equipped with a combination of SmartWay-verified low-rolling resistance tires and SmartWay-verified aerodynamic devices would obtain a total of 10% or more fuel savings over traditional trailers.

Through the SmartWay Technology Program, the EPA has evaluated the fuel saving benefits of various devices through grants, cooperative agreements, emissions, and fuel economy testing, demonstration projects and technical literature review. As a result, the EPA has determined the following types of technologies provide fuel saving and/or emission reducing benefits when used properly in their designed applications, and has verified certain products:

- Idle reduction technologies – less idling of the engine when it is not needed would reduce fuel consumption.
- Aerodynamic technologies minimize drag and improve airflow over the entire tractor-trailer vehicle. Aerodynamic technologies include gap fairings that reduce turbulence between the tractor and trailer, side skirts that minimize wind under the trailer, and rear fairings that reduce turbulence and pressure drop at the rear of the trailer.
- Low rolling resistance tires can roll longer without slowing down, thereby reducing the amount of fuel used. Rolling resistance (or rolling friction or rolling drag) is the force resisting the motion when a tire rolls on a surface. The wheel would eventually slow down because of this resistance.
- Retrofit technologies include things such as diesel particulate filters, emissions upgrades (to a higher tier), etc., which would reduce emissions.
- Federal excise tax exemptions.

EXECUTIVE ORDER 13990

On January 20, 2021, Federal agencies were directed to immediately review, and take action to address, Federal regulations promulgated and other actions taken during the last 4 years that conflict with national objectives to improve public health and the environment; ensure access to clean air and water; limit exposure to dangerous chemicals and pesticides; hold polluters accountable, including those who disproportionately harm communities of color and low-income communities; reduce greenhouse gas emissions; bolster resilience to the impacts of climate change; restore and expand our national treasures and monuments; and prioritize both environmental justice and employment.

2.7.3 CALIFORNIA

2.7.3.1 LEGISLATIVE ACTIONS TO REDUCE GHGS

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation such as the landmark AB 32 was specifically enacted to address GHG emissions. Other legislation such as Title 24 and Title 20 energy standards were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

AB 32

The California State Legislature enacted AB 32, which required that GHGs emitted in California be reduced to 1990 levels by the year 2020 (this goal has been met³). GHGs as defined under AB 32 include CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆. Since AB 32 was enacted, a seventh chemical, NF₃, has also been added to the list of GHGs. CARB is the state agency charged with monitoring and regulating sources of GHGs. Pursuant to AB 32, CARB adopted regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 states the following:

“Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.”

SB 375

On September 30, 2008, SB 375 was signed by Governor Schwarzenegger. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40% of the total GHG emissions in California. SB 375 states, “Without improved land use and transportation policy,

³ Based upon the 2019 GHG inventory data (i.e., the latest year for which data are available) for the 2000-2017 GHG emissions period, California emitted an average 424.1 MMTCO₂e (29). This is less than the 2020 emissions target of 431 MMTCO₂e.

California would not be able to achieve the goals of AB 32.” SB 375 does the following: it (1) requires metropolitan planning organizations (MPOs) to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

SB 375 requires MPOs to prepare a Sustainable Communities Strategy (SCS) within the Regional Transportation Plan (RTP) that guides growth while taking into account the transportation, housing, environmental, and economic needs of the region. SB 375 uses CEQA streamlining as an incentive to encourage residential projects, which help achieve AB 32 goals to reduce GHG emissions. Although SB 375 does not prevent CARB from adopting additional regulations, such actions are not anticipated in the foreseeable future.

Concerning CEQA, SB 375, as codified in Public Resources Code Section 21159.28, states that CEQA findings for certain projects are not required to reference, describe, or discuss (1) growth inducing impacts, or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network, if the project:

1. Is in an area with an approved sustainable communities strategy or an alternative planning strategy that CARB accepts as achieving the GHG emission reduction targets.
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies).
3. Incorporates the MMs required by an applicable prior environmental document.

AB 1493 - Pavley Fuel Efficiency Standards

Enacted on July 22, 2002, California AB 1493, also known as the Pavley Fuel Efficiency Standards, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA’s denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the U.S. District Court for the District of Columbia in 2011.

The standards phase in during the 2009 through 2016 MY. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.

The second phase of the implementation for the Pavley bill was incorporated into Amendments to the Low-Emission Vehicle Program (LEV III) or the Advanced Clean Cars (ACC) program. The ACC program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for MY 2017 through 2025. The regulation would reduce GHGs from new cars by 34% from 2016 levels by 2025. The new rules would clean up gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles (EV) and hydrogen fuel

cell cars. The package would also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.

CLEAN ENERGY AND POLLUTION REDUCTION ACT OF 2015 (SB 350)

In October 2015, the legislature approved, and Governor Jerry Brown signed SB 350, which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the RPS, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for EV charging stations. Provisions for a 50% reduction in the use of petroleum statewide were removed from the Bill because of opposition and concern that it would prevent the Bill's passage. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33% to 50% by 2030, with interim targets of 40% by 2024, and 25% by 2027.
- Double the energy efficiency in existing buildings by 2030. This target would be achieved through the California Public Utilities Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electrify transmission markets and to improve accessibility in these markets, which would facilitate the growth of renewable energy markets in the western United States.

SB 32

On September 8, 2016, Governor Brown signed SB 32 and its companion bill, AB 197. SB 32 requires the state to reduce statewide GHG emissions to 40% below 1990 levels by 2030, a reduction target that was first introduced in Executive Order B-30-15. The new legislation builds upon the AB 32 goal and provides an intermediate goal to achieving S-3-05, which sets a statewide GHG reduction target of 80% below 1990 levels by 2050. AB 197 creates a legislative committee to oversee regulators to ensure that CARB not only responds to the Governor, but also the Legislature (11).

CARB SCOPING PLAN UPDATE

In November 2017, CARB released the *Final 2017 Scoping Plan Update (2017 Scoping Plan)*, which identifies the State's post-2020 reduction strategy. The *2017 Scoping Plan* reflects the 2030 target of a 40% reduction below 1990 levels, set by Executive Order B-30-15 and codified by SB 32. Key programs that the proposed Second Update builds upon include the Cap-and-Trade Regulation, the LCFS, and much cleaner cars, trucks, and freight movement, utilizing cleaner, renewable energy, and strategies to reduce CH₄ emissions from agricultural and other wastes.

The *2017 Scoping Plan* establishes a new emissions limit of 260 MMTCO_{2e} for the year 2030, which corresponds to a 40% decrease in 1990 levels by 2030 (36).

California's climate strategy would require contributions from all sectors of the economy, including the land base, and would include enhanced focus on zero and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, including solar roofs, wind, and other distributed generation; greater use of low carbon fuels; integrated land conservation

and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (CH₄, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for direct GHG reductions at refineries would further support air quality co-benefits in neighborhoods, including in disadvantaged communities historically located adjacent to these large stationary sources, as well as efforts with California’s local air pollution control and air quality management districts (air districts) to tighten emission limits on a broad spectrum of industrial sources. Major elements of the *2017 Scoping Plan* framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing zero-emission vehicles (ZEV) buses and trucks.
- LCFS, with an increased stringency (18% by 2030).
- Implementing SB 350, which expands the RPS to 50% RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy (SLPS), which focuses on reducing CH₄ and HCF emissions by 40% and anthropogenic black carbon emissions by 50% by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- 20% reduction in GHG emissions from refineries by 2030.
- Development of a Natural and Working Lands Action Plan to secure California’s land base as a net carbon sink.

Note, however, that the *2017 Scoping Plan* acknowledges that:

“[a]chieving net zero increases in GHG emissions, resulting in no contribution to GHG impacts, may not be feasible or appropriate for every project, however, and the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA.”

In addition to the statewide strategies listed above, the *2017 Scoping Plan* also identifies local governments as essential partners in achieving the State’s long-term GHG reduction goals and identifies local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends that local governments achieve a community-wide goal to achieve emissions of no more than 6 metric tons of CO₂e (MTCO₂e) or less per capita by 2030 and 2 MTCO₂e or less per capita by 2050. For CEQA projects, CARB states that lead agencies may develop evidence-based bright-line numeric thresholds—consistent with the *2017 Scoping Plan* and the State’s long-term GHG goals—and projects with emissions over that amount may be required to incorporate on-site design features and MMs that avoid or minimize project emissions to the degree feasible; or a performance-based metric using a CAP or other plan to reduce GHG emissions is appropriate.

According to research conducted by the Lawrence Berkeley National Laboratory (LBNL) and supported by CARB, California, under its existing and proposed GHG reduction policies, could achieve the 2030 goals under SB 32. The research utilized a new, validated model known as the California LBNL GHG Analysis of Policies Spreadsheet (CALGAPS), which simulates GHG and criteria pollutant emissions in California from 2010 to 2050 in accordance to existing and future GHG-reducing policies. The CALGAPS model showed that by 2030, emissions could range from 211 to 428 MTCO_{2e} per year (MTCO_{2e}/yr), indicating that “even if all modeled policies are not implemented, reductions could be sufficient to reduce emissions 40% below the 1990 level [of SB 32].” CALGAPS analyzed emissions through 2050 even though it did not generally account for policies that might be put in place after 2030. Although the research indicated that the emissions would not meet the State’s 80% reduction goal by 2050, various combinations of policies could allow California’s cumulative emissions to remain very low through 2050 (37) (38).

CAP-AND-TRADE PROGRAM

The *2017 Scoping Plan* identifies a Cap-and-Trade Program as one of the key strategies for California to reduce GHG emissions. According to CARB, a cap-and-trade program would help put California on the path to meet its goal of achieving a 40% reduction in GHG emissions from 1990 levels by 2030. Under cap-and-trade, an overall limit on GHG emissions from capped sectors is established, and facilities subject to the cap would be able to trade permits to emit GHGs within the overall limit.

CARB adopted a California Cap-and-Trade Program pursuant to its authority under AB 32. The Cap-and-Trade Program is designed to reduce GHG emissions from regulated entities by more than 16% between 2013 and 2020, and by an additional 40% by 2030. The statewide cap for GHG emissions from the capped sectors (e.g., electricity generation, petroleum refining, and cement production) commenced in 2013 and would decline over time, achieving GHG emission reductions throughout the program’s duration.

Covered entities that emit more than 25,000 MTCO_{2e}/yr must comply with the Cap-and-Trade Program. Triggering of the 25,000 MTCO_{2e}/yr “inclusion threshold” is measured against a subset of emissions reported and verified under the California Regulation for the Mandatory Reporting of GHG Emissions (Mandatory Reporting Rule or “MRR”).

Under the Cap-and-Trade Program, CARB issues allowances equal to the total amount of allowable emissions over a given compliance period and distributes these to regulated entities. Covered entities are allocated free allowances in whole or part (if eligible), and may buy allowances at auction, purchase allowances from others, or purchase offset credits. Each covered entity with a compliance obligation is required to surrender “compliance instruments” for each MTCO_{2e} of GHG they emit. There also are requirements to surrender compliance instruments covering 30% of the prior year’s compliance obligation by November of each year (39).

The Cap-and-Trade Program provides a firm cap, which provides the highest certainty of achieving the 2030 target. An inherent feature of the Cap-and-Trade program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather,

GHG emissions reductions are only guaranteed on an accumulative basis. As summarized by CARB in the *First Update to the Climate Change Scoping Plan*:

“The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced. In other words, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate change is a global phenomenon, and the effects of GHG emissions are considered cumulative.” (40)

The Cap-and-Trade Program covers approximately 80% of California’s GHG emissions (36). The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects’ electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program’s first compliance period. The Cap-and-Trade Program covers the GHG emissions associated with the combustion of transportation fuels in California, whether refined in-state or imported.

2.7.3.2 EXECUTIVE ORDERS RELATED TO GHG EMISSIONS

California’s Executive Branch has taken several actions to reduce GHGs through the use of Executive Orders. Although not regulatory, they set the tone for the state and guide the actions of state agencies.

EXECUTIVE ORDER S-3-05

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80% below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that would stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

EXECUTIVE ORDER S-01-07 (LCFS)

Governor Schwarzenegger signed Executive Order S-01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020. CARB adopted the LCFS on April 23, 2009.

The LCFS was challenged in the U.S. District Court in Fresno in 2011. The court's ruling issued on December 29, 2011, included a preliminary injunction against CARB's implementation of the rule. The Ninth Circuit Court of Appeals stayed the injunction on April 23, 2012, pending final ruling on appeal, allowing CARB to continue to implement and enforce the regulation. The Ninth Circuit Court's decision, filed September 18, 2013, vacated the preliminary injunction. In essence, the court held that LCFS adopted by CARB were not in conflict with federal law. On August 8, 2013, the Fifth District Court of Appeal (California) ruled CARB failed to comply with CEQA and the Administrative Procedure Act (APA) when adopting regulations for LCFS. In a partially published opinion, the Court of Appeal reversed the trial court's judgment and directed issuance of a writ of mandate setting aside Resolution 09-31 and two executive orders of CARB approving LCFS regulations promulgated to reduce GHG emissions. However, the court tailored its remedy to protect the public interest by allowing the LCFS regulations to remain operative while CARB complies with the procedural requirements it failed to satisfy.

To address the Court ruling, CARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon intensity fuels, offer additional flexibility to regulated parties, update critical technical information, simplify, and streamline program operations, and enhance enforcement. On November 16, 2015, the Office of Administrative Law (OAL) approved the Final Rulemaking Package. The new LCFS regulation became effective on January 1, 2016.

In 2018, CARB approved amendments to the regulation, which included strengthening the carbon intensity benchmarks through 2030 in compliance with the SB 32 GHG emissions reduction target for 2030. The amendments included crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector (41).

EXECUTIVE ORDER S-13-08

Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the Order, the *2009 California Climate Adaptation Strategy (CNRA 2009)* was adopted, which is the "...first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying, and exploring strategies to adapt to climate change, and specifying a direction for future research.

EXECUTIVE ORDER B-30-15

On April 29, 2015, Governor Brown issued an executive order to establish a California GHG reduction target of 40% below 1990 levels by 2030. The Governor's executive order aligned California's GHG reduction targets with those of leading international governments ahead of the U.N. Climate Change Conference in Paris late 2015. The Order sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40% below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80% below 1990 levels by 2050 and directs CARB to update the *2017 Scoping Plan* to express the 2030 target in terms of MMTCO_{2e}. The Order also requires the state's climate adaptation plan to be updated every three years, and for the State to continue its climate change research program, among other provisions. As with Executive Order S-3-05, this Order is not legally enforceable as to local governments and the private sector. Legislation that would update AB 32 to make post 2020 targets and requirements a mandate is in process in the State Legislature.

EXECUTIVE ORDER B-55-18 AND SB 100

SB 100 and Executive Order B-55-18 were signed by Governor Brown on September 10, 2018. Under the existing RPS, 25% of retail sales of electricity are required to be from renewable sources by December 31, 2016, 33% by December 31, 2020, 40% by December 31, 2024, 45% by December 31, 2027, and 50% by December 31, 2030. SB 100 raises California's RPS requirement to 50% renewable resources target by December 31, 2026, and to achieve a 60% target by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours (kWh) of those products sold to their retail end-use customers achieve 44% of retail sales by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030. In addition to targets under AB 32 and SB 32, Executive Order B-55-18 establishes a carbon neutrality goal for the state of California by 2045; and sets a goal to maintain net negative emissions thereafter. The Executive Order directs the California Natural Resources Agency (CNRA), California EPA (CalEPA), the California Department of Food and Agriculture (CDFA), and CARB to include sequestration targets in the Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal.

EXECUTIVE ORDER N-79-20 AND ADVANCED CLEAN CARS II

On August 25, 2022 CARB approved the Advanced Clean Cars II rule, which codifies the goals set out in Executive Order N-79-20 and establishes a year-by-year roadmap such that by 2035, 100% of new cars and light trucks sold in California will be zero-emission vehicles. Under this regulation, automakers are required to accelerate deliveries of zero-emission light-duty vehicles, beginning with model year 2026. CARB estimates that the regulation would reduce GHG emissions from light-duty vehicles by 50% by 2040, and that from 2026 to 2040, GHG emissions would be reduced by a cumulative 395 million metric tons.

2.7.3.3 CALIFORNIA REGULATIONS AND BUILDING CODES

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

TITLE 20 CCR SECTIONS 1601 ET SEQ. – APPLIANCE EFFICIENCY REGULATIONS

The Appliance Efficiency Regulations regulate the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. 23 categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the state and those designed and sold exclusively for use in recreational vehicles (RV) or other mobile equipment (CEC 2012).

TITLE 24 CCR PART 6 – CALIFORNIA ENERGY CODE

The California Energy Code was first adopted in 1978 in response to a legislative mandate to reduce California’s energy consumption.

The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods.

TITLE 24 CCR PART 11 – CALIFORNIA GREEN BUILDING STANDARDS CODE

The California Green Building Standards Code (CALGreen) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect on January 1, 2009, and is administered by the California Building Standards Commission (CBSC).

CALGreen is updated on a regular basis, with the most recent approved update consisting of the 2019 California Green Building Code Standards that became effective January 1, 2020.

Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. CALGreen recognizes that many jurisdictions have developed existing construction waste and demolition ordinances and defers to them as the ruling guidance provided they establish a minimum 65% diversion requirement.

The code also provides exemptions for areas not served by construction waste and demolition recycling infrastructure. The State Building Code provides the minimum standard that buildings must meet in order to be certified for occupancy, which is generally enforced by the local building official.

Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas (GHG) emissions. The 2019 version of Title 24 was adopted by the CEC and became effective on January 1, 2020.

The 2019 Title 24 standards would result in less energy use, thereby reducing air pollutant emissions associated with energy consumption in the Mojave Desert Air Basin (MDAB) and across the State of California. For example, the 2019 Title 24 standards would require solar photovoltaic systems for new homes, establish requirements for newly constructed healthcare facilities, encourage demand responsive technologies for residential buildings, and update indoor and outdoor lighting requirements for nonresidential buildings.

The CEC anticipates that single-family homes built with the 2019 standards would use approximately 7% less energy compared to the residential homes built under the 2016 standards. Additionally, after implementation of solar photovoltaic systems, homes built under the 2019 standards would use about 53% less energy than homes built under the 2016 standards. Nonresidential buildings (such as the Project) would use approximately 30% less energy due to lighting upgrade requirements (19).

Because the Project would be constructed after January 1, 2020, the 2019 CALGreen standards are applicable to the Project and require, among other items (20):

- Short-term bicycle parking. If the new project or an additional alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- Long-term bicycle parking. For new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5% of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility (5.106.4.1.2).
- Designated parking for clean air vehicles. In new projects or additions to alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- Electric vehicle (EV) charging stations. New construction shall facilitate the future installation of EV supply equipment. The compliance requires empty raceways for future conduit and documentation that the electrical system has adequate capacity for the future load. The number of spaces to be provided for is contained in Table 5.106. 5.3.3 (5.106.5.3).
- Outdoor light pollution reduction. Outdoor lighting systems shall be designed to meet the backlight, upright and glare ratings per Table 5.106.8 (5.106.8).
- Construction waste management. Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.405.1.2, or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent (5.408.1).
- Excavated soil and land clearing debris. 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed (5.408.3).
- Recycling by Occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive (5.410.1).
- Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:
 - Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush (5.303.3.1)

- Urinals. The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush (5.303.3.2.1). The effective flush volume of floor-mounted or other urinals shall not exceed 0.5 gallons per flush (5.303.3.2.2).
- Showerheads. Single showerheads shall have a minimum flow rate of not more than 1.8 gallons per minute and 80 psi (5.303.3.3.1). When a shower is served by more than one showerhead, the combine flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi (5.303.3.3.2).
- Faucets and fountains. Nonresidential lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi (5.303.3.4.1). Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute of 60 psi (5.303.3.4.2). Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute (5.303.3.4.3). Metering faucets shall not deliver more than 0.20 gallons per cycle (5.303.3.4.4). Metering faucets for wash fountains shall have a maximum flow rate not more than 0.20 gallons per cycle (5.303.3.4.5).
- Outdoor potable water uses in landscaped areas. Nonresidential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent (5.304.1).
- Water meters. Separate submeters or metering devices shall be installed for new buildings or additions in excess of 50,000 sf or for excess consumption where any tenant within a new building or within an addition that is project to consume more than 1,000 gallons per day (GPD) (5.303.1.1 and 5.303.1.2).
- Outdoor water uses in rehabilitated landscape projects equal or greater than 2,500 sf. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 sf requiring a building or landscape permit (5.304.3).
- Commissioning. For new buildings 10,000 sf and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements (5.410.2).

CARB REFRIGERANT MANAGEMENT PROGRAM

CARB adopted a regulation in 2009 to reduce refrigerant GHG emissions from stationary sources through refrigerant leak detection and monitoring, leak repair, system retirement and retrofitting, reporting and recordkeeping, and proper refrigerant cylinder use, sale, and disposal. The regulation is set forth in sections 95380 to 95398 of Title 17, CCR. The rules implementing the regulation establish a limit on statewide GHG emissions from stationary facilities with refrigeration systems with more than 50 pounds of a high GWP refrigerant. The refrigerant management program is designed to (1) reduce emissions of high-GWP GHG refrigerants from leaky stationary, non-residential refrigeration equipment; (2) reduce emissions from the installation and servicing of refrigeration and air-conditioning appliances using high-GWP refrigerants; and (3) verify GHG emission reductions.

TRACTOR-TRAILER GHG REGULATION

The tractors and trailers subject to this regulation must either use EPA SmartWay certified tractors and trailers or retrofit their existing fleet with SmartWay verified technologies. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the HD tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low rolling resistance tires. Sleeper cab tractors MY 2011 and later must be SmartWay certified. All other tractors must use SmartWay verified low rolling resistance tires. There are also requirements for trailers to have low rolling resistance tires and aerodynamic devices.

PHASE I AND 2 HEAVY-DUTY VEHICLE GHG STANDARDS

In September 2011, CARB has adopted a regulation for GHG emissions from HDTs and engines sold in California. It establishes GHG emission limits on truck and engine manufacturers and harmonizes with the EPA rule for new trucks and engines nationally. Existing HD vehicle regulations in California include engine criteria emission standards, tractor-trailer GHG requirements to implement SmartWay strategies (i.e., the Heavy-Duty Tractor-Trailer GHG Regulation), and in-use fleet retrofit requirements such as the Truck and Bus Regulation. The EPA rule has compliance requirements for new compression and spark ignition engines, as well as trucks from Class 2b through Class 8. Compliance requirements began with MY 2014 with stringency levels increasing through MY 2018. The rule organizes truck compliance into three groupings, which include a) HD pickups and vans; b) vocational vehicles; and c) combination tractors. The EPA rule does not regulate trailers.

CARB staff has worked jointly with the EPA and the NHTSA on the next phase of federal GHG emission standards for medium-duty trucks (MDT) and HDT vehicles, called federal Phase 2. The federal Phase 2 standards were built on the improvements in engine and vehicle efficiency required by the Phase 1 emission standards and represent a significant opportunity to achieve further GHG reductions for 2018 and later MY HDT vehicles, including trailers. The EPA and NHTSA have proposed to roll back GHG and fuel economy standards for cars and light-duty trucks, which suggests a similar rollback of Phase 2 standards for MDT and HDT vehicles may be pursued.

SB 97 AND THE CEQA GUIDELINES UPDATE

Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states “(a) On or before July 1, 2009, the Office of Planning and Research (OPR) shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the OPR pursuant to subdivision (a).”

In 2012, Public Resources Code Section 21083.05 was amended to state:

“The Office of Planning and Research and the Natural Resources Agency shall periodically update the guidelines for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions as required by this division, including,

but not limited to, effects associated with transportation or energy consumption, to incorporate new information or criteria established by the State Air Resources Board pursuant to Division 25.5 (commencing with Section 38500) of the Health and Safety Code.”

On December 28, 2018, the Natural Resources Agency announced the OAL approved the amendments to the *CEQA Guidelines* for implementing CEQA. The CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing *CEQA Guidelines* to reference climate change.

Section 15064.4 was added to the *CEQA Guidelines* and states that in determining the significance of a project’s GHG emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project’s emissions to the effects of climate change. A project’s incremental contribution may be cumulatively considerable even if it appears relatively insignificant compared to statewide, national, or global emissions. The agency’s analysis should consider a timeframe that is appropriate for the project. The agency’s analysis also must reasonably reflect evolving scientific knowledge and state regulatory schemes. Additionally, a lead agency may use a model or methodology to estimate GHG emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project’s incremental contribution to climate change. The lead agency must support its selection of a model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use (42).

2.7.4 REGIONAL

CITY OF VICTORVILLE CLIMATE ACTION PLAN (CAP)

The City prepared a CAP in September 2015 to present GHG inventories, identify the effectiveness of California initiatives to reduce GHG emissions, and identify local measures selected by the City to reduce GHG emissions under the City’s jurisdictional control to achieve the City’s identified AB 32 2020 GHG reduction target. It should be noted that the City’s CAP does not align with the statewide goals beyond 2020. Consequently, the City is currently working with the San Bernardino County Transportation Authority (SBCTA) to update the City’s current CAP to address SB 32 and post-2020 GHG emission reductions.

The City has prepared a CAP, which provides a framework for reducing GHG emissions and managing resources to best prepare for a changing climate (43). In order to determine consistency with the CAP, the City of Victorville provided Screening Tables to aid in measuring the reduction of GHG emissions attributable to certain design and construction measures incorporated into development projects. The CAP establishes categories of GHG reduction measures to reduce GHG emissions generated by development projects. CAP GHG reduction measure categories include: energy conservation, water use reduction, increased residential density or mixed uses, transportation management, and solid waste recycling. Within each category, individual sub-measures are assigned a point value under the city’s GHG Measures

Screening Table. The point values are adjusted according to the intensity of GHG reduction measure. “Modest” Measures that reduce GHG emissions by modest amounts are worth the least number of points; and enhanced GHG emissions reduction measures are worth the most points. Projects that yield at least 45 points are determined to be consistent with the CAP. As such, projects that achieve a total of 45 points or more do not require quantification of project specific GHG emissions and, consistent with CEQA Guidelines, such projects are considered to have a less than significant individual and cumulative impact on GHG emissions.

Moreover, projects that are consistent with an adopted CAP may be found to cause a less than significant impact under CEQA. (CEQA Guidelines § 15064(h)(3)). Projects that are consistent with adopted CAPs are also considered to support and would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. The Project is substantiated herein to be consistent with the CAP. Project GHG emissions impacts on the environment are therefore considered less-than-significant. Additionally, because the Project is substantiated to be consistent with the CAP, the Project would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. Additionally, it should be noted that an update to the Screening Table is underway. The City along with other local jurisdictions has coordinated with SBCTA on an updated Screening Table, which is currently pending approval by SBCTA.

CITY OF VICTORVILLE GREENHOUSE GAS REDUCTION PLAN (GGRP)

To meet the intent of SB 32, the City is in the process of adopting the 2021 GGRP to implement General Plan policies focused on GHG emissions. The GGRP sets an aggressive goal to reduce GHG emissions by 55% below 2008 baseline GHG emission levels. In order to achieve this goal, the GGRP will require 100% of new industrial buildings to install a portion of on-site renewable electrical generation.

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3 PROJECT GREENHOUSE GAS IMPACT

3.1 INTRODUCTION

The Project has been evaluated to determine if it will result in a significant GHG impact. The significance of these potential impacts is described in the following section.

3.2 STANDARDS OF SIGNIFICANCE

The criteria used to determine the significance of potential Project-related GHG impacts are taken from the Initial Study Checklist in Appendix G of the State *CEQA Guidelines* (14 CCR §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to GHG if it would (44):

- 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?

3.2.1 THRESHOLDS OF SIGNIFICANCE

The City of Victorville has elected to rely on compliance with a local air district threshold in the determination of significance of Project-related GHG emissions. Specifically, the City has selected the interim 3,000 MTCO₂e/yr threshold recommended by SCAQMD staff for residential and commercial sector projects against which to compare Project-related GHG emissions. Although the Project is not located within the SCAQMD's jurisdiction, the City elects to utilize SCAQMD's numeric threshold since it is more conservative than the MDAQMD's numeric threshold and since it is supported by substantial evidence as follows.

The 3,000 MTCO₂e per year threshold is based on a 90% emission "capture" rate methodology. Prior to its use by the SCAQMD, the 90% emissions capture approach was one of the options suggested by the California Air Pollution Control Officers Association (CAPCOA) in their *CEQA & Climate Change* white paper (2008). A 90% emission capture rate means that unmitigated GHG emissions from the top 90% of all GHG-producing projects within a geographic area – the SCAB in this instance – would be subject to a detailed analysis of potential environmental impacts from GHG emissions, while the bottom 10% of all GHG-producing projects would be excluded from detailed analysis. A GHG significance threshold based on a 90% emission capture rate is appropriate to address the long-term adverse impacts associated with global climate change because medium and large projects will be required to implement measures to reduce GHG emissions, while small projects, which are generally infill development projects that are not the focus of the State's GHG reduction targets, are allowed to proceed. Further, a 90% emission capture rate sets the emission threshold low enough to capture a substantial proportion of future development projects and demonstrate that cumulative emissions reductions are being achieved while setting the emission threshold high enough to exclude small projects that will, in aggregate, contribute approximate 1% of projected statewide GHG emissions in the Year 2050 (45).

In setting the threshold at 3,000 MTCO₂e/yr, SCAQMD researched a database of projects kept by the Governor’s Office of Planning and Research (OPR). That database contained 798 projects, 87 of which were removed because they were very large projects and/or outliers that would skew emissions values too high, leaving 711 as the sample population to use in determining the 90th percentile capture rate. The SCAQMD analysis of the 711 projects within the sample population combined commercial, residential, and mixed-use projects. It should be noted that the sample of projects included warehouses and other light industrial land uses but did not include industrial processes (i.e., oil refineries, heavy manufacturing, electric generating stations, mining operations, etc.). Emissions from each of these projects were calculated by SCAQMD to provide a consistent method of emissions calculations across the sample population and from projects within the sample population. In calculating the emissions, the SCAQMD analysis determined that the 90th percentile ranged between 2,983 to 3,143 MTCO₂e/yr. The SCAQMD set their significance threshold at the low-end value of the range when rounded to the nearest hundred tons of emissions (i.e., 3,000 MTCO₂e/yr) to define small projects that are considered less than significant and do not need to provide further analysis.

The City understands that the 3,000 MTCO₂e/yr threshold for residential/commercial uses was proposed by SCAQMD a decade ago and was adopted as an interim policy; however, no permanent, superseding policy or threshold has since been adopted. The 3,000 MTCO₂e/yr threshold was developed and recommended by SCAQMD, an expert agency, based on substantial evidence as provided in the *Draft Guidance Document – Interim CEQA Greenhouse Gas Significance Threshold* (2008) document and subsequent Working Group meetings (latest of which occurred in 2010). SCAQMD has not withdrawn its support of the interim threshold and all documentation supporting the interim threshold remains on the SCAQMD website on a page that provides guidance to CEQA practitioners for air quality analysis (and where all SCAQMD significance thresholds for regional and local criteria pollutants and toxic air contaminants also are listed). Further, as stated by SCAQMD, this threshold “uses the Executive Order S-3-05 goal [80% below 1990 levels by 2050] as the basis for deriving the screening level” and, thus, remains valid for use in 2022 (45). Lastly, this threshold has been used for hundreds, if not thousands of GHG analyses performed for projects located within the SCAQMD jurisdiction.

Thus, for purposes of analysis in this analysis, if Project-related GHG emissions do not exceed the 3,000 MTCO₂e/yr threshold, then Project-related GHG emissions would clearly have a less-than-significant impact pursuant to Threshold GHG-1. On the other hand, if Project-related GHG emissions exceed 3,000 MTCO₂e/yr, the Project would be considered a substantial source of GHG emissions.

3.3 MODELS EMPLOYED TO ANALYZE GREENHOUSE GASES EMISSIONS

Land uses such as the Project affect GHGs through construction-source and operational-source emissions.

3.3.1 CALIFORNIA EMISSIONS ESTIMATOR MODEL™

In May 2021, the SCAQMD, in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air districts, released the latest version of the CalEEMod Version 2020.4.0. The purpose of this model is to calculate construction-source and operational-source criteria pollutants and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (46). Accordingly, the latest version of CalEEMod has been used for this Project to determine GHG emissions. Output from the model runs for construction and operational activity are provided in Appendices 3.1 through 3.3. CalEEMod includes GHG emissions from the following source categories: construction, area, energy, mobile, waste, water.

3.4 CONSTRUCTION EMISSIONS

Project construction activities would generate CO₂ and CH₄ emissions. The report *Ottawa Business Center Air Quality Impact Analysis Report* (Urban Crossroads, Inc.) (AQIA) contains detailed information regarding Project construction activities (47). As discussed in the AQIA, Construction related emissions are expected from the following construction activities:

- Site Preparation
- Grading
- Building Construction
- Paving
- Architectural Coating

3.4.1 CONSTRUCTION DURATION

Construction is expected to commence in June 2023 and will last through August 2024. Construction duration by phase is shown on Table 3-1. The construction schedule utilized in the analysis represents a “worst-case” analysis scenario should construction occur any time after the respective dates since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.⁴ The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per *CEQA Guidelines*.

⁴ As shown in the CalEEMod User’s Guide Version 2020.4.0, Section 4.3 “Offroad Equipment” as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

TABLE 3-1: CONSTRUCTION DURATION

Phase Name	Start Date	End Date	Days
Site Preparation	06/01/2023	07/26/2023	40
Grading	07/27/2023	12/27/2023	110
Building Construction	12/28/2023	08/28/2024	175
Paving	05/16/2024	08/28/2024	75
Architectural Coating	01/18/2024	08/28/2024	160

3.4.2 CONSTRUCTION EQUIPMENT

Site specific construction fleet may vary due to specific project needs at the time of construction. The associated construction equipment was generally based on CalEEMod defaults. A detailed summary of construction equipment assumptions by phase is provided at Table 3-2. Please refer to specific detailed modeling inputs/outputs contained in Appendix 3.1 of this GHGA.

TABLE 3-2: CONSTRUCTION EQUIPMENT ASSUMPTIONS (1 OF 2)

Phase Name	Equipment	Number	Hours Per Day
Site Preparation	Crawler Tractors	9	8
	Rubber Tired Dozers	6	8
Grading	Crawler Tractors	6	8
	Excavators	6	8
	Graders	3	8
	Rubber Tired Dozers	3	8

TABLE 3-2: CONSTRUCTION EQUIPMENT ASSUMPTIONS (2 OF 2)

Phase Name	Equipment	Number	Hours Per Day
Grading	Scrapers	6	8
Building Construction	Cranes	3	8
	Crawler Tractors	9	8
	Forklifts	9	8
	Generator Sets	3	8
	Welders	3	8
Paving	Pavers	6	8
	Paving Equipment	6	8
	Rollers	6	8
Architectural Coating	Air Compressors	3	8

3.4.3 CONSTRUCTION EMISSIONS SUMMARY

For construction phase Project emissions, GHGs are quantified and amortized over the life of the Project. MDAQMD follows the SCAQMD recommendation in calculating the total GHG emissions for construction activities by amortizing the emissions over the life of the Project by dividing it by a 30- year project life then adding that number to the annual operational phase GHG emissions (48). As such, construction emissions were amortized over a 30-year period and added to the annual operational phase GHG emissions. The amortized construction emissions are presented in Table 3-3.

TABLE 3-3: AMORTIZED ANNUAL CONSTRUCTION EMISSIONS

Year	Emissions (MT/yr)			
	CO ₂	CH ₄	N ₂ O	Total CO ₂ e ⁵
2023	2,348.82	0.45	0.17	2,409.75
2024	2,201.82	0.36	0.06	2,229.77
Total GHG Emissions	4,550.63	0.81	0.23	4,639.52
Amortized Construction Emissions (MTCO₂e)	151.69	0.03	0.01	154.65

3.5 OPERATIONAL EMISSIONS

Project operations would generate CO₂, CH₄, and N₂O emissions. Primary emissions sources would include:

- Area Source (landscape and site maintenance activities)
- Energy Source (combustion emissions associated with natural gas and electricity)
- Mobile Source (vehicles)
- On-Site Cargo Handling Equipment Emissions
- Transportation Refrigeration Units (TRU) Emissions
- Solid Waste
- Water Supply, Treatment, and Distribution

3.5.1 AREA SOURCE EMISSIONS

LANDSCAPE MAINTENANCE EQUIPMENT

Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers used to maintain the landscaping of the Project. The emissions associated with landscape maintenance equipment were calculated based on assumptions provided in CalEEMod.

⁵ CalEEMod reports the most common GHGs emitted which include CO₂, CH₄, and N₂O. These GHGs are then converted into the CO₂e by multiplying the individual GHG by the GWP.

3.5.2 ENERGY SOURCE

COMBUSTION EMISSIONS ASSOCIATED WITH NATURAL GAS AND ELECTRICITY

GHGs are emitted from buildings as a result of activities for which electricity and natural gas are typically used as energy sources. Combustion of any type of fuel emits CO₂ and other GHGs directly into the atmosphere; these emissions are considered direct emissions associated with a building; the building energy use emissions do not include street lighting⁶. GHGs are also emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions. GHG emissions associated with the natural gas and electricity usage associated with the Project were calculated by CalEEMod using default parameters.

3.5.3 MOBILE SOURCE

The Project related GHG emissions derive primarily from vehicle trips generated by the Project, including employee trips to and from the site and truck trips associated with the proposed uses. Trip characteristics available from the *Ottawa Business Center Traffic Assessment* were utilized in this analysis (49). The Project is expected to generate a total of approximately 2,124 two-way vehicular trips per day (1,062 inbound and 1,062 outbound) which includes 454 two-way truck trips per day (227 inbound and 227 outbound) (49).

APPROACH FOR ANALYSIS OF THE PROJECT

To determine emissions from passenger car vehicles, the CalEEMod defaults were utilized for trip length and trip purpose for the proposed industrial land uses. For the proposed industrial uses, it is important to note that although the *Ottawa Business Center Traffic Assessment* does not breakdown passenger cars by type, this analysis assumes that passenger cars include Light-Duty-Auto vehicles (LDA), Light-Duty-Trucks (LDT1⁷ & LDT2⁸), Medium-Duty-Vehicles (MDV), and Motorcycles (MCY) vehicle types. To account for emissions generated by passenger cars, the following fleet mix was utilized in this analysis:

TABLE 3-4: PASSENGER CAR FLEET MIX

Land Use	Vehicle Type	%
High-Cube Fulfillment Center Warehouse/ High-Cube Cold Storage Warehouse	LDA	58.08
	LDT1	6.02
	LDT2	18.55
	MDV	14.66
	MCY	2.69

Note: The Project-specific passenger car fleet mix used in this analysis is based on a proportional

⁶ The CalEEMod emissions inventory model does not include indirect emission related to street lighting. Indirect emissions related to street lighting are expected to be negligible and cannot be accurately quantified at this time as there is insufficient information as to the number and type of street lighting that would occur.

⁷ Vehicles under the LDT1 category have a gross vehicle weight rating (GVWR) of less than 6,000 lbs. and equivalent test weight (ETW) of less than or equal to 3,750 lbs.

⁸ Vehicles under the LDT2 category have a GVWR of less than 6,000 lbs. and ETW between 3,751 lbs. and 5,750 lbs.

split utilizing the default CalEEMod percentages assigned to LDA, LDT1, LDT2, and MDV vehicle types.

To determine emissions from trucks for the proposed industrial uses, the analysis incorporated the SCAQMD recommended truck trip length of 40 miles⁹ and an assumption of 100% primary trips for the proposed industrial land uses. In order to be consistent with the *Ottawa Business Center Traffic Assessment*, trucks are broken down by truck type. The truck fleet mix is estimated by rationing the trip rates for each truck type based on information provided in the *Ottawa Business Center Traffic Assessment*. Heavy trucks are broken down by truck type (or axle type) and are categorized as either Light-Heavy-Duty Trucks (LHDT1¹⁰ & LHDT2¹¹)/2-axle, Medium-Heavy-Duty Trucks (MHDT)/3-axle, and HHDT/4+-axle. To account for emissions generated by trucks, the following fleet mix was utilized in this analysis:

TABLE 3-5: TRUCK FLEET MIX

Land Use	Vehicle Type	%
High-Cube Fulfillment Center Warehouse	LHDT1	8.52
	LHDT2	2.30
	MHDT	10.82
	HHDT	78.36
Land Use	Vehicle Type	%
High-Cube Cold Storage Warehouse	LHDT1	27.30
	LHDT2	7.37
	MHDT	10.67
	HHDT	54.66

Note: Project-specific truck fleet mix is based on the number of trips generated by each truck type (LHDT1, LHDT2, MHDT, and HHDT) relative to the total number of truck trips.

3.5.4 ON-SITE CARGO HANDLING EQUIPMENT EMISSIONS

It is common for warehouse buildings to require the operation of exterior cargo handling equipment in the building’s truck court areas. For this particular Project, on-site modeled operational equipment includes up to four (4) 200 horsepower (hp), compressed natural gas or gasoline-powered tractors/loaders/backhoes operating at 4 hours a day¹² for 365 days of the year.

⁹ The average trip length for heavy trucks were based on the SCAQMD documents for the implementation of the Facility-Based Mobile Source Measures (FBMSMs) adopted in the 2016 AQMP. SCAQMD’s “Preliminary Warehouse Emission Calculations” cites 39.9-mile trip length for heavy-heavy trucks (41). As a conservative measure, a trip length of 40 miles has been utilized for all trucks for the purpose of this analysis (39)

¹⁰ Vehicles under the LHDT1 category have a GVWR of 8,501 to 10,000 lbs.

¹¹ Vehicles under the LHDT2 category have a GVWR of 10,001 to 14,000 lbs.

¹² Based on Table II-3, Port and Rail Cargo Handling Equipment Demographics by Type, from CARB’s Technology Assessment: Mobile Cargo Handling Equipment document, a single piece of equipment could operate up to 2 hours per day (Total Average Annual Activity divided by Total Number Pieces of Equipment). As such, the analysis conservatively assumes that the tractor/loader/backhoe would operate up to 4 hours per day.

3.5.5 TRU EMISSIONS

In order to account for the possibility of refrigerated uses, trucks associated with the cold-storage land use are assumed to also have TRUs. Therefore, for modeling purposes 75 truck have the potential to include TRUs (approximately 33% of all trucks accessing the site). TRUs are accounted for during on-site and off-site travel. The TRU calculations are based on the 2017 Off-road Emissions model, version 1.0.1 (Orion), developed by the CARB. Orion does not provide emission rates per hour or mile as with the on-road emission model and only provides emission inventories. Emission results are produced in tons per day while all activity, fuel consumption and horsepower hours were reported at annual levels. The emission inventory is based on specific assumptions including the average horsepower rating of specific types of equipment and the hours of operation annually. These assumptions are not always consistent with assumptions used in the modeling of project level emissions. Therefore, the emissions inventory was converted into emission rates to accurately calculate emissions from TRU operation associated with project level details. This was accomplished by converting the annual horsepower hours to daily operational characteristics and converting the daily emission levels into hourly emission rates based on the total emission of each criteria pollutant by equipment type and the average daily hours of operation.

3.5.6 SOLID WASTE

Industrial land uses would result in the generation and disposal of solid waste. A percentage of this waste would be diverted from landfills by a variety of means, such as reducing the amount of waste generated, recycling, and/or composting. The remainder of the waste not diverted would be disposed of at a landfill. GHG emissions from landfills are associated with the anaerobic breakdown of material. GHG emissions associated with the disposal of solid waste associated with the proposed Project were calculated by CalEEMod using default parameters.

3.5.7 WATER SUPPLY, TREATMENT, AND DISTRIBUTION

Indirect GHG emissions result from the production of electricity used to convey, treat, and distribute water and wastewater. The amount of electricity required to convey, treat, and distribute water depends on the volume of water as well as the sources of the water. Unless otherwise noted, CalEEMod default parameters were used.

3.6 EMISSIONS SUMMARY

IMPACTS WITHOUT REGULATORY REQUIREMENTS AND PDFs

As shown on Table 3-6, without accounting for applicable regulatory requirements and PDFs, the Project would result in 13,041.59 MTCO₂e/yr.

TABLE 3-6: PROJECT GHG EMISSIONS SUMMARY

Emission Source	Emissions (MT/yr)			
	CO ₂	CH ₄	N ₂ O	Total CO ₂ e
Annual construction-related emissions amortized over 30 years	151.69	0.03	0.01	154.65
Area Source	0.07	1.70E-04	0.00	0.07
Energy Source	2,104.55	0.14	0.03	2,115.47
Mobile Source	8,784.21	0.35	1.14	9,132.69
TRUs Source				200.74
On-Site Equipment Source	203.08	0.07	0.00	204.72
Waste Source	190.15	11.24	0.00	471.08
Water Usage Source	519.43	7.55	0.18	762.16
Total CO₂e (All Sources)	13,041.59			

Source: CalEEMod output, See Appendices 3.1 through 3.3 for detailed model outputs.

3.7 GREENHOUSE GAS EMISSIONS FINDINGS AND RECOMMENDATIONS

3.7.1 GHG IMPACT #1

The Project would not generate direct or indirect greenhouse gas emission that would result in a significant impact on the environment.

As noted in Section 3.2.1, the City has opted to use a non-zero threshold approach based on Approach 2 of the handbook. Threshold 2.5 (Unit-Based Thresholds Based on Market Capture) establishes a numerical threshold based on capture of approximately 90% of emissions from future development, which equates to a threshold of 3,000 MTCO₂e/yr for all projects (50). As noted above, this threshold is based on guidance that is published by the SCAQMD which is more stringent than the MDAQMD's threshold.

The Project will result in approximately 13,041.59 MTCO₂e/yr. As such, the Project would exceed the numeric threshold of 3,000 MTCO₂e/yr if it were applied. Thus, the Project would have the potential to result in a cumulatively considerable impact with respect to GHG emissions.

Project operational-source GHG emissions exceedances of applicable MDAQMD numeric threshold are therefore considered significant and unavoidable. Neither the Project Applicant nor the Lead Agency (City of Victorville) can substantively or materially affect reductions in Project mobile-source emissions beyond the regulatory requirements. As such, although MMs GHG-1, GHG-2, and GHG-3 are required to reduce impacts to the maximum extent feasible, Project operational-source GHG emissions exceedances of applicable MDAQMD numeric thresholds would be significant and unavoidable.

3.7.2 GHG IMPACT #2

The Project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

As previously stated, pursuant to 15604.4 of the *CEQA Guidelines*, a lead agency may rely on qualitative analysis or performance-based standards to determine the significance of impacts from GHG emissions (51). As such, the Project’s consistency with SB 32 (2017 Scoping Plan) and the City’s CAP, is discussed below. It should be noted that the Project’s consistency with the 2017 Scoping Plan also satisfies consistency with AB 32 since the 2017 Scoping Plan is based on the overall targets established by AB 32. Consistency with the 2008 Scoping Plan is not necessary, since the target year for the 2008 Scoping Plan was 2020, and the Project’s buildout year is 2024. As such the 2008 Scoping Plan does not apply and consistency with the 2017 Scoping Plan is relevant. For reasons outlined herein, the proposed Project would result in a less than significant impact with respect to GHG emissions for GHG Impact #2.

2017 SCOPING PLAN CONSISTENCY

The *2017 Scoping Plan Update* reflects the 2030 target of a 40% reduction below 1990 levels, set by Executive Order B-30-15 and codified by SB 32. Table 3-6 summarizes the project’s consistency with the *2017 Scoping Plan*. As summarized, the project will not conflict with any of the provisions of the *Scoping Plan* and in fact supports seven of the action categories.

TABLE 3-6: 2017 SCOPING PLAN CONSISTENCY SUMMARY¹³

Action	Responsible Parties	Consistency
Implement SB 350 by 2030		
Increase the Renewables Portfolio Standard to 50% of retail sales by 2030 and ensure grid reliability.	CPUC, CEC, CARB	Consistent. The Project would use energy from Southern California Edison (SCE). SCE has committed to diversify its portfolio of energy sources by increasing energy from wind and solar sources. The Project would not interfere with or obstruct SCE energy source diversification efforts.
Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030.		Consistent. The Project would be constructed in compliance with current California Building Code requirements. Specifically, new buildings must achieve compliance with 2019 Building and Energy Efficiency Standards and the 2019 California Green Building Standards

¹³ Measures can be found at the following link: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

Action	Responsible Parties	Consistency
<p>Reduce GHG emissions in the electricity sector through the implementation of the above measures and other actions as modeled in Integrated Resource Planning (IRP) to meet GHG emissions reductions planning targets in the IRP process. Load-serving entities and publicly- owned utilities meet GHG emissions reductions planning targets through a combination of measures as described in IRPs.</p>		<p>requirements. The proposed Project includes energy efficient field lighting and fixtures that meet the current Title 24 Standards throughout the Project Site and would be a modern development with energy efficient boilers, heaters, and air conditioning systems.</p>
<p>Implement Mobile Source Strategy (Cleaner Technology and Fuels)</p>		
<p>At least 1.5 million zero emission and plug-in hybrid light-duty EVs by 2025.</p>	<p>CARB, California State Transportation Agency (CalSTA), Strategic Growth Council (SGC), California Department of Transportation (Caltrans), CEC, OPR, Local Agencies</p>	<p>Consistent. This is a CARB Mobile Source Strategy. The Project would not obstruct or interfere with CARB zero emission and plug-in hybrid light-duty EV 2025 targets. As this is a CARB enforced standard, vehicles that access the Project are required to comply with the standards and will therefore comply with the strategy.</p>
<p>At least 4.2 million zero emission and plug-in hybrid light-duty EVs by 2030.</p>		<p>Consistent. This is a CARB Mobile Source Strategy. The Project would not obstruct or interfere with CARB zero emission and plug-in hybrid light-duty EV 2030 targets. As this is a CARB enforced standard, vehicles that access the Project are required to comply with the standards and will therefore comply with the strategy.</p>
<p>Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean cars regulations.</p>		<p>Consistent. This is a CARB Mobile Source Strategy. The Project would not obstruct or interfere with CARB efforts to further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean cars regulations. As this is a CARB enforced standard, vehicles that access the Project are required to comply with the standards and will therefore comply with the strategy.</p>
<p>Medium- and Heavy-Duty GHG Phase 2.</p>		<p>Consistent. This is a CARB Mobile Source Strategy. The Project would not obstruct or interfere with CARB efforts to implement Medium- and Heavy-Duty GHG Phase 2. As this is a CARB enforced standard, vehicles that access the Project are required to comply with the standards and will therefore comply with the strategy.</p>

Action	Responsible Parties	Consistency
<p>Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20% of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100% of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NO_x standard.</p>		<p>Not applicable. This measure is not within the purview of this Project.</p>
<p>Last Mile Delivery: New regulation that would result in the use of low NO_x or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5% of new Class 3-7 truck sales in local fleets starting in 2020, increasing to 10% in 2025 and remaining flat through 2030.</p>		<p>Not applicable. This Project is not responsible for implementation of SB 375 and would therefore not conflict with this measure</p>
<p>Further reduce VMT through continued implementation of SB 375 and regional Sustainable Communities Strategies; forthcoming statewide implementation of SB 743; and potential additional VMT reduction strategies not specified in the Mobile Source Strategy but included in the document "Potential VMT Reduction Strategies for Discussion."</p>		<p>Consistent. This Project would not obstruct or interfere with implementation of SB 375 and would therefore not conflict with this measure.</p>
<p>Increase stringency of SB 375 Sustainable Communities Strategy (2035 targets).</p>	<p>CARB</p>	<p>Not applicable. The Project is not within the purview of SB 375 and would therefore not conflict with this measure.</p>

Action	Responsible Parties	Consistency
<p>Harmonize project performance with emissions reductions and increase competitiveness of transit and active transportation modes (e.g. via guideline documents, funding programs, project selection, etc.).</p>	<p>CalSTA, SGC, OPR, CARB, Governor’s Office of Business and Economic Development (GO-Biz), California Infrastructure and Economic Development Bank (IBank), Department of Finance (DOF), California Transportation Commission (CTC), Caltrans</p>	<p>Consistent. The Project would not obstruct or interfere with agency efforts to harmonize transportation facility project performance with emissions reductions and increase competitiveness of transit and active transportation modes.</p>
<p>By 2019, develop pricing policies to support low-GHG transportation (e.g. low-emission vehicle zones for heavy duty, road user, parking pricing, transit discounts).</p>	<p>CalSTA, Caltrans, CTC, OPR, SGC, CARB</p>	<p>Consistent. The Project would not obstruct or interfere with agency efforts to develop pricing policies to support low-GHG transportation.</p>
<p>Implement California Sustainable Freight Action Plan</p>		
<p>Improve freight system efficiency.</p>	<p>CalSTA, CalEPA, CNRA, CARB, Caltrans,</p>	<p>Consistent. This measure would apply to all trucks accessing the Project sites, this may include existing trucks or new trucks that are part of the statewide goods movement sector. The Project would not obstruct or interfere with agency efforts to Improve freight system efficiency.</p>
<p>Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030.</p>	<p>CEC, GO-Biz</p>	<p>Not applicable. This measure is not within the purview of this Project.</p>
<p>Adopt a Low Carbon Fuel Standard with a Carbon Intensity reduction of 18%.</p>	<p>CARB</p>	<p>Consistent. When adopted, this measure would apply to all fuel purchased and used by the Project in the state. The Project would not obstruct or interfere with agency efforts to adopt a Low Carbon</p>

Action	Responsible Parties	Consistency
		Fuel Standard with a Carbon Intensity reduction of 18%.
Implement the Short-Lived Climate Pollutant Strategy (SLPS) by 2030		
40% reduction in methane and hydrofluorocarbon emissions below 2013 levels.	CARB, CalRecycle, CDFA, California State Water Resource Control Board (SWRCB), Local Air Districts	Not applicable. This measure is not within the purview of this Project.
50% reduction in black carbon emissions below 2013 levels.		
By 2019, develop regulations and programs to support organic waste landfill reduction goals in the SLCP and SB 1383.	CARB, CalRecycle, CDFA, SWRCB, Local Air Districts	Not applicable. This measure is not within the purview of this Project.
Implement the post-2020 Cap-and-Trade Program with declining annual caps.	CARB	Consistent. The Project would be required to comply with any applicable Cap-and-Trade Program provisions. The Project would not obstruct or interfere agency efforts to implement the post-2020 Cap-and-Trade Program.
By 2018, develop Integrated Natural and Working Lands Implementation Plan to secure California’s land base as a net carbon sink		
Protect land from conversion through conservation easements and other incentives.	CNRA, Departments Within CDFA, CalEPA, CARB	Not applicable. This measure is not within the purview of this Project. However, the Project site is not an identified property that needs to be conserved.
Increase the long-term resilience of carbon storage in the land base and enhance sequestration capacity		Not applicable. This measure is not within the purview of this Project. The majority of the site is already currently developed.
Utilize wood and agricultural products to increase the amount of carbon stored in the natural and built environments		Consistent. To the extent appropriate for the proposed industrial buildings, wood products would be used in construction, including for the roof structure. Additionally, the proposed project includes landscaping, including.
Establish scenario projections to serve as the foundation for the Implementation Plan		Not applicable. This measure is not within the purview of this Project.

Action	Responsible Parties	Consistency
Implement Forest Carbon Plan	CNRA, California Department of Forestry and Fire Protection (CAL FIRE), CalEPA and Departments Within	Not applicable. This measure is not within the purview of this Project.
Identify and expand funding and financing mechanisms to support GHG reductions across all sectors.	State Agencies & Local Agencies	Not applicable. This measure is not within the purview of this Project.

As shown above, the Project would not conflict with any of the *2017 Scoping Plan* elements as any regulations adopted would apply directly or indirectly to the Project. Further, recent studies show that the State’s existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40% below 1990 levels by 2030 (37).

CONSISTENCY WITH THE CAP

As outlined in MM GHG-3, the Project will be required to achieve a minimum 45 points per the City’s Screening Tables and is therefore consistent with the City of Victorville’s adopted CAP. As noted previously, the updated Screening Table is currently pending approval from SBCTA; however, the Project conforms to the current table and the Scoping Plan.

Impacts regarding the Project’s consistency with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of GHG emissions and generation of GHG emissions were determined to be less than significant. However, despite plan consistency, the Project’s long-term operational GHG emissions would exceed the significance threshold of 3,000 MTCO₂e per year, even after implementation of all feasible mitigation measures. As such, a significant and unavoidable impact would occur as a result of the proposed Project.

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5 CERTIFICATION

The contents of this greenhouse gas study report represent an accurate depiction of the greenhouse gas impacts associated with the proposed Ottawa Business Center Project. The information contained in this greenhouse gas report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at hqureshi@urbanxroads.com.

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EDUCATION

Master of Science in Environmental Studies
California State University, Fullerton • May, 2010

Bachelor of Arts in Environmental Analysis and Design
University of California, Irvine • June, 2006

PROFESSIONAL AFFILIATIONS

AEP – Association of Environmental Planners
AWMA – Air and Waste Management Association
ASTM – American Society for Testing and Materials

PROFESSIONAL CERTIFICATIONS

Planned Communities and Urban Infill – Urban Land Institute • June 2011
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April 2008
Principles of Ambient Air Monitoring – California Air Resources Board • August 2007
AB2588 Regulatory Standards – Trinity Consultants • November 2006
Air Dispersion Modeling – Lakes Environmental • June 2006

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APPENDIX 3.1:

CALEEMOD ANNUAL CONSTRUCTION EMISSIONS MODEL OUTPUTS

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Ottawa Business Center (Construction - Mitigated)

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	200.00	1000sqft	4.59	200,000.00	0
Unrefrigerated Warehouse-No Rail	796.52	1000sqft	18.29	796,520.00	0
Other Asphalt Surfaces	1,131.28	1000sqft	25.97	1,131,280.00	0
Parking Lot	641.00	Space	3.07	133,859.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	32
Climate Zone	10			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	327.92	CH4 Intensity (lb/MWhr)	0.028	N2O Intensity (lb/MWhr)	0.003

1.3 User Entered Comments & Non-Default Data

- Project Characteristics - Intensity factors adjusted to reflect the RPS for the 2024 OPY
- Land Use - Total Project area is 51.92 acres
- Construction Phase - Construction anticipated to begin Summer 2023 and end Summer 2024
- Off-road Equipment - Construction equipment adjusted based on the size of the Project
- Off-road Equipment - Construction equipment adjusted based on the size of the Project
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Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT - Vendor Trips adjusted based on CalEEMod defaults for Building Construction and number of days for Site Preparation, Grading, and Building Construction

Grading - Analysis conservatively assumes that up to 10 acres can be disturbed per day

Architectural Coating - Rule 1113

Vehicle Trips - Construction run only

Energy Use - Construction run only

Water And Wastewater - Construction run only

Solid Waste - Construction run only

Construction Off-road Equipment Mitigation - MM AQ-1: Tier 4 engines for all equipment operating at >150 HP during Grading

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	1,110.00	175.00
tblConstructionPhase	NumDays	75.00	160.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	LightingElect	2.37	0.00
tblEnergyUse	LightingElect	1.17	0.00
tblEnergyUse	NT24E	36.52	0.00
tblEnergyUse	NT24E	0.82	0.00

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	NT24NG	48.51	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.95	0.00
tblEnergyUse	T24E	0.33	0.00
tblEnergyUse	T24NG	3.22	0.00
tblEnergyUse	T24NG	1.98	0.00
tblGrading	AcresOfGrading	1,320.00	1,100.00
tblGrading	AcresOfGrading	300.00	400.00
tblGrading	MaterialImported	0.00	261,395.00
tblLandUse	LandUseSquareFeet	256,400.00	133,859.00
tblLandUse	LotAcreage	5.77	3.07
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.028
tblProjectCharacteristics	CO2IntensityFactor	390.98	327.92
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.003
tblSolidWaste	SolidWasteGenerationRate	188.00	0.00
tblSolidWaste	SolidWasteGenerationRate	748.73	0.00
tblTripsAndVMT	VendorTripNumber	0.00	46.00
tblTripsAndVMT	VendorTripNumber	0.00	126.00
tblTripsAndVMT	VendorTripNumber	371.00	200.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	PR_TP	92.00	0.00
tblVehicleTrips	PR_TP	92.00	0.00
tblVehicleTrips	ST_TR	2.12	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	2.12	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	2.12	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	46,250,000.00	0.00
tblWater	IndoorWaterUseRate	184,195,250.00	0.00

2.0 Emissions Summary

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.8764	10.9542	6.2613	0.0254	2.9055	0.3746	3.2801	1.1356	0.3455	1.4810	0.0000	2,348.8186	2,348.8186	0.4509	0.1666	2,409.7498
2024	3.8685	8.6224	9.2682	0.0245	0.9137	0.3430	1.2567	0.2454	0.3206	0.5660	0.0000	2,201.8176	2,201.8176	0.3638	0.0633	2,229.7735
Maximum	3.8685	10.9542	9.2682	0.0254	2.9055	0.3746	3.2801	1.1356	0.3455	1.4810	0.0000	2,348.8186	2,348.8186	0.4509	0.1666	2,409.7498

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.4875	6.1189	7.1574	0.0254	2.9055	0.1773	3.0828	1.1356	0.1652	1.3008	0.0000	2,348.8171	2,348.8171	0.4509	0.1666	2,409.7483
2024	3.8048	7.7796	9.5279	0.0245	0.9137	0.3097	1.2233	0.2454	0.2901	0.5355	0.0000	2,201.8161	2,201.8161	0.3638	0.0633	2,229.7720
Maximum	3.8048	7.7796	9.5279	0.0254	2.9055	0.3097	3.0828	1.1356	0.2901	1.3008	0.0000	2,348.8171	2,348.8171	0.4509	0.1666	2,409.7483

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	9.54	29.00	-7.44	0.00	0.00	32.14	5.08	0.00	31.64	10.29	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2023	8-31-2023	4.2313	2.6183
2	9-1-2023	11-30-2023	5.7376	2.9615
3	12-1-2023	2-29-2024	4.4612	3.3967
4	3-1-2024	5-31-2024	4.5650	4.2207
5	6-1-2024	8-31-2024	5.2734	4.9403
		Highest	5.7376	4.9403

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.1747	2.3000e-004	0.0254	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0495	0.0495	1.3000e-004	0.0000	0.0527
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.1747	2.3000e-004	0.0254	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0495	0.0495	1.3000e-004	0.0000	0.0527

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.1747	2.3000e-004	0.0254	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0495	0.0495	1.3000e-004	0.0000	0.0527
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.1747	2.3000e-004	0.0254	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0495	0.0495	1.3000e-004	0.0000	0.0527

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2023	7/26/2023	5	40	
2	Grading	Grading	7/27/2023	12/27/2023	5	110	
3	Building Construction	Building Construction	12/28/2023	8/28/2024	5	175	

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Architectural Coating	Architectural Coating	1/18/2024	8/28/2024	5	160
5	Paving	Paving	5/16/2024	8/28/2024	5	75

Acres of Grading (Site Preparation Phase): 400

Acres of Grading (Grading Phase): 1100

Acres of Paving: 29.04

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,494,780; Non-Residential Outdoor: 498,260; Striped Parking Area: 75,908 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crawler Tractors	9	8.00	212	0.43
Site Preparation	Rubber Tired Dozers	6	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Crawler Tractors	6	8.00	212	0.43
Grading	Excavators	6	8.00	158	0.38
Grading	Graders	3	8.00	187	0.41
Grading	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	6	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	3	8.00	231	0.29
Building Construction	Crawler Tractors	9	8.00	212	0.43
Building Construction	Forklifts	9	8.00	89	0.20
Building Construction	Generator Sets	3	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	3	8.00	78	0.48
Paving	Pavers	6	8.00	130	0.42
Paving	Paving Equipment	6	8.00	132	0.36

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Paving	Rollers	6	8.00	80	0.38
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Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	15	38.00	46.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	24	60.00	126.00	32,674.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	27	950.00	200.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	3	190.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	18	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.9348	0.0000	0.9348	0.4201	0.0000	0.4201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1621	1.7777	0.7766	2.4300e-003		0.0743	0.0743		0.0683	0.0683	0.0000	213.8498	213.8498	0.0692	0.0000	215.5788
Total	0.1621	1.7777	0.7766	2.4300e-003	0.9348	0.0743	1.0090	0.4201	0.0683	0.4885	0.0000	213.8498	213.8498	0.0692	0.0000	215.5788

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3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0600e-003	0.0352	0.0140	1.7000e-004	6.1400e-003	2.6000e-004	6.3900e-003	1.7700e-003	2.5000e-004	2.0200e-003	0.0000	16.8715	16.8715	4.4000e-004	2.4900e-003	17.6252
Worker	2.2100e-003	1.5600e-003	0.0192	5.0000e-005	6.1200e-003	3.0000e-005	6.1600e-003	1.6300e-003	3.0000e-005	1.6600e-003	0.0000	4.8172	4.8172	1.5000e-004	1.4000e-004	4.8630
Total	3.2700e-003	0.0368	0.0332	2.2000e-004	0.0123	2.9000e-004	0.0126	3.4000e-003	2.8000e-004	3.6800e-003	0.0000	21.6887	21.6887	5.9000e-004	2.6300e-003	22.4882

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.9348	0.0000	0.9348	0.4201	0.0000	0.4201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1235	1.3016	0.8636	2.4300e-003		0.0538	0.0538		0.0496	0.0496	0.0000	213.8495	213.8495	0.0692	0.0000	215.5786
Total	0.1235	1.3016	0.8636	2.4300e-003	0.9348	0.0538	0.9885	0.4201	0.0496	0.4697	0.0000	213.8495	213.8495	0.0692	0.0000	215.5786

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3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0600e-003	0.0352	0.0140	1.7000e-004	6.1400e-003	2.6000e-004	6.3900e-003	1.7700e-003	2.5000e-004	2.0200e-003	0.0000	16.8715	16.8715	4.4000e-004	2.4900e-003	17.6252
Worker	2.2100e-003	1.5600e-003	0.0192	5.0000e-005	6.1200e-003	3.0000e-005	6.1600e-003	1.6300e-003	3.0000e-005	1.6600e-003	0.0000	4.8172	4.8172	1.5000e-004	1.4000e-004	4.8630
Total	3.2700e-003	0.0368	0.0332	2.2000e-004	0.0123	2.9000e-004	0.0126	3.4000e-003	2.8000e-004	3.6800e-003	0.0000	21.6887	21.6887	5.9000e-004	2.6300e-003	22.4882

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5953	0.0000	1.5953	0.6120	0.0000	0.6120	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6447	6.8794	4.6325	0.0118		0.2756	0.2756		0.2536	0.2536	0.0000	1,036.552 2	1,036.552 2	0.3352	0.0000	1,044.933 3
Total	0.6447	6.8794	4.6325	0.0118	1.5953	0.2756	1.8709	0.6120	0.2536	0.8655	0.0000	1,036.552 2	1,036.552 2	0.3352	0.0000	1,044.933 3

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3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0381	1.9001	0.5513	9.1800e-003	0.2814	0.0189	0.3003	0.0773	0.0181	0.0954	0.0000	907.8549	907.8549	0.0387	0.1439	951.7038
Vendor	7.9700e-003	0.2652	0.1051	1.3100e-003	0.0462	1.9300e-003	0.0482	0.0133	1.8500e-003	0.0152	0.0000	127.0863	127.0863	3.3100e-003	0.0188	132.7634
Worker	9.6100e-003	6.7600e-003	0.0835	2.3000e-004	0.0266	1.4000e-004	0.0267	7.0600e-003	1.3000e-004	7.1900e-003	0.0000	20.9168	20.9168	6.5000e-004	6.1000e-004	21.1157
Total	0.0557	2.1721	0.7399	0.0107	0.3542	0.0210	0.3752	0.0977	0.0201	0.1178	0.0000	1,055.8580	1,055.8580	0.0426	0.1633	1,105.5829

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5953	0.0000	1.5953	0.6120	0.0000	0.6120	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2951	2.5308	5.4387	0.0118		0.0993	0.0993		0.0925	0.0925	0.0000	1,036.5510	1,036.5510	0.3352	0.0000	1,044.9320
Total	0.2951	2.5308	5.4387	0.0118	1.5953	0.0993	1.6946	0.6120	0.0925	0.7044	0.0000	1,036.5510	1,036.5510	0.3352	0.0000	1,044.9320

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3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0381	1.9001	0.5513	9.1800e-003	0.2814	0.0189	0.3003	0.0773	0.0181	0.0954	0.0000	907.8549	907.8549	0.0387	0.1439	951.7038
Vendor	7.9700e-003	0.2652	0.1051	1.3100e-003	0.0462	1.9300e-003	0.0482	0.0133	1.8500e-003	0.0152	0.0000	127.0863	127.0863	3.3100e-003	0.0188	132.7634
Worker	9.6100e-003	6.7600e-003	0.0835	2.3000e-004	0.0266	1.4000e-004	0.0267	7.0600e-003	1.3000e-004	7.1900e-003	0.0000	20.9168	20.9168	6.5000e-004	6.1000e-004	21.1157
Total	0.0557	2.1721	0.7399	0.0107	0.3542	0.0210	0.3752	0.0977	0.0201	0.1178	0.0000	1,055.8580	1,055.8580	0.0426	0.1633	1,105.5829

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.6600e-003	0.0786	0.0520	1.3000e-004		3.3500e-003	3.3500e-003		3.1300e-003	3.1300e-003	0.0000	11.1808	11.1808	3.0200e-003	0.0000	11.2563
Total	7.6600e-003	0.0786	0.0520	1.3000e-004		3.3500e-003	3.3500e-003		3.1300e-003	3.1300e-003	0.0000	11.1808	11.1808	3.0200e-003	0.0000	11.2563

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3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3000e-004	7.6500e-003	3.0300e-003	4.0000e-005	1.3300e-003	6.0000e-005	1.3900e-003	3.9000e-004	5.0000e-005	4.4000e-004	0.0000	3.6677	3.6677	1.0000e-004	5.4000e-004	3.8316
Worker	2.7700e-003	1.9400e-003	0.0240	6.0000e-005	7.6600e-003	4.0000e-005	7.7000e-003	2.0300e-003	4.0000e-005	2.0700e-003	0.0000	6.0215	6.0215	1.9000e-004	1.8000e-004	6.0788
Total	3.0000e-003	9.5900e-003	0.0271	1.0000e-004	8.9900e-003	1.0000e-004	9.0900e-003	2.4200e-003	9.0000e-005	2.5100e-003	0.0000	9.6892	9.6892	2.9000e-004	7.2000e-004	9.9103

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8700e-003	0.0680	0.0550	1.3000e-004		2.9300e-003	2.9300e-003		2.7400e-003	2.7400e-003	0.0000	11.1808	11.1808	3.0200e-003	0.0000	11.2563
Total	6.8700e-003	0.0680	0.0550	1.3000e-004		2.9300e-003	2.9300e-003		2.7400e-003	2.7400e-003	0.0000	11.1808	11.1808	3.0200e-003	0.0000	11.2563

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3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3000e-004	7.6500e-003	3.0300e-003	4.0000e-005	1.3300e-003	6.0000e-005	1.3900e-003	3.9000e-004	5.0000e-005	4.4000e-004	0.0000	3.6677	3.6677	1.0000e-004	5.4000e-004	3.8316
Worker	2.7700e-003	1.9400e-003	0.0240	6.0000e-005	7.6600e-003	4.0000e-005	7.7000e-003	2.0300e-003	4.0000e-005	2.0700e-003	0.0000	6.0215	6.0215	1.9000e-004	1.8000e-004	6.0788
Total	3.0000e-003	9.5900e-003	0.0271	1.0000e-004	8.9900e-003	1.0000e-004	9.0900e-003	2.4200e-003	9.0000e-005	2.5100e-003	0.0000	9.6892	9.6892	2.9000e-004	7.2000e-004	9.9103

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.6247	6.3122	4.4447	0.0112		0.2621	0.2621		0.2444	0.2444	0.0000	967.4038	967.4038	0.2606	0.0000	973.9180
Total	0.6247	6.3122	4.4447	0.0112		0.2621	0.2621		0.2444	0.2444	0.0000	967.4038	967.4038	0.2606	0.0000	973.9180

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3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0194	0.6682	0.2579	3.2200e-003	0.1154	4.7500e-003	0.1202	0.0333	4.5400e-003	0.0379	0.0000	312.8926	312.8926	8.0000e-003	0.0462	326.8639
Worker	0.2224	0.1497	1.9419	5.4500e-003	0.6622	3.3000e-003	0.6655	0.1759	3.0400e-003	0.1789	0.0000	509.7597	509.7597	0.0147	0.0142	514.3500
Total	0.2418	0.8179	2.1998	8.6700e-003	0.7776	8.0500e-003	0.7857	0.2092	7.5800e-003	0.2168	0.0000	822.6523	822.6523	0.0227	0.0604	841.2140

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5610	5.4695	4.7044	0.0112		0.2287	0.2287		0.2139	0.2139	0.0000	967.4027	967.4027	0.2606	0.0000	973.9168
Total	0.5610	5.4695	4.7044	0.0112		0.2287	0.2287		0.2139	0.2139	0.0000	967.4027	967.4027	0.2606	0.0000	973.9168

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3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0194	0.6682	0.2579	3.2200e-003	0.1154	4.7500e-003	0.1202	0.0333	4.5400e-003	0.0379	0.0000	312.8926	312.8926	8.0000e-003	0.0462	326.8639
Worker	0.2224	0.1497	1.9419	5.4500e-003	0.6622	3.3000e-003	0.6655	0.1759	3.0400e-003	0.1789	0.0000	509.7597	509.7597	0.0147	0.0142	514.3500
Total	0.2418	0.8179	2.1998	8.6700e-003	0.7776	8.0500e-003	0.7857	0.2092	7.5800e-003	0.2168	0.0000	822.6523	822.6523	0.0227	0.0604	841.2140

3.5 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.7492					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0578	0.3900	0.5792	9.5000e-004		0.0195	0.0195		0.0195	0.0195	0.0000	81.7041	81.7041	4.6000e-003	0.0000	81.8191
Total	2.8071	0.3900	0.5792	9.5000e-004		0.0195	0.0195		0.0195	0.0195	0.0000	81.7041	81.7041	4.6000e-003	0.0000	81.8191

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3.5 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0411	0.0277	0.3592	1.0100e-003	0.1225	6.1000e-004	0.1231	0.0325	5.6000e-004	0.0331	0.0000	94.2908	94.2908	2.7200e-003	2.6200e-003	95.1399
Total	0.0411	0.0277	0.3592	1.0100e-003	0.1225	6.1000e-004	0.1231	0.0325	5.6000e-004	0.0331	0.0000	94.2908	94.2908	2.7200e-003	2.6200e-003	95.1399

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.7492					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0578	0.3900	0.5792	9.5000e-004		0.0195	0.0195		0.0195	0.0195	0.0000	81.7040	81.7040	4.6000e-003	0.0000	81.8190
Total	2.8071	0.3900	0.5792	9.5000e-004		0.0195	0.0195		0.0195	0.0195	0.0000	81.7040	81.7040	4.6000e-003	0.0000	81.8190

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0411	0.0277	0.3592	1.0100e-003	0.1225	6.1000e-004	0.1231	0.0325	5.6000e-004	0.0331	0.0000	94.2908	94.2908	2.7200e-003	2.6200e-003	95.1399
Total	0.0411	0.0277	0.3592	1.0100e-003	0.1225	6.1000e-004	0.1231	0.0325	5.6000e-004	0.0331	0.0000	94.2908	94.2908	2.7200e-003	2.6200e-003	95.1399

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1112	1.0715	1.6454	2.5700e-003		0.0527	0.0527		0.0485	0.0485	0.0000	225.2985	225.2985	0.0729	0.0000	227.1201
Paving	0.0380					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1492	1.0715	1.6454	2.5700e-003		0.0527	0.0527		0.0485	0.0485	0.0000	225.2985	225.2985	0.0729	0.0000	227.1201

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5700e-003	3.0700e-003	0.0399	1.1000e-004	0.0136	7.0000e-005	0.0137	3.6100e-003	6.0000e-005	3.6700e-003	0.0000	10.4681	10.4681	3.0000e-004	2.9000e-004	10.5624
Total	4.5700e-003	3.0700e-003	0.0399	1.1000e-004	0.0136	7.0000e-005	0.0137	3.6100e-003	6.0000e-005	3.6700e-003	0.0000	10.4681	10.4681	3.0000e-004	2.9000e-004	10.5624

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1112	1.0715	1.6454	2.5700e-003		0.0527	0.0527		0.0485	0.0485	0.0000	225.2982	225.2982	0.0729	0.0000	227.1199
Paving	0.0380					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1492	1.0715	1.6454	2.5700e-003		0.0527	0.0527		0.0485	0.0485	0.0000	225.2982	225.2982	0.0729	0.0000	227.1199

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5700e-003	3.0700e-003	0.0399	1.1000e-004	0.0136	7.0000e-005	0.0137	3.6100e-003	6.0000e-005	3.6700e-003	0.0000	10.4681	10.4681	3.0000e-004	2.9000e-004	10.5624
Total	4.5700e-003	3.0700e-003	0.0399	1.1000e-004	0.0136	7.0000e-005	0.0137	3.6100e-003	6.0000e-005	3.6700e-003	0.0000	10.4681	10.4681	3.0000e-004	2.9000e-004	10.5624

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.1747	2.3000e-004	0.0254	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0495	0.0495	1.3000e-004	0.0000	0.0527
Unmitigated	5.1747	2.3000e-004	0.0254	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0495	0.0495	1.3000e-004	0.0000	0.0527

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9737					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.3500e-003	2.3000e-004	0.0254	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0495	0.0495	1.3000e-004	0.0000	0.0527
Total	5.1747	2.3000e-004	0.0254	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0495	0.0495	1.3000e-004	0.0000	0.0527

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9737					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.3500e-003	2.3000e-004	0.0254	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0495	0.0495	1.3000e-004	0.0000	0.0527
Total	5.1747	2.3000e-004	0.0254	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0495	0.0495	1.3000e-004	0.0000	0.0527

7.0 Water Detail

7.1 Mitigation Measures Water

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Ottawa Business Center (Construction - Mitigated) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number
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11.0 Vegetation

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APPENDIX 3.2:

**CALEEMOD ANNUAL OPERATIONAL EMISSIONS MODEL OUTPUTS (HIGH-CUBE
FULFILLMENT CENTER WAREHOUSE)**

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Ottawa Business Center (High-Cube Fulfillment Center Operations)

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	796.52	1000sqft	18.29	796,520.00	0
User Defined Industrial	796.52	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	32
Climate Zone	10			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	327.92	CH4 Intensity (lb/MWhr)	0.028	N2O Intensity (lb/MWhr)	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Intensity factors adjusted to reflect the RPS for the 2024 OPY

Land Use -

Construction Phase - Operations run only

Off-road Equipment - Operations run only

Vehicle Trips - Trip characteristics based on information provided in the Traffic Analysis

Fleet Mix - Passenger Car Mix estimated based on the CalEEMod default fleet mix and the ratio of the vehicle classes (LDA, LDT1, LDT2, MDV, & MCY). Truck Mix based on information in the Traffic Analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	PhaseEndDate	6/28/2023	5/31/2023
tblFleetMix	HHD	0.02	0.00

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblFleetMix	HHD	0.02	0.78
tblFleetMix	LDA	0.54	0.58
tblFleetMix	LDA	0.54	0.00
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT1	0.06	0.00
tblFleetMix	LDT2	0.17	0.19
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD1	0.03	0.09
tblFleetMix	LHD2	7.1040e-003	0.00
tblFleetMix	LHD2	7.1040e-003	0.02
tblFleetMix	MCY	0.03	0.03
tblFleetMix	MCY	0.03	0.00
tblFleetMix	MDV	0.14	0.15
tblFleetMix	MDV	0.14	0.00
tblFleetMix	MH	4.8300e-003	0.00
tblFleetMix	MH	4.8300e-003	0.00
tblFleetMix	MHD	0.01	0.00
tblFleetMix	MHD	0.01	0.11
tblFleetMix	OBUS	5.5400e-004	0.00
tblFleetMix	OBUS	5.5400e-004	0.00
tblFleetMix	SBUS	9.5400e-004	0.00
tblFleetMix	SBUS	9.5400e-004	0.00
tblFleetMix	UBUS	2.5100e-004	0.00
tblFleetMix	UBUS	2.5100e-004	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.028

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblProjectCharacteristics	CO2IntensityFactor	390.98	327.92
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.003
tblVehicleTrips	CW_TL	9.50	40.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	1.74	1.49
tblVehicleTrips	ST_TR	0.00	0.32
tblVehicleTrips	SU_TR	1.74	1.65
tblVehicleTrips	SU_TR	0.00	0.36
tblVehicleTrips	WD_TR	1.74	1.75
tblVehicleTrips	WD_TR	0.00	0.38

2.0 Emissions Summary

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

		Highest	
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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0351	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Energy	8.6300e-003	0.0785	0.0659	4.7000e-004		5.9600e-003	5.9600e-003		5.9600e-003	5.9600e-003	0.0000	360.3000	360.3000	0.0251	4.0800e-003	362.1438
Mobile	0.8508	10.5591	9.1616	0.0652	3.3334	0.1118	3.4452	0.9089	0.1067	1.0156	0.0000	6,343.3295	6,343.3295	0.2674	0.8260	6,596.1655
Waste						0.0000	0.0000		0.0000	0.0000	151.9854	0.0000	151.9854	8.9821	0.0000	376.5375
Water						0.0000	0.0000		0.0000	0.0000	58.4367	356.7438	415.1804	6.0325	0.1450	609.1973
Total	4.8946	10.6378	9.2421	0.0656	3.3334	0.1178	3.4512	0.9089	0.1127	1.0216	210.4221	7,060.4017	7,270.8238	15.3071	0.9751	7,944.0744

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0351	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Energy	8.6300e-003	0.0785	0.0659	4.7000e-004		5.9600e-003	5.9600e-003		5.9600e-003	5.9600e-003	0.0000	360.3000	360.3000	0.0251	4.0800e-003	362.1438
Mobile	0.8508	10.5591	9.1616	0.0652	3.3334	0.1118	3.4452	0.9089	0.1067	1.0156	0.0000	6,343.3295	6,343.3295	0.2674	0.8260	6,596.1655
Waste						0.0000	0.0000		0.0000	0.0000	151.9854	0.0000	151.9854	8.9821	0.0000	376.5375
Water						0.0000	0.0000		0.0000	0.0000	58.4367	356.7438	415.1804	6.0325	0.1450	609.1973
Total	4.8946	10.6378	9.2421	0.0656	3.3334	0.1178	3.4512	0.9089	0.1127	1.0216	210.4221	7,060.4017	7,270.8238	15.3071	0.9751	7,944.0744

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2023	5/31/2023	5	0	

Acres of Grading (Site Preparation Phase): 0

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8508	10.5591	9.1616	0.0652	3.3334	0.1118	3.4452	0.9089	0.1067	1.0156	0.0000	6,343.3295	6,343.3295	0.2674	0.8260	6,596.1655
Unmitigated	0.8508	10.5591	9.1616	0.0652	3.3334	0.1118	3.4452	0.9089	0.1067	1.0156	0.0000	6,343.3295	6,343.3295	0.2674	0.8260	6,596.1655

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	1,393.99	1,184.90	1310.36	3,947,682	3,947,682
User Defined Industrial	304.03	258.39	285.79	4,293,829	4,293,829
Total	1,698.02	1,443.29	1,596.15	8,241,511	8,241,511

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3
User Defined Industrial	40.00	7.30	7.30	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.580800	0.060200	0.185500	0.146600	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.026900	0.000000	0.000000

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

User Defined Industrial	0.000000	0.000000	0.000000	0.000000	0.085200	0.023000	0.108200	0.783600	0.000000	0.000000	0.000000	0.000000	0.000000
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	274.8643	274.8643	0.0235	2.5100e-003	276.2004
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	274.8643	274.8643	0.0235	2.5100e-003	276.2004
Natural Gas Mitigated	8.6300e-003	0.0785	0.0659	4.7000e-004		5.9600e-003	5.9600e-003		5.9600e-003	5.9600e-003	0.0000	85.4357	85.4357	1.6400e-003	1.5700e-003	85.9434
Natural Gas Unmitigated	8.6300e-003	0.0785	0.0659	4.7000e-004		5.9600e-003	5.9600e-003		5.9600e-003	5.9600e-003	0.0000	85.4357	85.4357	1.6400e-003	1.5700e-003	85.9434

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	1.60101e+006	8.6300e-003	0.0785	0.0659	4.7000e-004		5.9600e-003	5.9600e-003		5.9600e-003	5.9600e-003	0.0000	85.4357	85.4357	1.6400e-003	1.5700e-003	85.9434
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		8.6300e-003	0.0785	0.0659	4.7000e-004		5.9600e-003	5.9600e-003		5.9600e-003	5.9600e-003	0.0000	85.4357	85.4357	1.6400e-003	1.5700e-003	85.9434

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	1.60101e+006	8.6300e-003	0.0785	0.0659	4.7000e-004		5.9600e-003	5.9600e-003		5.9600e-003	5.9600e-003	0.0000	85.4357	85.4357	1.6400e-003	1.5700e-003	85.9434
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		8.6300e-003	0.0785	0.0659	4.7000e-004		5.9600e-003	5.9600e-003		5.9600e-003	5.9600e-003	0.0000	85.4357	85.4357	1.6400e-003	1.5700e-003	85.9434

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	1.84793e+006	274.8643	0.0235	2.5100e-003	276.2004
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		274.8643	0.0235	2.5100e-003	276.2004

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	1.84793e+006	274.8643	0.0235	2.5100e-003	276.2004
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		274.8643	0.0235	2.5100e-003	276.2004

6.0 Area Detail

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.0351	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Unmitigated	4.0351	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9230					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.1108					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3500e-003	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Total	4.0351	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9230					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.1108					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3500e-003	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Total	4.0351	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303

7.0 Water Detail

7.1 Mitigation Measures Water

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	415.1804	6.0325	0.1450	609.1973
Unmitigated	415.1804	6.0325	0.1450	609.1973

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	184.195 / 0	415.1804	6.0325	0.1450	609.1973
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		415.1804	6.0325	0.1450	609.1973

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	184.195 / 0	415.1804	6.0325	0.1450	609.1973
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		415.1804	6.0325	0.1450	609.1973

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	151.9854	8.9821	0.0000	376.5375
Unmitigated	151.9854	8.9821	0.0000	376.5375

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	748.73	151.9854	8.9821	0.0000	376.5375
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		151.9854	8.9821	0.0000	376.5375

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	748.73	151.9854	8.9821	0.0000	376.5375
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		151.9854	8.9821	0.0000	376.5375

9.0 Operational Offroad

Ottawa Business Center (High-Cube Fulfillment Center Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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APPENDIX 3.3:

CALEEMOD ANNUAL OPERATIONAL EMISSIONS MODEL OUTPUTS (HIGH-CUBE COLD STORAGE WAREHOUSE)

Ottawa Business Center (High-Cube Cold Storage Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Ottawa Business Center (High-Cube Cold Storage Operations)

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	200.00	1000sqft	4.59	200,000.00	0
User Defined Industrial	200.00	User Defined Unit	0.00	0.00	0
Other Asphalt Surfaces	1,131.28	1000sqft	25.97	1,131,280.00	0
Parking Lot	641.00	Space	3.07	133,859.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	32
Climate Zone	10			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	327.92	CH4 Intensity (lb/MWhr)	0.028	N2O Intensity (lb/MWhr)	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Intensity factors adjusted to reflect the RPS for the 2024 OPY

Land Use - Total Project area (without High-Cube Fulfillment Center) is 33.63 acres

Construction Phase - Operations run only

Off-road Equipment - Operations run only

Vehicle Trips - Trip characteristics based on information provided in the Traffic Analysis

Operational Off-Road Equipment - Based on SCAQMD High Cube Warehouse Truck Trip Study White Paper Summary of Business Survey Results (2014)

Fleet Mix - Passenger Car Mix estimated based on the CalEEMod default fleet mix and the ratio of the vehicle classes (LDA, LDT1, LDT2, MDV, & MCY). Truck Mix based on information in the Traffic Analysis

Ottawa Business Center (High-Cube Cold Storage Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	0.00
tblFleetMix	HHD	0.02	0.00
tblFleetMix	HHD	0.02	0.55
tblFleetMix	LDA	0.54	0.58
tblFleetMix	LDA	0.54	0.00
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT1	0.06	0.00
tblFleetMix	LDT2	0.17	0.19
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD1	0.03	0.27
tblFleetMix	LHD2	7.1040e-003	0.00
tblFleetMix	LHD2	7.1040e-003	0.07
tblFleetMix	MCY	0.03	0.03
tblFleetMix	MCY	0.03	0.00
tblFleetMix	MDV	0.14	0.15
tblFleetMix	MDV	0.14	0.00
tblFleetMix	MH	4.8300e-003	0.00
tblFleetMix	MH	4.8300e-003	0.00
tblFleetMix	MHD	0.01	0.00
tblFleetMix	MHD	0.01	0.11
tblFleetMix	OBUS	5.5400e-004	0.00
tblFleetMix	OBUS	5.5400e-004	0.00
tblFleetMix	SBUS	9.5400e-004	0.00
tblFleetMix	SBUS	9.5400e-004	0.00
tblFleetMix	UBUS	2.5100e-004	0.00
tblFleetMix	UBUS	2.5100e-004	0.00
tblLandUse	LandUseSquareFeet	256,400.00	133,859.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblLandUse	LotAcreage	5.77	3.07
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	365.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	CNG
tblOperationalOffRoadEquipment	OperHorsePower	97.00	200.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	4.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	4.00
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.028
tblProjectCharacteristics	CO2IntensityFactor	390.98	327.92
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.003
tblVehicleTrips	CW_TL	9.50	40.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	2.12	1.17
tblVehicleTrips	ST_TR	0.00	0.64
tblVehicleTrips	SU_TR	2.12	1.30
tblVehicleTrips	SU_TR	0.00	0.71
tblVehicleTrips	WD_TR	2.12	1.38
tblVehicleTrips	WD_TR	0.00	0.75

2.0 Emissions Summary

Ottawa Business Center (High-Cube Cold Storage Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

Ottawa Business Center (High-Cube Cold Storage Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

		Highest	
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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1405	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.0388	0.0388	1.0000e-004	0.0000	0.0414
Energy	0.0558	0.5072	0.4260	3.0400e-003		0.0385	0.0385		0.0385	0.0385	0.0000	1,744.2470	1,744.2470	0.1124	0.0210	1,753.3228
Mobile	0.2384	4.4560	2.6281	0.0252	1.2068	0.0448	1.2516	0.3342	0.0428	0.3769	0.0000	2,440.8847	2,440.8847	0.0843	0.3139	2,536.5260
Offroad	0.0798	0.7103	0.5484	2.3100e-003		0.0260	0.0260		0.0239	0.0239	0.0000	203.0779	203.0779	0.0657	0.0000	204.7199
Waste						0.0000	0.0000		0.0000	0.0000	38.1623	0.0000	38.1623	2.2553	0.0000	94.5455
Water						0.0000	0.0000		0.0000	0.0000	14.6730	89.5756	104.2486	1.5147	0.0364	152.9647
Total	1.5144	5.6737	3.6225	0.0305	1.2068	0.1093	1.3161	0.3342	0.1052	0.4394	52.8353	4,477.8240	4,530.6593	4.0325	0.3713	4,742.1202

Ottawa Business Center (High-Cube Cold Storage Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1405	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.0388	0.0388	1.0000e-004	0.0000	0.0414
Energy	0.0558	0.5072	0.4260	3.0400e-003		0.0385	0.0385		0.0385	0.0385	0.0000	1,744.2470	1,744.2470	0.1124	0.0210	1,753.3228
Mobile	0.2384	4.4560	2.6281	0.0252	1.2068	0.0448	1.2516	0.3342	0.0428	0.3769	0.0000	2,440.8847	2,440.8847	0.0843	0.3139	2,536.5260
Offroad	0.0798	0.7103	0.5484	2.3100e-003		0.0260	0.0260		0.0239	0.0239	0.0000	203.0779	203.0779	0.0657	0.0000	204.7199
Waste						0.0000	0.0000		0.0000	0.0000	38.1623	0.0000	38.1623	2.2553	0.0000	94.5455
Water						0.0000	0.0000		0.0000	0.0000	14.6730	89.5756	104.2486	1.5147	0.0364	152.9647
Total	1.5144	5.6737	3.6225	0.0305	1.2068	0.1093	1.3161	0.3342	0.1052	0.4394	52.8353	4,477.8240	4,530.6593	4.0325	0.3713	4,742.1202

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2023	5/31/2023	5	0	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 29.04

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

Ottawa Business Center (High-Cube Cold Storage Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2384	4.4560	2.6281	0.0252	1.2068	0.0448	1.2516	0.3342	0.0428	0.3769	0.0000	2,440.8847	2,440.8847	0.0843	0.3139	2,536.5260
Unmitigated	0.2384	4.4560	2.6281	0.0252	1.2068	0.0448	1.2516	0.3342	0.0428	0.3769	0.0000	2,440.8847	2,440.8847	0.0843	0.3139	2,536.5260

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	276.00	234.60	259.44	781,612	781,612
User Defined Industrial	150.00	127.50	141.00	2,118,480	2,118,480
Total	426.00	362.10	400.44	2,900,092	2,900,092

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3
User Defined Industrial	40.00	7.30	7.30	100.00	0.00	0.00	100	0	0

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.540566	0.056059	0.172680	0.136494	0.026304	0.007104	0.011680	0.017449	0.000554	0.000251	0.025076	0.000954	0.004830
Parking Lot	0.540566	0.056059	0.172680	0.136494	0.026304	0.007104	0.011680	0.017449	0.000554	0.000251	0.025076	0.000954	0.004830
Refrigerated Warehouse-No Rail	0.580800	0.060200	0.185500	0.146600	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.026900	0.000000	0.000000
User Defined Industrial	0.000000	0.000000	0.000000	0.000000	0.273000	0.073700	0.106700	0.546600	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,192.1450	1,192.1450	0.1018	0.0109	1,197.9399
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,192.1450	1,192.1450	0.1018	0.0109	1,197.9399
NaturalGas Mitigated	0.0558	0.5072	0.4260	3.0400e-003		0.0385	0.0385		0.0385	0.0385	0.0000	552.1020	552.1020	0.0106	0.0101	555.3828
NaturalGas Unmitigated	0.0558	0.5072	0.4260	3.0400e-003		0.0385	0.0385		0.0385	0.0385	0.0000	552.1020	552.1020	0.0106	0.0101	555.3828

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	1.0346e+007	0.0558	0.5072	0.4260	3.0400e-003		0.0385	0.0385		0.0385	0.0385	0.0000	552.1020	552.1020	0.0106	0.0101	555.3828
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0558	0.5072	0.4260	3.0400e-003		0.0385	0.0385		0.0385	0.0385	0.0000	552.1020	552.1020	0.0106	0.0101	555.3828

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	1.0346e+007	0.0558	0.5072	0.4260	3.0400e-003		0.0385	0.0385		0.0385	0.0385	0.0000	552.1020	552.1020	0.0106	0.0101	555.3828
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0558	0.5072	0.4260	3.0400e-003		0.0385	0.0385		0.0385	0.0385	0.0000	552.1020	552.1020	0.0106	0.0101	555.3828

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	46850.6	6.9687	6.0000e-004	6.0000e-005	7.0025
Refrigerated Warehouse-No Rail	7.968e+006	1,185.1763	0.1012	0.0108	1,190.9374
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		1,192.1450	0.1018	0.0109	1,197.9399

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	46850.6	6.9687	6.0000e-004	6.0000e-005	7.0025
Refrigerated Warehouse-No Rail	7.968e+006	1,185.1763	0.1012	0.0108	1,190.9374
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		1,192.1450	0.1018	0.0109	1,197.9399

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1405	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.0388	0.0388	1.0000e-004	0.0000	0.0414
Unmitigated	1.1405	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.0388	0.0388	1.0000e-004	0.0000	0.0414

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2757					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8629					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.8400e-003	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.0388	0.0388	1.0000e-004	0.0000	0.0414
Total	1.1405	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.0388	0.0388	1.0000e-004	0.0000	0.0414

Ottawa Business Center (High-Cube Cold Storage Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2757					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8629					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.8400e-003	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.0388	0.0388	1.0000e-004	0.0000	0.0414
Total	1.1405	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.0388	0.0388	1.0000e-004	0.0000	0.0414

7.0 Water Detail

7.1 Mitigation Measures Water

Ottawa Business Center (High-Cube Cold Storage Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	104.2486	1.5147	0.0364	152.9647
Unmitigated	104.2486	1.5147	0.0364	152.9647

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	46.25 / 0	104.2486	1.5147	0.0364	152.9647
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		104.2486	1.5147	0.0364	152.9647

Ottawa Business Center (High-Cube Cold Storage Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	46.25 / 0	104.2486	1.5147	0.0364	152.9647
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		104.2486	1.5147	0.0364	152.9647

8.0 Waste Detail

8.1 Mitigation Measures Waste

Ottawa Business Center (High-Cube Cold Storage Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	38.1623	2.2553	0.0000	94.5455
Unmitigated	38.1623	2.2553	0.0000	94.5455

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	188	38.1623	2.2553	0.0000	94.5455
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		38.1623	2.2553	0.0000	94.5455

Ottawa Business Center (High-Cube Cold Storage Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	188	38.1623	2.2553	0.0000	94.5455
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		38.1623	2.2553	0.0000	94.5455

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Tractors/Loaders/Backhoes	4	4.00	365	200	0.37	CNG

Ottawa Business Center (High-Cube Cold Storage Operations) - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Tractors/Loaders/Backhoes	0.0798	0.7103	0.5484	2.3100e-003		0.0260	0.0260		0.0239	0.0239	0.0000	203.0779	203.0779	0.0657	0.0000	204.7199
Total	0.0798	0.7103	0.5484	2.3100e-003		0.0260	0.0260		0.0239	0.0239	0.0000	203.0779	203.0779	0.0657	0.0000	204.7199

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

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APPENDIX 3.4:
SCREENING TABLES



City of Victorville
Department of Development
Planning ♦ Building ♦ Code Enforcement

14343 Civic Drive
PO Box 5001
Victorville, CA 92393-5001
(760) 955-5135
Fax (760) 269-0070
planning@victorvilleca.gov

Greenhouse Gas Emissions Screening Table Review

Note: This form is to be used only for projects which are subject to CEQA and not exempt from CEQA (i.e. Negative Declaration, Mitigated Negative Declaration or Environmental Impact Report).

GENERAL INFORMATION

Applicant: _____ Contact Name: _____

Address: _____

Telephone No.: _____ Email Address: _____

TYPE OF PROJECT

Residential (Single-Family or Multi-Family) Commercial or Industrial

PROJECT LOCATION

General Location/Address of Project: _____

Name of Business (if applicable): _____

Assessor's Parcel No(s): _____

Existing Zoning: _____

PROJECT DESCRIPTION:

Instructions

1. Fill out the appropriate section below for either Residential or Commercial/Industrial.
2. Choose items which the proposed project will incorporate into the development to reach a minimum of 45 points.
3. Do not chose items which are independently required by other laws, codes or the VVMC, such as the California Building Green Code, the Civic Center Sustainability Plan or required infrastructure improvements.
4. For those items listed with a TBD point value, please provide specific information and background studies (i.e. traffic study) for Staff to determine an assigned point value.
5. Submit the Screening Table along with the Planning Commission Review Application.

Achievable by adhering to code OR current industrial design standards

Possible add on to project scope OR TI build out option

Commercial/Industrial Section

Feature	Description	Assigned Point Values	Project Points
Reduction Measure PS E3: Commercial/Industrial Energy Efficiency Development			
Building Envelope			
Insulation	2008 baseline (walls R-13; roof/attic R-30)	0 points	
	Modestly Enhanced Insulation (walls R-13, roof/attic R-38))	15 points	
	Enhanced Insulation (rigid wall insulation R-13, roof/attic R-38)	18 points	
	Greatly Enhanced Insulation (spray foam insulated walls R-15 or higher, roof/attic R-38 or higher)	20 points	
Windows	2008 Baseline Windows (0.57 U-factor, 0.4 solar heat gain coefficient [SHGC])	0 points	
	Modestly Enhanced Window Insulation (0.4 U-factor, 0.32 SHGC)	7 points	
	Enhanced Window Insulation (0.32 U-factor, 0.25 SHGC)	8 points	
	Greatly Enhanced Window Insulation (0.28 or less U-factor, 0.22 or less SHGC)	12 points	
Cool Roof	Modest Cool Roof (CRRC Rated 0.15 aged solar reflectance, 0.75 thermal emittance)	12 points	
	Enhanced Cool Roof (CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance)	14 points	
	Greatly Enhanced Cool Roof (CRRC Rated 0.35 aged solar reflectance, 0.75 thermal emittance)	16 points	
Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage.		
	Air barrier applied to exterior walls, caulking, and visual inspection such as the HERS Verified Quality Insulation Installation (QII or equivalent) Blower Door HERS Verified Envelope Leakage or equivalent	12 points 10 points	
Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls.		
	Modest Thermal Mass (10% of floor or 10% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood or other insulating materials)	4 points	
	Enhanced Thermal Mass (20% of floor or 20% of walls 12" or more thick	6 points	

Feature	Description	Assigned Point Values	Project Points
	exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood or other insulating materials) Enhanced Thermal Mass (80% of floor or 80% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood or other insulating materials)	24 points	
Indoor Space Efficiencies			
Heating/ Cooling Distribution System	Minimum Duct Insulation (R-4.2 required)	0 points	
	Modest Duct insulation (R-6)	8 points	
	Enhanced Duct Insulation (R-8)	10 points	
	Distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent)	14 points	
Space Heating/ Cooling Equipment	2008 Minimum HVAC Efficiency (EER 13/75% AFUE or 7.7 HSPF)	0 points	
	Improved Efficiency HVAC (EER 14/78% AFUE or 8 HSPF)	7 points	
	High Efficiency HVAC (EER 15/80% AFUE or 8.5 HSPF)	8 points	
	Very High Efficiency HVAC (EER 16/82% AFUE or 9 HSPF)	12 points	
Commercial Heat Recovery Systems	Heat recovery strategies employed with commercial laundry, cooking equipment, and other commercial heat sources for reuse in HVAC air intake or other appropriate heat recovery technology. Point values for these types of systems will be determined based upon design and engineering data documenting the energy savings.	TBD	
Water Heaters	2008 Minimum Efficiency (0.57 Energy Factor)	0 points	
	Improved Efficiency Water Heater (0.675 Energy Factor)	14 points	
	High Efficiency Water Heater (0.72 Energy Factor)	16 points	
	Very High Efficiency Water Heater (0.92 Energy Factor)	19 points	
	Solar Pre-heat System (0.2 Net Solar Fraction)	4 points	
	Enhanced Solar Pre-heat System (0.35 Net Solar Fraction)	8 points	
Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours.		
	All peripheral rooms within building have at least one window or skylight	1 points	
	All rooms within building have daylight (through use of windows, solar tubes, skylights, etc.)	5 points	
	All rooms daylighted	7 points	

Feature	Description	Assigned Point Values	Project Points
Artificial Lighting	2008 Minimum (required)	0 points	
	Efficient Lights (25% of in-unit fixtures considered high efficacy. High efficacy is defined as 40 lumens/watt for 15 watt or less fixtures; 50 lumens/watt for 15-40 watt fixtures, 60 lumens/watt for fixtures >40watt)	9 points	
	High Efficiency Lights (50% of in-unit fixtures are high efficacy)	12 points	
	Very High Efficiency Lights (100% of in-unit fixtures are high efficacy)	14 points	
Appliances	Star Commercial Refrigerator (new)	4 points	
	Energy Star Commercial Dish Washer (new)	4 points	
	Energy Star Commercial Cloths Washing	4 points	
Miscellaneous Commercial/Industrial Building Efficiencies			
Building Placement	North/South alignment of building or other building placement such that the orientation of the buildings optimizes conditions for natural heating, cooling, and lighting.	6 point	
Shading	At least 90% of south-facing glazing will be shaded by vegetation or overhangs at noon on Jun 21st.	6 Points	
Other	This allows innovation by the applicant to provide design features that increases the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
Existing Commercial building Retrofits	<p>The applicant may wish to provide energy efficiency retrofit projects to existing commercial buildings to further the point value of their project. Retrofitting existing commercial buildings within the City is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case by case basis and must have the approval of the City Planning Department. The decision to allow applicants to ability to participate in this program will be evaluated based upon, but not limited to the following:</p> <p>Will the energy efficiency retrofit project benefit low income or disadvantaged communities?</p> <p>Does the energy efficiency retrofit project fit within the overall assumptions in the reduction measure associated with commercial building energy efficiency retrofits?</p>	TBD	

Feature	Description	Assigned Point Values	Project Points
	<p>Does the energy efficiency retrofit project provide co-benefits important to the City?</p> <p>Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.</p>		
Reduction Measure PS E4: Commercial/Industrial Renewable Energy			
Photovoltaic	<p>Solar Photovoltaic panels installed on commercial buildings or in collective arrangements within a commercial development such that the total power provided augments:</p> <p>Solar Ready Roofs (sturdy roof and electric hookups)</p> <p>10 percent of the power needs of the project</p> <p>20 percent of the power needs of the project</p> <p>30 percent of the power needs of the project</p> <p>40 percent of the power needs of the project</p> <p>50 percent of the power needs of the project</p> <p>60 percent of the power needs of the project</p> <p>70 percent of the power needs of the project</p> <p>80 percent of the power needs of the project</p> <p>90 percent of the power needs of the project</p> <p>100 percent of the power needs of the project</p>	<p>2 points</p> <p>8 points</p> <p>14 points</p> <p>20 points</p> <p>26 points</p> <p>32 points</p> <p>38 points</p> <p>44 points</p> <p>50 points</p> <p>56 points</p> <p>60 points</p>	
Wind turbines	<p>Some areas of the City lend themselves to wind turbine applications. Analysis of the areas capability to support wind turbines should be evaluated prior to choosing this feature.</p> <p>Wind turbines as part of the commercial development such that the total power provided augments:</p>		
	<p>10 percent of the power needs of the project</p> <p>20 percent of the power needs of the project</p> <p>30 percent of the power needs of the project</p> <p>40 percent of the power needs of the project</p> <p>50 percent of the power needs of the project</p> <p>60 percent of the power needs of the project</p> <p>70 percent of the power needs of the project</p> <p>80 percent of the power needs of the project</p> <p>90 percent of the power needs of the project</p> <p>100 percent of the power needs of the project</p>	<p>8 points</p> <p>14 points</p> <p>20 points</p> <p>26 points</p> <p>32 points</p> <p>38 points</p> <p>44 points</p> <p>50 points</p> <p>56 points</p> <p>60 points</p>	

Feature	Description	Assigned Point Values	Project Points
Off-site renewable energy project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing commercial/industrial that will help implement reduction measures associated with existing buildings. These off-site renewable energy retrofit project proposals will be determined on a case by case basis accompanied by a detailed plan documenting the quantity of renewable energy the proposal will generate. Point values will be based upon the energy generated by the proposal.	TBD	
Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.	TBD	
Reduction Measure PS W2: Commercial/Industrial Water Conservation			
Irrigation and Landscaping			
Water Efficient Landscaping	Eliminate conventional turf from landscaping	0 points	
	Only moderate water using plants	3 points	
	Only low water using plants	4 points	
	Only California Native landscape that requires no or only supplemental irrigation	8 points	
Trees	Increase tree planting in parking areas 50% beyond City Code requirements	TBD	
Water Efficient irrigation systems	Low precipitation spray heads < .75"/hr or drip irrigation	1 point	
	Weather based irrigation control systems combined with drip irrigation (demonstrate 20 reduced water use)	5 points	
Recycled Water	Recycled water connection (purple pipe) to irrigation system on site	5 points	
Storm water Reuse Systems	Innovative on-site stormwater collection, filtration and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	

Feature	Description	Assigned Point Values	Project Points
Potable Water			
Showers	Water Efficient Showerheads (2.0 gpm)	3 points	
Toilets	Water Efficient Toilets/Urinals (1.5gpm)	3 points	
	Waterless Urinals (note that commercial buildings having both waterless urinals and high efficiency toilets will have a combined point value of 6 points)	4 points	
Faucets	Water Efficient faucets (1.28gpm)	3 points	
Commercial Dishwashers	Water Efficient dishwashers (20% water savings)	4 points	
Commercial Laundry Washers	Water Efficient laundry (15% water savings)	3 points	
	High Efficiency laundry Equipment that captures and reuses rinse water (30% water savings)	6 points	
Commercial Water Operations Program	Establish an operational program to reduce water loss from pools, water features, etc., by covering pools, adjusting fountain operational hours, and using water treatment to reduce draw down and replacement of water. Point values for these types of plans will be determined based upon design and engineering data documenting the water savings.	TBD	
Reduction Measure PS T1: Land Use Based Trips and VMT Reduction			
Mixed Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed use projects will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled	TBD	
Local Retail Near Residential (Commercial only Projects)	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled	TBD	
Reduction Measure PS T2: Bicycle Infrastructure			
Bicycle Infrastructure	Provide bicycle paths within project boundaries.	TBD	
	Provide bicycle path linkages between project site and other land uses.	2 points	
	Provide bicycle path linkages between project site and transit.	5 points	
Reduction Measure PS T3: Electric Vehicle Infrastructure			
Electric Vehicles	Provide public charging station for use by an electric vehicle (ten points for each charging station within the facility).	10 points	

Feature	Description	Assigned Point Values	Project Points
Reduction Measure PS T4: Employee Based Trip &VMT Reduction Policy			
Compressed Work Week	<p>Reduce the number of days per week that employees need to be on site will reduce the number of vehicle trips associated with commercial/industrial development. Compressed work week such that full time employees are on site:</p> <p>5 days per week</p> <p>4 days per week on site</p> <p>3 days per week on site</p>	TBD	
Car/Vanpools	<p>Car/vanpool program</p> <p>Car/vanpool program with preferred parking</p> <p>Car/vanpool with guaranteed ride home program</p> <p>Subsidized employee incentive car/vanpool program</p> <p>Combination of all the above</p>	TBD	
Employee Bicycle/ Pedestrian Programs	<p>Complete sidewalk to residential within ½ mile</p> <p>Complete bike path to residential within 3 miles</p> <p>Bike lockers and secure racks</p> <p>Showers and changing facilities</p> <p>Subsidized employee walk/bike program</p> <p>(Note combine all applicable points for total value)</p>	TBD	
Shuttle/Transit Programs	<p>Local transit within ¼ mile</p> <p>Light rail transit within ½ mile</p> <p>Shuttle service to light rail transit station</p> <p>Guaranteed ride home program</p> <p>Subsidized Transit passes</p> <p>Note combine all applicable points for total value</p>	TBD	
CRT	<p>Employer based Commute Trip Reduction (CRT). CRTs apply to commercial, offices, or industrial projects that include a reduction of vehicle trip or VMT goal using a variety of employee commutes trip reduction methods. The point value will be determined based upon a TIA that demonstrates the trip/VMT reductions. Suggested point ranges:</p> <p>Incentive based CRT Programs (1-8 points)</p> <p>Mandatory CRT programs (5-20 points)</p>	TBD	
Other Trip Reductions	<p>Other trip or VMT reduction measures not listed above with TIA and/or other traffic data supporting the trip and/or VMT for the project.</p>	TBD	

Feature	Description	Assigned Point Values	Project Points
Total Points from Commercial/Industrial Project:		27+	

-Commercial/Industrial Section Ends-

38+ additional points

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