



Orchard Logistics Center

GREENHOUSE GAS ANALYSIS

CITY OF BEAUMONT

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LIST OF ABBREVIATED TERMS

%	Percent
°C	Degrees Celsius
°F	Degrees Fahrenheit
(1)	Reference
2017 Scoping Plan	Final 2017 Scoping Plan Update
AB	Assembly Bill
AB 32	Global Warming Solutions Act of 2006
AB 1493	Pavley Fuel Efficiency Standards
AB 1881	California Water Conservation Landscaping Act of 2006
Annex I	Industrialized Nations
AQIA	<i>Orchard Logistics Center Air Quality Impact Analysis</i>
BAU	Business As Usual
C ₂ F ₆	Hexafluoroethane
C ₂ H ₆	Ethane
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	California Green Building Standards Code
CalSTA	California State Transportation Agency
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resource Board
CBSC	California Building Standards Commission
CEC	California Energy Commission
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
<i>CEQA Guidelines</i>	<i>2019 CEQA Statute and Guidelines</i>
CDFA	California Department of Food and Agriculture
CF ₄	Tetrafluoromethane
CFC	Chlorofluorocarbons
CFC-113	Trichlorotrifluoroethane
CH ₄	Methane
City	City of Beaumont
CNRA	California Natural Resources Agency

CNRA 2009	2009 California Climate Adaptation Strategy
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
Convention	United Nation's Framework Convention on Climate Change
COP	Conference of the Parties
CPUC	California Public Utilities Commission
CTC	California Transportation Commission
DOF	Department of Finance
DWR	Department of Water Resources
EMFAC	Emission Factor Model
EPA	Environmental Protection Agency
EV	Electric Vehicle
FED	Functional Equivalent Document
GCC	Global Climate Change
Gg	Gigagram
GHGA	Greenhouse Gas Analysis
GO-Biz	Governor's Office of Business and Economic Development
GWP	Global Warming Potential
H ₂ O	Water
HFC	Hydrofluorocarbons
HDT	Heavy-Duty Trucks
HFC-23	Fluoroform
HFC-134a	1,1,1,2-tetrafluoroethane
HFC-152a	1,1-difluoroethane
HHDT	Heavy-Heavy-Duty Trucks
hp	Horsepower
IBANK	California Infrastructure and Economic Development Bank
IPCC	Intergovernmental Panel on Climate Change
IRP	Integrated Resource Planning
ISO	Independent System Operator
ITE	Institute of Transportation Engineers
kWh	Kilowatt Hours
lbs	Pounds
LBNL	Lawrence Berkeley National Laboratory
LCA	Life-Cycle Analysis
LCD	Liquid Crystal Display
LCFS	Low Carbon Fuel Standard or Executive Order S-01-07
LDA	Light-Duty Auto

LDT1/LDT2	Light-Duty Trucks
LEV III	Low-Emission Vehicle
LHDT1/LHDT2	Light-Heavy-Duty Trucks
LULUCF	Land-Use, Land-Use Change and Forestry
MCY	Motorcycles
MD	Medium Duty
MDT	Medium-Duty Trucks
MDV	Medium-Duty Vehicles
MHDT	Medium-Heavy-Duty Trucks
MMR	Mandatory Reporting Rule
MMTCO _{2e}	Million Metric Ton of Carbon Dioxide Equivalent
mpg	Miles Per Gallon
MPOs	Metropolitan Planning Organizations
MMTCO _{2e} /yr	Million Metric Ton of Carbon Dioxide Equivalent Per Year
MT/yr	Metric Tons Per Year
MTCO _{2e}	Metric Ton of Carbon Dioxide Equivalent
MTCO _{2e} /yr	Metric Ton of Carbon Dioxide Equivalent Per Year
MW	Megawatts
MWh	Megawatts Per Hour
MWELO	California Department of Water Resources' Model Water Efficient
N ₂ O	Nitrous Oxide
NDC	Nationally Determined Contributions
NF ₃	Nitrogen Trifluoride
NHTSA	National Highway Traffic Safety Administration
NIOSH	National Institute for Occupational Safety and Health
NO _x	Nitrogen Oxides
Non-Annex I	Developing Nations
OAL	Office of Administrative Law
OPR	Office of Planning and Research
PFC	Perfluorocarbons
ppb	Parts Per Billion
ppm	Parts Per Million
ppt	Parts Per Trillion
Project	Orchard Logistics Center
RPS	Renewable Portfolio Standards
RTP	Regional Transportation Plan
SAFE	Safer Affordable Fuel-Efficient Vehicles Rule

SB	Senate Bill
SB 32	California Global Warming Solutions Act of 2006
SB 375	Regional GHG Emissions Reduction Targets/Sustainable Communities Strategies
SB 1078	Renewable Portfolio Standards
SB 1368	Statewide Retail Provider Emissions Performance Standards
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
Scoping Plan	California Air Resources Board Climate Change Scoping Plan
SCS	Sustainable Communities Strategy
sf	Square Feet
SF ₆	Sulfur Hexafluoride
SGC	Strategic Growth Council
SHGC	Solar Heat Gain Coefficient
SLPS	Short-Lived Climate Pollutant Strategy
SP	Service Population
SR-60	State Route 60
SWCRB	State Water Resources Control Board
TA	<i>Jack Rabbit Trail Specific Plan Traffic Analysis</i>
TDM	Transportation Demand Measures
Title 20	Appliance Energy Efficiency Standards
Title 24	California Building Code
U.N.	United Nations
U.S.	United States
UNFCCC	United Nations' Framework Convention on Climate Change
URBEMIS	Urban Emissions
UTR	Utility Tractors
VFP	Vehicle Fueling Positions
VMT	Vehicle Miles Traveled
WCI	Western Climate Initiative
WRCOG	Western Riverside Council of Governments
WRI	World Resources Institute
ZE/NZE	Zero and Near-Zero Emissions
ZEV	Zero-Emissions Vehicles

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1 INTRODUCTION

This report presents the results of the GHGA prepared by Urban Crossroads, Inc., for the proposed Orchard Logistics Center Project (Project). The purpose of this GHGA is to evaluate Project-related construction and operational emissions under the applicable regulatory framework and determine the level of GHG impacts as a result of constructing and operating the Project.

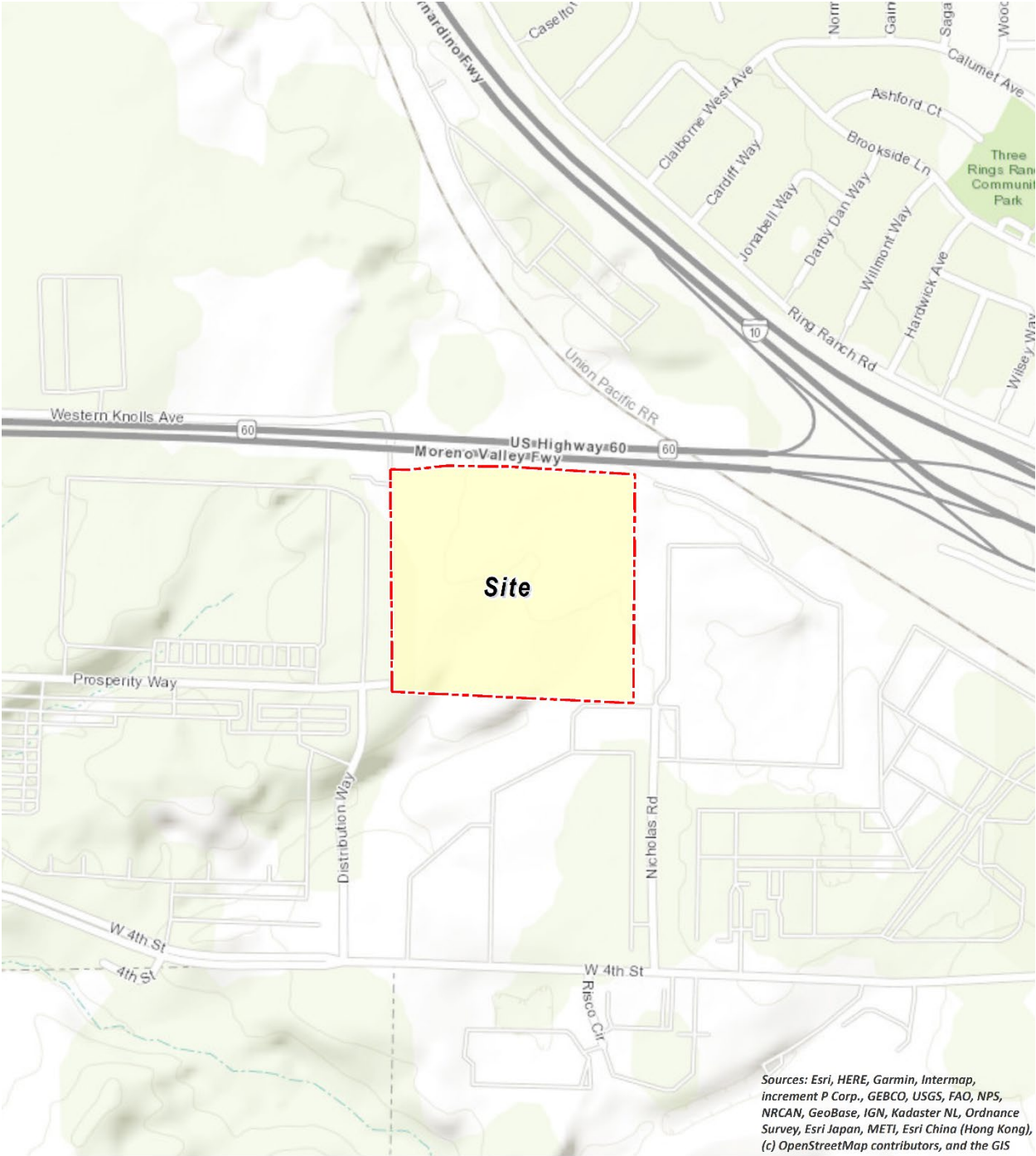
1.1 SITE LOCATION

The proposed Orchard Logistics Center site is located south of the Moreno Valley Freeway (State Route 60 [SR-60] Freeway), north of 4th Street, and at the northern terminus of Nicholas Road, in the City of Beaumont, as shown on Exhibit 1-A.

1.2 PROJECT DESCRIPTION

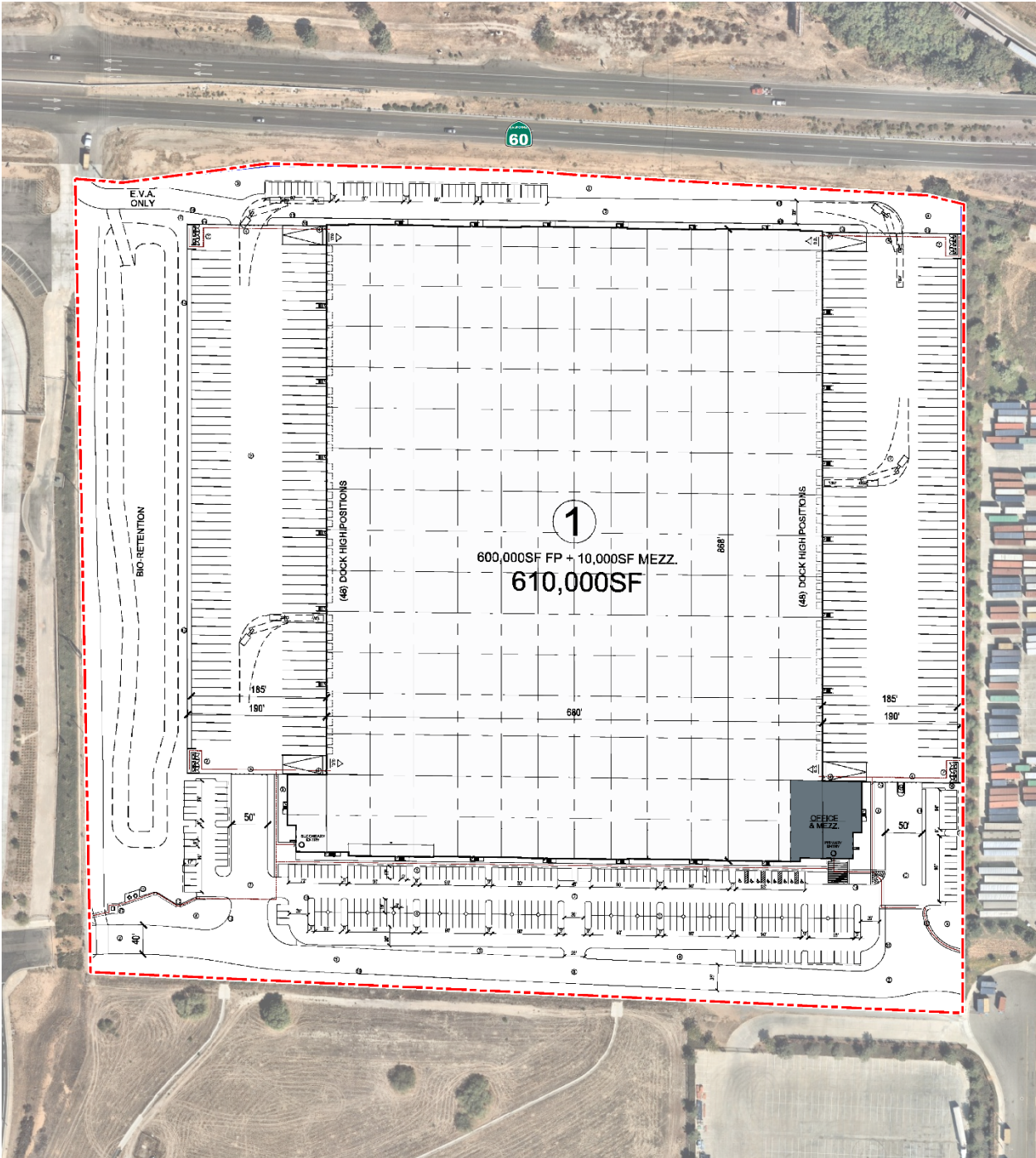
As shown in Exhibit 1-B, the Project is proposed to consist of 610,000 square feet (sf) of warehouse use within a single building. Consistent with the *Orchard Logistics Center Traffic Analysis*, the building has conservatively been evaluated assuming 10 percent (%) high-cube cold storage warehousing use (61,000 sf) and 90% high-cube fulfillment center warehousing use (549,000 sf). The proposed Project expected to generate approximately 1,304 total trips per day (652 vehicles inbound + 652 vehicles outbound) which include 1,046 total passenger vehicle trips per day (523 passenger vehicles inbound + 523 passenger vehicles outbound) and 258 total truck trips per day (129 trucks inbound + 129 trucks outbound) (1).

EXHIBIT 1-A: LOCATION MAP



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS

EXHIBIT 1-B: SITE PLAN



LEGEND:
N [North Arrow] [Red Dashed Box] Site Boundary

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2 CLIMATE CHANGE SETTING

2.1 INTRODUCTION TO GLOBAL CLIMATE CHANGE (GCC)

Scientists believe that a climate shift in average meteorological conditions on the earth with respect to temperature, precipitation, and storms that has been 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 greenhouse gases (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 and GHGs results 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 taken together may have serious environmental consequences, Section 3.0 will evaluate the potential for the proposed Project to have a significant direct or indirect 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 as a result of changes in global temperature. Global temperatures are regulated by naturally occurring atmospheric gases such as water vapor, CO₂, N₂O, CH₄, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), 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. The cumulative and increasing 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 climate change including global warming. 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.

TABLE 2-1: GHGS

GHGs	Description	Sources	Health Effects
Carbon Dioxide (CO ₂)	CO ₂ 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, CO ₂ 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 CO ₂ in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources (2).	CO ₂ is emitted from natural and artificial 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. CO ₂ is naturally removed from the air by photosynthesis, dissolution into ocean water, transfer to soils and ice caps, and chemical weathering of carbonate rocks (3).	Outdoor levels of CO ₂ are not high enough to result in negative health effects. According to the National Institute for Occupational Safety and Health (NIOSH) high concentrations of CO ₂ 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 CO ₂ 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 (4).
Methane (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	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.

GHGs	Description	Sources	Health Effects
		<p>last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of CH₄. Other anthropogenic sources include fossil-fuel combustion and biomass burning (5).</p>	
Nitrous Oxide (N ₂ O)	<p>N₂O, also known as laughing gas, is a colorless GHG. Concentrations of N₂O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb).</p>	<p>N₂O 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 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 (6).</p>	<p>N₂O 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) (6).</p>

GHGs	Description	Sources	Health Effects
Chlorofluorocarbons (CFCs)	CFCs are gases formed synthetically by replacing all hydrogen atoms in CH ₄ or ethane (C ₂ H ₆) 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).	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 (7).	In confined indoor locations, working with trichlorotrifluoroethane (CFC-113) or other CFCs is thought to result in death by cardiac arrhythmia (heart frequency too high or too low) or asphyxiation.
Hydrofluorocarbons (HFCs)	HFCs are synthetic 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 manufactured for applications such as automobile air conditioners and refrigerants.	No health effects are known to result from exposure to HFCs.

GHGs	Description	Sources	Health Effects
Perfluorocarbons (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.
Sulfur Hexafluoride (SF ₆)	SF ₆ is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest GWP of any gas evaluated (23,900) (8). 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.
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 (9).	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 (10).

2.4 GLOBAL WARMING POTENTIAL (GWP)

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to provide the world with a scientific perspective on climate change and its potential effects. The IPCC has examined the impacts of GHGs and evaluated them based on their varying GWP values. GWP of a GHG indicates the amount of warming a gas cause 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. The IPCC's 2nd Assessment Report which examined the scientific and socio-economic assessment on climate change determined GWP ranges 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 (11).

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

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

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

Source: Table 2.14 of the IPCC Fourth Assessment Report, 2007

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 28,768,439 gigagram (Gg) CO₂e¹ (12) (13) as summarized on Table 2-3.

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.

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.

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

Emitting Countries	GHG Emissions (Gg CO₂e)
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	28,768,439

2.5.3 STATE OF CALIFORNIA

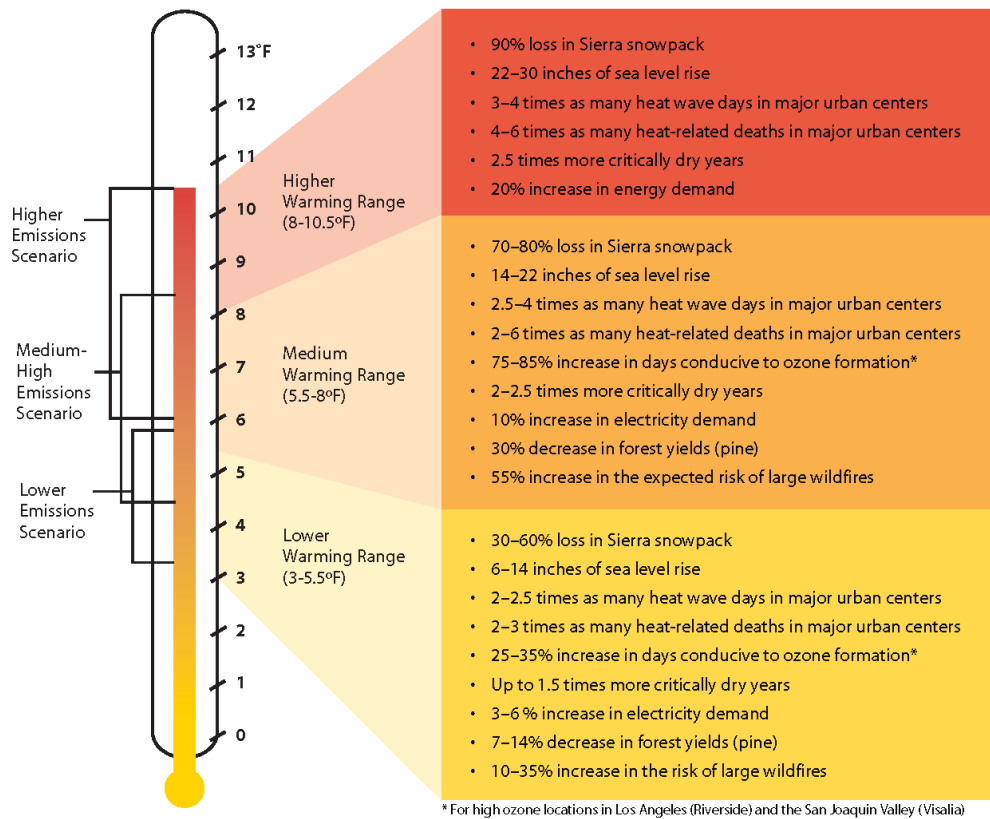
California has significantly slowed the rate of growth of GHG emissions due to the implementation of legislation, regulations, energy efficiency programs as well as adoption of strict emission controls, but is still a contributor to the United States (U.S.) emissions inventory total (14). The California Air Resource Board (CARB) compiles GHG inventories for the State of California. Based upon the 2019 GHG inventory data (i.e., the latest year for which data are available) for the 2000-2018 GHG emissions period, California emitted an average 425.3 million MTCO₂e per year (MMTCO₂e/yr) or 425,320 Gg CO₂e (6.37% of the total United States GHG emissions) (15). Based on data published by the U.S. Energy Information Administration, California's per capita (9.12 metric tons) GHG emissions are much less than the nationwide per capita (15.8 metric ton) average (16).

2.6 EFFECTS OF CLIMATE CHANGE IN CALIFORNIA

Climate change will likely cause shifts in weather patterns, potentially resulting in changes in rainfall levels and volumes, resulting in flooding or droughts, increased wildfire risk, impair habitats for threatened and endangered species, and cause food shortages in some areas (17), among other climate change results. The potential health effects related directly to the emissions of CO₂, CH₄, and N₂O as they relate to development projects 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 believe that higher ambient temperatures could affect disease survival rates and result in more widespread disease. The potential risks from climate change to California are shown on Exhibit 2-A, and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy.

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.

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



* For high ozone locations in Los Angeles (Riverside) and the San Joaquin Valley (Visalia)

Source: Barbara H. Allen-Diaz. "Climate change affects us all." *University of California, Agriculture and Natural Resources*, 2009.

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. As stated in *Our Changing Climate: Assessing the Risks to California* (18) large wildfires could become up to 55% more frequent if GHG emissions are not significantly reduced.

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 large 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 manufactured reservoirs and aqueducts captures and transports water throughout the state from northern California rivers and the Colorado River. The current distribution system from northern California relies on the 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, and result in a drier Colorado River, 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. Winter tourism could be adversely affected, 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 EFFECTS ON SPECIES

GCC has the potential to alter natural ecosystems and biological diversity. As the existing climate throughout California changes, the ranges of various plant and wildlife species could shift or shrink, as rainfall and temperatures changes occur, and wildfires increase. This could result in impacts to the viability of various habitats throughout the state and of certain threatened and endangered species.

2.6.5 RISING SEA LEVELS

Although not relevant to the Project area, 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 FOR GCC

2.7.1 INTERNATIONAL

Climate change is a global issue involving GHG emissions from all around the world; therefore, international organizations and 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 (CONVENTION)

On March 21, 1994, the U.S. joined a number of countries around the world in signing the Convention. Under the Convention, 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 Convention. 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 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 UN Climate Change Committee held additional meetings in Durban, South Africa in November 2011; Doha, Qatar in November 2012; and Warsaw, Poland in November 2013. The meetings are gradually gaining 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 U.N. Framework Convention on Climate Change (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 will “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 will 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) (19).

On November 4, 2019, the Trump administration formally notified the U.N. that the U.S. would withdraw from the Paris Agreement, which became effective one year after the notification in 2020. On January 20, 2020, President Biden signed the instrument to bring the U.S. back into the Paris Agreement. On February 19, 2021, The U.S. officially rejoined the Paris Agreement.

2.7.1 FEDERAL

The following are actions regarding direct and indirect regulations by the federal government concerning GHGs and fuel efficiency.

GHG ENDANGERMENT

In *Massachusetts v. Environmental Protection Agency* (EPA) 549 U.S. 497 (2007), decided on April 2, 2007, the U.S. Supreme Court (Supreme Court) found that four GHGs, including CO₂, are air pollutants subject to regulation under Section 202(a)(1) of the Federal Clean Air Act (CAA). The 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 (20).

CLEAN VEHICLES

Auto and truck emissions are a major contributor to GHG; fuel economy, therefore, is an important component to lowering GHG emissions. 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 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 (21).

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 will 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 will 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. The WCI has yet to publish whether it has successfully reached the 2020 emissions goal initiative set in 2007.

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 (22):

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 will have to comply with 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 will 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.

2.7.2 CALIFORNIA

California has taken many steps to decrease GHG through Executive Orders, legislation, and regulations, not all of which apply to the Project. However, this section discusses all significant actions to present a robust description of state actions taken concerning Climate Change and GHG reduction.

2.7.2.1 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 and Executive Orders which provide guidance for some legislation and additional requirements applicable to state agencies only. Some legislation such as the landmark AB 32 was specifically enacted to address GHG emissions. Other legislation and regulations 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 actions.

EXECUTIVE ORDER S-3-05

Former 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 will 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 and, as with all Executive Orders, do not apply to this Project. *Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497.

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 S-01-07 – LCFS

Executive Order S-01-07, signed on January 18, 2007, mandates that a statewide goal shall be established to reduce the carbon intensity of California’s transportation fuels by at least 10% by 2020. In particular, the Executive Order established a LCFS and directed the Secretary for Environmental Protection to coordinate the actions of the CEC, CARB, the University of California, and other agencies to develop and propose protocols for measuring the “life-cycle carbon intensity” of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by CEC on December 24, 2007) and was submitted to CARB for consideration as an “early action” item under AB 32. CARB adopted the LCFS on April 23, 2009.

CARB approved the LCFS regulation in 2009 and began implementation on January 1, 2011. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, CARB approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. In 2018, CARB approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California’s 2030 GHG emission reduction target enacted through SB 32, adding new 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.

EXECUTIVE ORDER B-30-15

The GHG reduction target of 40% below 1990 levels by 2030 in this 2015 Executive Order was subsequently codified in SB 32. It directs CARB to update the Climate Change Scoping Plan to

express the 2030 target in terms of MMTCO₂e. 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 for local governments and the private sector and does not apply to this Project.

EXECUTIVE ORDER B-55-18 AND SB 100

Executive Order B-55-18 and SB 100. SB 100 and Executive Order B-55-18 were signed in 2018. Before then, 25% of retail sales were 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 raised California's RPS requirement to 50% renewable resources target by December 31, 2026 and established a 60% target by December 31, 2030. SB 100 also required 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 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 established a carbon neutrality goal for the state of California by 2045, and sets a goal to maintain net negative emissions thereafter. The Executive Order directed the California Natural Resources Agency (CNRA), California Environmental Protection Agency (CalEPA), the 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.

AB 32

In 2006, the California State Legislature enacted AB 32, the Global Warming Solutions Act, which requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "GHGs" as defined under AB 32 include CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. The Act required CARB to determine the 1990 statewide GHG emissions level and approve a statewide GHG emissions limit to be achieved by 2020 by adopting regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. CARB is the state agency charged with monitoring and regulating sources of GHGs.

CARB approved the 1990 GHG emissions level of 427 MMTCO₂e on December 6, 2007 (23). Therefore, emissions generated in California in 2020 were required to be equal to or less than 427 MMTCO₂e. Emissions in 2020 in a "business as usual" (BAU) scenario were estimated to be 596 MMTCO₂e, which do not account for reductions from AB 32 regulations (24). At that level, a 28.4% reduction was required to achieve the 427 MMTCO₂e 1990 inventory. In October 2010, CARB prepared an updated BAU 2020 forecast to account for the recession and slower forecasted growth. The forecasted inventory without the benefits of adopted regulation was then estimated at 545 MMTCO₂e. Therefore, under the updated forecast, a 21.7% reduction from BAU was required to achieve 1990 levels on a statewide basis (25).

SB 375 – THE SUSTAINABLE COMMUNITIES AND CLIMATE PROTECTION ACT OF 2008

Senate Bill (SB) 375 was signed into law on September 30, 2008. 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, California will not be able to achieve the goals of AB 32.” SB 375: (1) requires metropolitan planning organizations 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 also requires Metropolitan Planning Organizations (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. SB 375 does not prevent CARB from adopting additional regulations.

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 mitigation measures required by an applicable prior environmental document.

CARB 2008 SCOPING PLAN

The first Scoping Plan was adopted by CARB on December 11, 2008 (2008 Scoping Plan). The 2008 Scoping Plan contained measures designed to reduce the State’s emissions to 1990 levels by the year 2020 to comply with AB 32 (24). The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be 596 MMTCO_{2e} in 2020. In December 2007, CARB approved a 2020 emissions limit of 472 MMTCO_{2e} for the state (24).

FIRST UPDATE TO THE SCOPING PLAN

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Scoping Plan Update adopted May 22, 2014, highlights California’s progress toward meeting the near-term 2020 GHG reduction goals defined in the 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 MMTCO_{2e} 1990 emissions level and 2020 GHG emission limit, established in response to AB 32, are slightly higher at 431 MMTCO_{2e} (26).

2017 CARB SCOPING PLAN

In November 2017, CARB released the 2017 Scoping Plan Update, which implements the 2030 target of a 40% reduction below 1990 levels 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 Update established a new emissions limit of 260 MMTCO_{2e} for the year 2030, which corresponds to a 40% decrease in 1990 levels by 2030.

California's climate strategy will require contributions from all sectors of the economy, including the land base, and will 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, jobs-housing balance and conservation of agricultural and other lands. Requirements for direct GHG reductions at refineries will 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 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 zero-emission vehicles (ZEV) trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy (SLPS), which focuses on reducing CH₄ and hydrofluorocarbon 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 acknowledged 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 Update 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 evidenced-based bright-line numeric thresholds—consistent with the 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 mitigation measures that avoid or minimize project emissions to the degree feasible; or, may utilize a performance-based metric using a CAP or other plan to reduce GHG emissions is appropriate (27).

According to research conducted by the Lawrence Berkeley National Laboratory (LBNL) in 2015 and supported by CARB, California, was expected to (and subsequently did) meet the 2020 reduction targets under AB 32 (28) and 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 anticipated future GHG-reducing policies. The CALGAPS model showed that, as of 2017, GHG emissions through 2020 could range from 317 to 415 MTCO₂e per year (MTCO₂e/yr), “indicating that existing state policies will likely allow California to meet its target [of 2020 levels under AB 32].” CALGAPS also showed that by 2030, emissions could range from 211 to 428 MTCO₂e/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 (29) (30).

2022 CARB SCOPING PLAN

On December 15, 2022, CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) (45). The 2022 Scoping Plan builds on the 2017 Scoping Plan as well as the requirements set forth by AB 1279, which directs the state to become carbon neutral no later than 2045. To achieve this statutory objective, the 2022 Scoping Plan lays out how California can reduce GHG emissions by 85% below 1990 levels and achieve carbon neutrality by 2045. The Scoping Plan scenario to do this is to “deploy a broad portfolio of existing and emerging fossil fuel alternatives and clean technologies, and align with statutes, Executive Orders, Board direction, and direction from the governor.” The 2022 Scoping Plan sets one of the most aggressive approaches to reach carbon neutrality in the world. Unlike the 2017 Scoping Plan, CARB no longer includes a numeric per capita threshold and instead advocates for compliance with a local GHG reduction strategy (CAP) consistent with CEQA Guidelines section 15183.5.

The key elements of the 2022 CARB Scoping Plan focus on transportation - the regulations that will impact this sector are adopted and enforced by CARB on vehicle manufacturers and outside the jurisdiction and control of local governments. As stated in the Plan’s executive summary:

“The major element of this unprecedented transformation is the aggressive reduction of fossil fuels wherever they are currently used in California, building on and accelerating carbon reduction programs that have been in place for a decade and a half. That means rapidly moving to zero-emission transportation; electrifying the cars, buses, trains, and trucks that now constitute California’s single largest source of planet-warming pollution.”

“[A]pproval of this plan catalyzes a number of efforts, including the development of new regulations as well as amendments to strengthen regulations and programs already in place, not just at CARB but across state agencies.”

Under the 2022 Scoping Plan, the State will lead efforts to meet the 2045 carbon neutrality goal through implementation of the following objectives:

- Reimagine roadway projects that increase VMT in a way that meets community needs and reduces the need to drive.
- Double local transit capacity and service frequencies by 2030.
- Complete the High-Speed Rail (HSR) System and other elements of the intercity rail network by 2040.
- Expand and complete planned networks of high-quality active transportation infrastructure.
- Increase availability and affordability of bikes, e-bikes, scooters, and other alternatives to light-duty vehicles, prioritizing needs of underserved communities.
- Shift revenue generation for transportation projects away from the gas tax into more durable sources by 2030.
- Authorize and implement roadway pricing strategies and reallocate revenues to equitably improve transit, bicycling, and other sustainable transportation choices.
- Prioritize addressing key transit bottlenecks and other infrastructure investments to improve transit operational efficiency over investments that increase VMT.
- Develop and implement a statewide transportation demand management (TDM) framework with VMT mitigation requirements for large employers and large developments.
- Prevent uncontrolled growth of autonomous vehicle (AV) VMT, particularly zero-passenger miles.
- Channel new mobility services towards pooled use models, transit complementarity, and lower VMT outcomes.
- Establish an integrated statewide system for trip planning, booking, payment, and user accounts that enables efficient and equitable multimodal systems.
- Provide financial support for low-income and disadvantaged Californians’ use of transit and new mobility services.
- Expand universal design features for new mobility services.
- Accelerate infill development in existing transportation-efficient places and deploy strategic resources to create more transportation-efficient locations.

- Encourage alignment in land use, housing, transportation, and conservation planning in adopted regional plans (RTP/SCS and RHNA) and local plans (e.g., general plans, zoning, and local transportation plans).
- Accelerate production of affordable housing in forms and locations that reduce VMT and affirmatively further fair housing policy objectives.
- Reduce or eliminate parking requirements (and/or enact parking maximums, as appropriate) and promote redevelopment of excess parking, especially in infill locations.
- Preserve and protect existing affordable housing stock and protect existing residents and businesses from displacement and climate risk.

Included in the 2022 Scoping Plan is a set of Local Actions (Appendix D to the 2022 Scoping Plan) aimed at providing local jurisdictions with tools to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan. Appendix D to the 2022 Scoping Plan includes a section on evaluating plan-level and project-level alignment with the State’s Climate Goals in CEQA GHG analyses. In this section, CARB identifies several recommendations and strategies that should be considered for new development in order to determine consistency with the 2022 Scoping Plan. Notably, this section is focused on Residential and Mixed-Use Projects, in fact CARB states in Appendix D (page 4): “...focuses primarily on climate action plans (CAPs) and local authority over new residential development. It does not address other land use types (e.g., industrial) or air permitting.”

Additionally on Page 21 in Appendix D, CARB states: “The recommendations outlined in this section apply only to residential and mixed-use development project types. California currently faces both a housing crisis and a climate crisis, which necessitates prioritizing recommendations for residential projects to address the housing crisis in a manner that simultaneously supports the State’s GHG and regional air quality goals. CARB plans to continue to explore new approaches for other land use types in the future.” As such, it would be inappropriate to apply the requirements contained in Appendix D of the 2022 Scoping Plan to any land use types other than residential or mixed-use residential development.

PROGRESS IN ACHIEVING AB 32 TARGETS AND REMAINING REDUCTIONS REQUIRED

The state has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The progress is shown in updated emission inventories prepared by CARB for 2000 through 2019 (31). The State has achieved the Executive Order S-3-05 target for 2010 of reducing GHG emissions to 2000 levels. As shown below, the 2010 emission inventory achieved this target.

- 1990: 431 MMTCO₂e (AB 32 2020 target, updated in 2014)
- 2000: 468 MMTCO₂e
- 2010: 447.9 MMTCO₂e
- 2019: 418.2 MMTCO₂e (2020 target of 431 MMTCO₂e has been met)

AB 1493

California AB 1493, enacted on July 22, 2002, 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 second phase of the implementation for the Pavley bill is currently in effect and was incorporated into Amendments to the Low-Emission Vehicle Program (LEV III) or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34% from 2016 levels by 2025. The new rules will 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 will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.

SB 350— CLEAN ENERGY AND POLLUTION REDUCTION ACT OF 2015

In October 2015, the legislature approved, and the Governor 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. 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 will be achieved through the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the Independent System Operator to develop more regional electrified transmission markets and to improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

SB 32/AB 197

On September 8, 2016, the Governor signed Senate Bill (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. SB 32 builds upon the AB 32 goal of 1990 levels by 2020 and provides an intermediate goal to achieving the 2050 goal identified in S-3-05, which set a statewide GHG reduction target of 80% below 1990 levels. AB 197 created a legislative committee to oversee regulators to ensure that CARB not only responds to the Governor, but also the Legislature (32).

CAP-AND-TRADE PROGRAM

The Scoping Plan identified a Cap-and-Trade Program as one of the key strategies for California to reduce GHG emissions for certain sectors. According to CARB, a cap-and-trade program would help put California on the path to meet its goal of reducing GHG emissions to 1990 levels by the year 2020 and ultimately achieving an 80% reduction from 1990 levels by 2050. 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. See Title 17 of the CCR §§ 95800 to 96023. The Cap-and-Trade Program is designed to reduce GHG emissions from major sources (deemed “covered entities”) by setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve AB 32’s emission-reduction mandate of returning to 1990 levels of emissions by 2020. The statewide cap for GHG emissions from the capped sectors (e.g., electricity generation, petroleum refining, and cement production) commenced in 2013 and will decline over time, achieving GHG emission reductions throughout the program’s duration. Land use projects such as the proposed Project are not directly subject to the Cap-and-Trade program; however sectors associated with land use development such as energy and fuel usage are deemed covered entities that would indirectly be subject to Cap-and-Trade.

Covered entities that emit more than 25,000 MTCO₂e/yr must comply with the Cap-and-Trade Program. Triggering of the 25,000 MTCO₂e/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” (30) for each MTCO₂e 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. 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:

“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 (CARB 2014)."

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program will be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California will meet its 2020 GHG emissions reduction mandate:

"The Cap-and-Trade Program establishes an overall limit on GHG emissions from most of the California economy—the "capped sectors." Within the capped sectors, some of the reductions are being accomplished through direct regulations, such as improved building and appliance efficiency standards, the [Low Carbon Fuel Standard] LCFS, and the 33% [Renewables Portfolio Standard] RPS. Whatever additional reductions are needed to bring emissions within the cap is accomplished through price incentives posed by emissions allowance prices. Together, direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap. The Cap-and-Trade Regulation provides assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85% of California's GHG emissions. In sum, the Cap-and-Trade Program will achieve aggregate, rather than site specific or project-level, GHG emissions reductions. Also, due to the regulatory architecture adopted by CARB in AB 32, the reductions attributed to the Cap-and-Trade Program can change over time depending on the State's emissions forecasts and the effectiveness of direct regulatory measures (26)."

As of January 1, 2015, the Cap-and-Trade Program covered approximately 85% of California's GHG emissions. 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. While the Cap-and-Trade Program technically covered fuel suppliers as early as 2012, they did not have a compliance obligation (i.e., they were not fully regulated) until 2015. The Cap-and-Trade Program covers the GHG emissions associated with the combustion of transportation fuels in California, whether refined in-state or imported. The point of regulation for transportation fuels is when they are "supplied" (i.e., delivered into commerce). Accordingly, as with stationary source GHG emissions and GHG emissions attributable to electricity use, virtually all, if not all, of GHG emissions from CEQA projects associated with VMT are covered by the Cap-and-Trade Program (33). In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. "Capped" strategies are subject to the proposed cap-and-trade program. The Scoping

Plan states that the inclusion of these emissions within the Program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. “Uncapped” strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions.³

ADVANCED CLEAN TRUCKS RULE

On March 15, 2021 the Advanced Clean Trucks rule (13 CCR 1963) became effective. The purpose of this regulation is to accelerate California’s transition to zero-emission medium- and heavy-duty vehicles. Under the rule, truck manufacturers are required to sell zero-emission trucks as an increasing percentage of their annual sales in California, beginning in 2024 and continuing through 2035.

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

CCR, Title 20: Division 2, Chapter 4, Article 4, Sections 1601-1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three 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 or other mobile equipment (CEC 2012).

TITLE 24 CCR

California Code of Regulations (CCR) Title 24 Part 6: 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. CCR, Title 24, Part 11: California Green

³ On March 17, 2011, the San Francisco Superior Court issued a final decision in *Association of Irrigated Residents v. California Air Resources Board* (Case No. CPF-09-509562). While the Court upheld the validity of CARB Scoping Plan for the implementation of AB 32, the Court enjoined CARB from further rulemaking under AB 32 until CARB amends its CEQA environmental review of the Scoping Plan to address the flaws identified by the Court. On May 23, 2011, CARB filed an appeal. On June 24, 2011, the Court of Appeal granted CARB’s petition staying the trial court’s order pending consideration of the appeal. In the interest of informed decision-making, on June 13, 2011, CARB released the expanded alternatives analysis in a draft Supplement to the AB 32 Scoping Plan Functional Equivalent Document. CARB Board approved the Scoping Plan and the CEQA document on August 24, 2011.

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

CALGreen is updated on a regular basis, with the most recent approved update consisting of the 2022 California Green Building Code Standards that will be effective on January 1, 2023. The CEC anticipates that the 2022 energy code will provide \$1.5 billion in consumer benefits and reduce GHG emissions by 10 million metric tons (34). The Project would be required to comply with the applicable standards in place at the time plan check submittals are made. These require, among other items (35):

NONRESIDENTIAL MANDATORY MEASURES

- 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).
- 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). Additionally, Table 5.106.5.4.1 specifies requirements for the installation of raceway conduit and panel power requirements for medium- and heavy-duty EV supply equipment for warehouses, grocery stores, and retail stores.
- Outdoor light pollution reduction. Outdoor lighting systems shall be designed to meet the backlight, uplight 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 reuse 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).

MWELO

The MWELO was required by AB 1881, the Water Conservation Act. The bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20% consistent with (SBX-7-7) 2020 mandate are expected upon compliance with the ordinance. New development projects that include landscape areas of 500 sf or more are subject to the Ordinance. The update requires:

- More efficient irrigation systems;
- Incentives for graywater usage;
- Improvements in on-site stormwater capture;
- Limiting the portion of landscapes that can be planted with high water use plants; and

- Reporting requirements for local agencies.

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 heavy-duty 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 model year 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 1 AND 2 HEAVY-DUTY VEHICLE GHG STANDARDS

In 2013, CARB 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 heavy-duty 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. In 2011, the EPA adopted its rule for HDTs and engines which has compliance requirements for new compression and spark ignition engines, as well as trucks from Class 2b through Class 8. Compliance requirements begin with model year 2014 with stringency levels increasing through model year 2018. The rule organizes truck compliance into three groupings, which include a) heavy-duty 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 model year HDT vehicles, including trailers.

In February 2019, the OAL approved the Phase 2 Heavy-Duty Vehicle GHG Standards and became effective April 1, 2019. The Phase 2 GHG standards are needed to offset projected VMT growth and keep heavy-duty truck CO₂ emissions declining. The federal Phase 2 standards establish for the first time, federal emissions requirements for trailers hauled by heavy-duty tractors. The federal Phase 2 standards are more technology-forcing than the federal Phase 1 standards, requiring manufacturers to improve existing technologies or develop new technologies to meet the standards. The federal Phase 2 standards for tractors, vocational vehicles, and heavy-duty pick-up trucks and vans (PUVs) will be phased-in from 2021-2027; additionally for trailers, the standards are phased-in from 2018 (2020 in California) through 2027 (36).

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).” Section 21097 was also added to the Public Resources Code. It provided CEQA protection until January 1, 2010, for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006, in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA.

On December 28, 2018, the *CEQA Guidelines* were amended to reference climate change and provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. CEQA Guidelines section 15064.4 affords lead agencies the discretion to determine for each project whether to quantify greenhouse gas emissions and/or rely on a qualitative analysis or performance based standards; in determining the significance of a project’s greenhouse gas emissions, the lead agency should consider factors, among others, including (1) the extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting, (2) the extent to which the project complies with regulations or requirements adopted to implement a regional or local plan for the reduction or mitigation of greenhouse gas emissions.

2.7.4 REGIONAL

The project is within the SCAB, which is under the jurisdiction of the SCAQMD.

SCAQMD

SCAQMD is the agency responsible for air quality planning and regulation in the SCAB. The SCAQMD addresses the impacts to climate change of projects subject to SCAQMD permit as a lead agency if they are the only agency having discretionary approval for the project and acts as a responsible agency when a land use agency must also approve discretionary permits for the project. The SCAQMD acts as an expert commenting agency for impacts to air quality. This expertise carries over to GHG emissions, so the agency helps local land use agencies through the development of models and emission thresholds that can be used to address GHG emissions.

In 2008, SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the SCAB. The Working Group developed several different options that are contained in the SCAQMD Draft Guidance Document – Interim CEQA GHG Significance Threshold that could be applied by lead agencies. The working group has not provided additional guidance since release of the interim guidance in 2008. The SCAQMD Board has not approved the thresholds which remain interim. The interim thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions.
- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to the project's operational emissions⁴. Although this Tier proposed specific screening thresholds for residential/commercial, industrial, and mixed use, they were never adopted by SCAQMD.
 - Tier 4 has the following options:
 - Option 1: Reduce Business-as-Usual (BAU) emissions by a certain percentage; this percentage is currently undefined.
 - Option 2: Early implementation of applicable AB 32 Scoping Plan measures
 - Option 3: 2020 target for service populations (SP), which includes residents and employees: 4.8 MTCO₂e per SP per year for projects and 6.6 MTCO₂e per SP per year for plans;
 - Option 3, 2035 target: 3.0 MTCO₂e per SP per year for projects and 4.1 MTCO₂e per SP per year for plans
 - Tier 5 involves mitigation offsets to achieve target significance threshold.

⁴ Amortizing construction emissions over 30 years is also consistent with the methodology described in Riverside County's *Greenhouse Gas Emissions Screening Tables* March 2019.

The SCAQMD's interim thresholds used the Executive Order S-3-05-year 2050 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap CO₂ concentrations at 450 ppm, thus stabilizing global climate.

SCAQMD Regulation XXVII, adopted in 2009 includes the following rules:

- Rule 2700 defines terms and post global warming potentials.
- Rule 2701, SoCal Climate Solutions Exchange, establishes a voluntary program to encourage, quantify, and certify voluntary, high quality certified GHG emission reductions in the SCAQMD.
- Rule 2702, GHG Reduction Program created a program to produce GHG emission reductions within the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

On May 8, 2021, South Coast AQMD adopted Warehouse Indirect Source Rule 2305, which includes the Warehouse Actions and Investments to Reduce Emissions Program (WAIRE), and Rule 316. Rule 2305 establishes for the first time a regulatory program designed to reduce air pollution (and indirect GHG emissions) caused by warehouse-related activities and is focused on emissions from vehicles that service large warehouses. Rule 316 establishes a fee system to support the Rule 2305 program on an ongoing basis. Rules 2305 and 316 apply to operators and owners of existing and new warehouses with floor space greater than or equal to 100,000 square feet within a single building (i.e., large warehouses). Rules 2305 and 316 require such operators and owners to annually take actions with respect to their warehouses that either reduce emissions regionally and locally or facilitate emission reductions. Specifically, owners and operators must "earn" a specific number of WAIRE Points. However, warehouse owners are only required to earn WAIRE Points if they are also a warehouse operator. If a warehouse owner is not an operator, they are not required to earn WAIRE Points even if the operator in their warehouse does not earn the required number of WAIRE Points. Warehouse owners are only required to submit a Warehouse Operations Notification to the SCAQMD.

The number of WAIRE Points required for a specific operator is based on the intensity of operations (i.e., number of truck trips and type of trucks) at each of their warehouses every year. The required points are known as the WAIRE Points Compliance Obligation (WPCO). The WPCO is calculated based on a 12-month survey of truck trips entering or exiting the site, the truck data is weighted based on the types of trucks, and activity is projected for the next year. Thus, the WAIRE Points pay for the prior year's emissions based on points earned in subsequent years.

WAIRE Points are earned by implementing a menu of items including purchasing/renting/leasing near-zero (NZE) and zero emission (ZE) yard equipment and/or trucks, installing on-site ZE fueling stations, and proving on-site solar PV systems that are intended to offset or reduce warehouse emissions. Owners and operators may also implement custom WAIRE plans for individual facilities, subject to South Coast AQMD approval; or pay mitigation fees to have the SCAQMD implement measures within the SCAB. Owners and operators that over-comply may transfer excess WAIRE Points earned in one year to a subsequent year or may transfer WAIRE points to another site within their control. WAIRE Points cannot be transferred to other operators and expire after 3 years. Rule 2305 also requires reporting information about facility operations and

recordkeeping. Rule 316 is the companion rule to Rule 2305 and establishes the administrative fees that Rule 2305 warehouse owners and operators must pay to support South Coast AQMD compliance activities.

While the Project proponent may be defined as a warehouse owner and would submit a Warehouse Operation Notice(s), as required, the Project proponent does not intend to be the warehouse operator and has no knowledge of the future operations. Thus, the specific information required by Rule 2305 for calculating the WPCO is unavailable, and the necessary number of points is unknown. Finally, the WAIRE points expire after 3 years and are based on actions of future operators and are thus temporary and could not be calculated. Therefore, even though the WAIRE program will reduce emissions for warehouse activities in the region, no emission reductions from the WAIRE Program can be calculated for this analysis.

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3 PROJECT GHG EMISSIONS

3.1 MODELS EMPLOYED TO CALCULATE GHG EMISSIONS

In May 2022 the California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released the latest version of CalEEMod version 2022.1. The purpose of this model is to calculate construction-source and operational-source criteria pollutant and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (37). Accordingly, the latest version of CalEEMod has been used for this Project to determine construction and operational air quality emissions. Output from the model runs for both construction and operational activity are provided in Appendices 3.1 through 3.2. CalEEMod includes GHG emissions from the following source categories: construction, area sources, energy, mobile, waste, water, and refrigerant leakage.

In May 2022, the EPA approved the 2021 version of the Emissions FACtor model (EMFAC 2021) web database for use in SIP and transportation conformity analyses. EMFAC 2021 is a mathematical model that was developed to calculate emission rates, fuel consumption, VMT from motor vehicles that operate on highways, freeways, and local roads in California and is used by the CARB. EMFAC 2021 is incorporated into CalEEMod 2022.1 and thus included in the modeling that is provided in the analysis.

3.2 LIFE-CYCLE ANALYSIS NOT REQUIRED

A full life-cycle analysis (LCA) for construction and operational activity is not included in this analysis due to the lack of consensus guidance on LCA methodology at this time (38). Life-cycle analysis (i.e., assessing economy-wide GHG emissions from the processes in manufacturing and transporting all raw materials used in the Project development, infrastructure and on-going operations) depends on emission factors or econometric factors that are not well established for all processes. At this time, an LCA would be extremely speculative and thus has not been prepared.

The SCAQMD recommends analyzing direct and indirect project GHG emissions generated within California and not life-cycle emissions because the life-cycle effects from a project could occur outside of California, are not be very well understood or documented (39). Additionally, the science to calculate life cycle emissions is not yet established or well defined; therefore, SCAQMD has not recommended, and is not requiring, life-cycle emissions analysis.

3.3 CONSTRUCTION EMISSIONS

3.3.1 CONSTRUCTION DURATION

Project construction activities would generate GHG emissions. The report *Orchard Logistics Center Air Quality Impact Analysis Report (AQIA)* contains detailed information regarding Project construction activities (40). As discussed in the AQIA, construction is expected to commence in June 2023 and will be completed in October 2024. The construction schedule utilized in the

analysis, shown in Table 3-1, represents a conservative analysis 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 stringent⁵. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per *CEQA Guidelines* (41).

TABLE 3-1: CONSTRUCTION DURATION

Construction Activity	Start Date	End Date	Days
Demolition/Crushing	06/01/2023	07/12/2023	30
Site Preparation	07/13/2023	08/23/2023	30
Grading	08/24/2023	11/15/2023	60
Building Construction	11/16/2023	07/24/2024	180
Paving	07/25/2024	10/16/2024	60
Architectural Coating	07/25/2024	10/16/2024	60

3.3.2 CONSTRUCTION EQUIPMENT

A summary of construction equipment by phase is provided at Table 3-2. Consistent with industry standards and typical construction practices, each piece of equipment listed in Table 3-4 will operate up to a total of eight (8) hours per day, or more than two-thirds of the period during which construction activities are allowed pursuant to the code.

TABLE 3-2: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Activity	Equipment	Amount	Hours Per Day
Demolition/Crushing	Concrete/Industrial Saws	1	8
	Excavators	3	8
	Rubber Tired Dozers	2	8
Site Preparation	Crawler Tractors	3	8
	Rubber Tired Dozers	3	8
Grading	Crawler Tractors	2	8
	Excavators	2	8
	Graders	1	8
	Rubber Tired Dozers	1	8
	Scrapers	2	8
	Cranes	2	8

⁵ As shown in the CalEEMod User's Guide Version 2016.3.2, 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.

Construction Activity	Equipment	Amount	Hours Per Day
Building Construction	Forklifts	4	8
	Generator Sets	2	8
	Tractors/Loaders/Backhoes	3	8
	Welders	2	8
Paving	Pavers	2	8
	Paving Equipment	2	8
	Rollers	2	8
Architectural Coating	Air Compressors	1	8

3.3.3 CONSTRUCTION EMISSIONS SUMMARY

For construction phase Project emissions, GHGs are quantified and amortized over 30 years, the economic life of a development project. To amortize the emissions over the life of the Project, the SCAQMD recommend calculating the total GHG emissions for the construction activities, dividing it by a 30-year Project life then adding that number to the annual operational phase GHG emissions⁶ (39). 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	Refrigerants	Total CO ₂ e ⁷
2023	468.00	0.02	0.01	0.18	472.00
2024	685.00	0.03	0.03	0.60	694.00
Total GHG Emissions	1,153.00	0.05	0.04	0.78	1,166.00
Amortized Construction Emissions	38.43	1.67E-03	1.33E-03	0.03	38.87

3.4 OPERATIONAL EMISSIONS

Operational activities associated with the Project will result in emissions of CO₂, CH₄, and N₂O from the following primary sources:

- Area Source Emissions
- Energy Source Emissions

⁶ Amortizing construction emissions over 30 years is consistent with the methodology described in Riverside County's *Greenhouse Gas Emissions Screening Tables* March 2019.

⁷ 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.

- Mobile Source Emissions
- On-Site Cargo Handling Equipment Emissions
- Transportation Refrigeration Units (TRU) Emissions
- Water Supply, Treatment, and Distribution
- Solid Waste

3.4.1 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. It should be noted that as October 9, 2021, Governor Gavin Newsom signed AB 1346. The bill aims to ban the sale of new gasoline-powered equipment under 25 gross horsepower (known as small off-road engines [SOREs]) by 2024. For purposes of analysis, the emissions associated with landscape maintenance equipment were calculated based on assumptions provided in CalEEMod.

3.4.2 ENERGY SOURCE EMISSIONS

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 lighting⁸. GHGs are also emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions. Natural gas and electricity usage associated with the Project were calculated by CalEEMod using default parameters.

3.4.3 MOBILE SOURCE EMISSIONS

The Project related air quality emissions derive primarily from vehicle trips associated with the Project, including employee trips, truck trips, and commercial trips to and from the site associated with the proposed uses.

PASSENGER VEHICLE TRIP LENGTH AND FLEET MIX

In order to determine emissions from passenger car vehicles, CalEEMod defaults for trip length and trip purpose were utilized. Default vehicle trip lengths for primary trips will be populated using data from the local metropolitan planning organizations/Regional Transportation Planning Agencies (MPO/RTPA). Trip type percentages and trip lengths provided by MPO/RTPAs truncate data at their demonstrative borders. This analysis assumes that passenger cars include Light-

⁸ 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.

Duty-Auto vehicles (LDA), Light-Duty-Trucks (LDT1⁹ & LDT2¹⁰), Medium-Duty-Vehicles (MDV), and Motorcycles (MCY) vehicle types. In order to account for emissions generated by passenger cars, the fleet mix in Table 3-4 was utilized, the CalEEMod calculated passenger car trip length is 21.16 miles.

TABLE 3-4: PASSENGER CAR FLEET MIX

Land Use	% Vehicle Type				
	LDA	LDT1	LDT2	MDV	MCY
High-Cube Cold Storage	54.02	4.38	21.48	17.54	2.58
High-Cube Fulfillment Center					

Note: The Project-specific passenger car fleet mix used in this analysis is based on a proportional split utilizing the default CalEEMod percentages assigned to LDA, LDT1, LDT2, MDV, and MCY vehicle types.

TRUCK TRIP LENGTH AND FLEET MIX

To determine emissions from trucks for the proposed industrial uses, the analysis incorporated the SCAQMD recommended truck trip length of 15.3 miles for 2-axle (LHDT1, LHDT2), 14.2 miles for 3-axle (MHDT) trucks, and 40 miles for 4+-axle (HHDT) trucks and weighting the average trip lengths using traffic trip percentages. As such, an overall truck trip length of 33.39 miles was utilized, as well as an assumption of 100% primary trips for the proposed industrial land uses. 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 by the SCAQMD recommended truck mix, by axle type. Heavy trucks are broken down by truck type (or axle type) and are categorized as either Light-Heavy-Duty Trucks (LHDT1¹¹ & LHDT2¹²)/2-axle, Medium-Heavy-Duty Trucks (MHDT)/3-axle, and Heavy-Heavy-Duty Trucks (HHDT)/4+-axle. To account for emissions generated by trucks, the fleet mix in Table 3-5 was utilized.

TABLE 3-5: TRUCK FLEET MIX

Land Use	% Vehicle Type			
	LHDT1	LHDT2	MHDT	HHDT
High-Cube Cold Storage	25.99	7.34	12.50	54.17
High-Cube Fulfillment Center	8.36	2.36	10.71	78.57

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.

⁹ 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.

¹⁰ Vehicles under the LDT2 category have a GVWR of less than 6,000 lbs. and ETW between 3,751 lbs. and 5,750 lbs.

¹¹ Vehicles under the LHDT1 category have a GVWR of 8,501 to 10,000 lbs.

¹² Vehicles under the LHDT2 category have a GVWR of 10,001 to 14,000 lbs.

3.4.4 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 two (2) 200 horsepower (hp), compressed natural gas or gasoline-powered tractors/loaders/backhoes operating at 4 hours a day¹³ for 365 days of the year.

3.4.5 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 24 trucks (48 truck trips per day) have the potential to include TRUs, which accounts for all truck trips that would be associated with up to 61,000 sf of high-cube cold storage use, as summarized in the *Orchard Logistics Center Traffic Analysis* (1). TRUs are accounted for during on-site and off-site travel. The TRU calculations are based on EMFAC 2021. EMFAC 2021 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.

3.4.6 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.

3.4.7 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

¹³ 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.

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 EMISSIONS SUMMARY

The annual GHG emissions associated with the operation of the proposed Project are estimated to be approximately 9,731.28 MT CO₂e per year as summarized in Table 3-6.

TABLE 3-6: PROJECT GHG EMISSIONS

Emission Source	Emissions (MT/yr)				
	CO ₂	CH ₄	N ₂ O	Refrigerants	Total CO ₂ e
Annual construction-related emissions amortized over 30 years	38.43	0.00	0.00	0.03	38.87
Mobile Source	6,574.00	0.16	0.69	9.32	6,794.00
Area Source	12.40	< 0.005	< 0.005	0.00	12.70
Energy Source	1,894.00	0.17	0.01	0.00	1,901.00
Water Usage	199.00	4.60	0.11	0.00	347.00
Waste	51.20	5.11	0.00	0.00	179.00
Refrigerants	0.00	0.00	0.00	10.30	10.30
TRU Source					353.73
On-Site Equipment					94.68
Total CO₂e (All Sources)	9,731.28				

4 GHG IMPACTS

4.1 DETERMINING SIGNIFICANCE THRESHOLDS

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 of Regulations §§15000, et seq.). Based on these significance criteria, a project would result in a significant impact related to GHG if it would (42):

- GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

The evaluation of an impact under CEQA requires measuring data from a project against both existing conditions and a “threshold of significance.” For establishing significance thresholds, the Office of Planning and Research’s amendments to the CEQA Guidelines Section 15064.7(c) state “[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.”

CEQA Guidelines Section 15064.4(a) further states, “. . . A lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use . . . ; or (2) Rely on a qualitative analysis or performance based standards.”

CEQA Guidelines Section 15064.4 provides that a lead agency should consider the following factors, among others, in assessing the significance of impacts from greenhouse gas emissions:

- **Consideration #1:** The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- **Consideration #2:** Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- **Consideration #3:** The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project’s incremental contribution of greenhouse gas emissions. In determining the significance of impacts, the lead agency may consider a project’s consistency with the State’s long-term climate goals or strategies, provided that substantial evidence supports the agency’s analysis of how those goals or strategies address the project’s incremental contribution to climate change and its conclusion that the project’s incremental contribution is not cumulatively considerable.

Section 15064.4 thus provides options for determining whether GHG emissions are significant. It does not establish a threshold of significance or require that a numeric threshold of significance be used. If lead agencies require quantification, they have the discretion to establish significance thresholds for their respective jurisdictions, and, in establishing those thresholds, a lead agency may appropriately look to thresholds developed by other public agencies, or suggested by other experts, such as the California Air Pollution Control Officers Association (CAPCOA), as long as any threshold chosen is supported by substantial evidence (see CEQA Guidelines Section 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130(f)).

Based on the foregoing guidance, the City of Beaumont 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 per year threshold recommended by SCAQMD staff for residential and commercial sector projects against which to compare Project-related GHG emissions.

The 3,000 MTCO₂e per year threshold is based on a 90 percent emission "capture" rate methodology. Prior to its use by the SCAQMD, the 90 percent 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 percent emission capture rate means that unmitigated GHG emissions from the top 90 percent 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 percent of all GHG-producing projects would be excluded from detailed analysis. A GHG significance threshold based on a 90 percent 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 percent 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 percent of projected statewide GHG emissions in the Year 2050 (43).

In setting the threshold at 3,000 MTCO₂e per year, 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 per year. 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 per year) 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 per year 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 per year 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 percent below 1990 levels by 2050] as the basis for deriving the screening level” and, thus, remains valid for use in 2022 (43). 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 per year 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 per year, the Project would be considered a substantial source of GHG emissions.

4.2 PROJECT IMPACTS

Implementation of a development project could contribute to global climate change through direct emissions of GHGs from on-site area sources and vehicle trips generated by the project, and indirectly through offsite energy production required for on-site activities, water use, and waste disposal. Because no single project is large enough to result in a measurable increase in global concentrations of GHG emissions, climate change impacts of a project are considered on a cumulative basis.

As previously noted, a project would result in a significant impact related to GHG if it would (42):

GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

The annual GHG emissions associated with the operation of the proposed Project would result in direct and indirect emissions of CO₂, CH₄, and N₂O and would not generate other GHGs of sufficient quantity to affect the analysis. Therefore, this analysis focuses on these three forms of GHG emissions. Direct Project-related GHG emissions include emissions from construction activities, area sources, and mobile sources, while indirect sources include emissions from

electricity consumption, water demand, and solid waste generation. Project-related GHG emissions were quantified with CalEEMod, which relies upon vehicle trip rates and Project-specific land use data to calculate emissions (as discussed previously in Section 3.0 of this report. The emissions are summarized in Table 3-6 (previously presented). As shown construction and operation of the Project would generate a total of approximately 9,731.28 MTCO₂e/yr, which would exceed the significance threshold of 3,000 MTCO₂e/yr; therefore, Project-related GHG emissions are considered potentially significant. The majority of the GHG emissions (70 percent) are associated with non-construction related mobile sources, as shown on Table 3-6, previously presented. Emissions of motor vehicles are controlled by State and Federal standards, and the Project has no control over these standards.

MITIGATION MEASURES

SUMMARY OF PROJECT GHG MITIGATION

The following summarizes pertinent GHG reducing aspects of the mitigation measures incorporated into the Proposed Project.

MM GHG-1

Prior to the issuance of building permits, the Project Applicant shall provide documentation to the City as part of the plan check process, demonstrating that the Project shall install measures listed below. Implementation of these measures shall be verified by the City prior to the issuance of final Certificate of Occupancy.

- Enhanced window insulation (0.4 U-factor, 0.32 SHGC);
- Duct insulation (R-6);
- A 500kW (kilowatt) solar photovoltaic (PV) system that is expected to generate approximately 825,000 kilowatt-hours (kWh) per year;
- High efficiency HVAC (EER 15/80% AFUE or 8 HSPF); and
- High efficiency lights (>50% of fixtures) to reduce energy usage.
- Weather-based irrigation control systems combined with drip irrigation.
- Low flow toilets, urinals, and bathroom faucets to reduce water usage.

MM GHG-2

All landscape equipment (e.g. leaf blower) used for property management shall be electric powered only. The property manager/facility owner shall provide documentation (e.g., purchase, rental, and/or services agreement) to the Planning Department to verify, to the City's satisfaction, that all landscaping equipment utilized will be electric powered.

MM GHG-3

All on-site outdoor cargo-handling equipment (including yard trucks, hostlers, yard goats, pallet jacks, forklifts, and other on-site equipment) shall be electric or non-diesel fueled. All on-site indoor forklifts shall be powered by electricity.

MM GHG-4

Prior to issuance of occupancy permits, the Project operator shall prepare and submit a Transportation Demand Management (TDM) Program detailing strategies for reducing the use of single occupant vehicles by employees by increasing carpool/vanpool participation and transit use. Additionally, the TDM program may provide for alternative work or compressed work schedules to reduce the number of days an employee commutes to work.

MM GHG-5

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-6

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.

MM GHG-7

Prior to the issuance of building permit, the buildings' electrical room shall be sufficiently sized to hold additional panels that may be needed to supply power for future installation of electric charging systems for electric trucks and power transport refrigeration units (TRUs). Conduit shall be installed from the electrical room to tractor trailer parking spaces in logical locations onsite to facilitate future electric truck charging. Conduit shall be installed between the electrical room and the loading docks to facilitate the use of electric plug in TRUs.

MM GHG-8

All truck/dock bays that serve cold storage facilities within the proposed buildings shall be electrified to facilitate plug-in capabilities and support use of electric standby and/or hybrid electric transport refrigeration units (TRUs).

MM GHG-9

Prior to the start of construction activities, the Project Applicant, or its designee, shall ensure that all 50-horsepower or greater diesel-powered equipment is powered with California Air Resources Board (CARB)-certified Tier 4 Final engines, except where the Project Applicant establishes to the satisfaction of the City of Beaumont (City) that Tier 4 Final equipment is not available. An exemption from these requirements may be granted by the City if the City documents that equipment with the required tier is not reasonably available and corresponding reductions in criteria air pollutant emissions are achieved from other construction equipment to the extent feasible. Before an exemption may be considered by the City, the applicant shall be required to demonstrate that two construction fleet owners/operators in Riverside County were contacted and that those owners/operators confirmed Tier 4 Final equipment could not be located within Riverside County. In order to meet this requirement to demonstrate that such equipment is not available, the Project Applicant must seek bids/proposals from contractors of large fleets, defined by the California Air Resources Board as, "A fleet with a total max hp (as defined below) greater than 5,000 hp." In addition, this should not be limited to Riverside County but statewide. In the

event that Tier 4 Final equipment is not feasible, then Tier 4 interim equipment shall be required. In the event that Tier 4 Interim equipment is not available, Tier 3 equipment shall be used. All construction equipment shall be tuned and maintained in accordance with the manufacturer's specifications.

MM GHG-10

Legible, durable, weather-proof signs shall be placed at truck access gates, loading docks, and truck parking areas that identify applicable CARB anti-idling regulations. At a minimum, each sign shall include: 1) instructions for truck drivers to shut off engines when not in use; 2) instructions for drivers of diesel trucks to restrict idling to no more than five (5) minutes once the vehicle is stopped, the transmission is set to "neutral" or "park," and the parking brake is engaged; and 3) telephone numbers of the building facilities manager and the CARB to report violations. Prior to the issuance of an occupancy permit, the City shall conduct a site inspection to ensure that the signs are in place.

EMISSIONS SUMMARY AFTER MITIGATION

The summary list of mitigation measures above are all designed to reduce GHG emissions attributable to the proposed project. However, most are not quantified the CalEEMod model does not account for emission reductions attributable to these items, and therefore the extent of GHG reductions is uncertain. As an example, the CalEEMod model does not provide reductions achieved via the implementation of EV charging systems. In addition, the requirement for non-diesel outdoor cargo handling equipment is too vague to provide insight into potential GHG reductions. Therefore, the Emissions Summary with Mitigation shown below is a conservative forecast of GHG emissions and the Proposed Project is likely to be less than the total shown in Table 4-2 below.

EMISSIONS SUMMARY WITH MITIGATION

The annual GHG emissions associated with the Project with Mitigation are estimated to be approximately 9,561.28 MT CO₂e per year as summarized in Table 4-1, which also exceeds the 3,000 MT CO₂e per year threshold.

TABLE 4-1: PROJECT GHG EMISSIONS WITH MITIGATION

Emission Source	Emissions (MT/yr)				
	CO ₂	CH ₄	N ₂ O	Refrigerants	Total CO ₂ e
Annual construction-related emissions amortized over 30 years	38.43	0.00	0.00	0.03	38.87
Mobile Source	6,574.00	0.16	0.69	9.32	6,794.00
Area Source	0	0	0	0	0
Energy Source	1,766	0.16	0.01	0.00	1,772
Water Usage	183.00	4.21	0.10	0.00	318.00
Waste	51.20	5.11	0.00	0.00	179.00
Refrigerants	0.00	0.00	0.00	10.30	10.30

Emission Source	Emissions (MT/yr)				
	CO ₂	CH ₄	N ₂ O	Refrigerants	Total CO ₂ e
TRU Source					353.73
On-Site Equipment					94.68
Total CO₂e (All Sources)	9,561.28				

LEVEL OF SIGNIFICANCE

Significant and unavoidable impact. No additional feasible mitigation measures are available that can reduce impacts to less than significant. As explained above, the Project incorporates all feasible mitigation measures that could be implemented to further reduce the Project’s GHG emissions below the 3,000 MTCO₂e threshold. There are no additional measures available that would further reduce emissions because the majority of the Project’s emissions come from mobile sources which are regulated by the State and not the City of Beaumont.

GHG-2: Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

Pursuant to 15064.4 of the *CEQA Guidelines*, a lead agency may rely on qualitative analysis or performance-based standards such as complying with an applicable plan to determine the significance of impacts from GHG emissions (44).

CITY OF BEAUMONT CLIMATE ACTION PLAN

The City approved *Sustainable Beaumont: The City’s Roadmap to Greenhouse Gas Reductions* in 2015 (45), which serves as a long-term plan to achieve sustainability in the City by reducing GHG emissions from existing and future development. A consistency with the applicable goals of this plan is summarized on Table 4-2, as follows:

TABLE 4-2: CONSISTENCY WITH SUSTAINABLE BEAUMONT GOALS

Sustainable Beaumont Goal	Consistency
Goal 1: Increase energy efficiency in existing residential units.	Not Applicable, the Project does not include existing residential land uses therefore this goal does not apply.
Goal 2: Increase energy efficiency in new residential development.	Not Applicable, the Project does not propose new residential land uses therefore this goal does not apply.
Goal 3: Increase energy efficiency in existing commercial units.	Not Applicable, the Project does not include any existing commercial development, therefore this goal does not apply.

Sustainable Beaumont Goal	Consistency
Goal 4: Increase energy efficiency in new commercial development.	No Conflict, the Project would comply with applicable provisions of the California Building Energy Efficiency Standards and applicable mitigation measures that would improve energy efficiency.
Goal 5: Increase energy efficiency through water efficiency.	No Conflict, the Project would be required to comply with the applicable Model Water Efficient Landscape Ordinance (MWELO) and would include drought-tolerant plant materials. Additionally, MM GHG-1 would reduce water usage through the incorporation of low flow toilets, urinals, and bathroom faucets.
Goal 6: Decrease energy demand through reducing urban heat island effect.	No Conflict, the Project will incorporate light-colored building materials that would reduce heat reflection in accordance with the Section 140.3(a) of the California Building Code. The Project would also plant a total of 194 trees on-site including 13 36' box and 181 24' box trees.
Goal 7: Decrease GHG emissions through reducing vehicle miles traveled.	No Conflict, the Project will incorporate a TDM program as required by MM GHG-4
Goal 8: Decrease GHG emissions through reducing solid waste generation.	No Conflict, the Project will comply with AB 939 which requires diversion of a minimum of 50 percent of solid waste from landfills.
Goal 9: Decrease GHG emissions through increasing clean energy use.	No Conflict, MM GHG-1, the Project will incorporate solar photovoltaic solar panels
Goal 10: Decrease GHG emissions from new development through performance standards.	No Conflict, although the City has not implemented a GHG screening table, the Project is consistent with and implements GHG screening tables that have been adopted by the County of Riverside.

SB 375 (SCAG RTP/SCS)

According to SCAG’s 2020-2045 RTP/SCS, employment within Riverside County in 2019 is approximately 812,800 jobs with an anticipated increase to approximately 1,063,800 jobs by 2045, a growth of approximately 251,000 jobs (60). The jobs created by the proposed Project represent a nominal percentage of the anticipated increase in jobs, and therefore, would not result in long-term operational employment growth that exceeds planned growth projections in the RTP/SCS or the AQMP, or result in employment growth that would substantially add to traffic congestion. Additionally, the Project would comply with the policies set forth in the 2020-2045

RTP/SCS and the City of Beaumont General Plan by reducing vehicle trips and VMT, increasing the use of alternative fuel vehicles, and improving energy efficiency.

LEVEL OF SIGNIFICANCE

Less than significant. the Project would not conflict with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of GHG emissions and generation of GHG emissions. As such, impacts were determined to be less than significant.

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4 REFERENCES

1. **Urban Crossroads, Inc.** *Orchard Logistics Center Traffic Analysis*. 2022.
2. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report. International Panel on Climate Change*. 4, 2007.
3. *The Carbon Cycle and Climate Change*. **Bennington, Bret J.** 1, s.l. : Brooks/Cole. ISBN 1 3: 978-0-495-73855-8.
4. **The National Institute for Occupational Safety and Health**. Carbon Dioxide. *Centers for Disease Control and Prevention*. [Online] <https://www.cdc.gov/niosh/npg/npgd0103.html>.
5. **National Oceanic and Atmospheric Administration**. Greenhouse Gases - Methane. *NOAA National Centers for Environmental Information*. [Online] <https://www.ncdc.noaa.gov/monitoring-references/faq/greenhouse-gases.php?section=methane>.
6. **World Resources Institute**. Climate Analysis Indicator Tool (CAIT). [Online] <http://cait.wri.org>.
7. **National Oceanic and Atmospheric Administration**. Greenhouse Gases - Chlorofluorocarbons. *NOAA National Centers For Environmental Information*. [Online] <https://www.ncdc.noaa.gov/monitoring-references/faq/greenhouse-gases.php?section=chlorofluorocarbons>.
8. **United States Environmental Protection Agency**. Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear. *Environmental Protection Agency*. [Online] May 7, 2014. <https://www.epa.gov/sites/production/files/2016-02/documents/mehl-arb-presentation-2014-wkshp.pdf>.
9. **World Resources Institute**. Nitrogen Trifluoride Now Required in GHG Protocol Greenhouse Gas Emissions Inventory. [Online] May 22, 2013. <https://www.wri.org/blog/2013/05/nitrogen-trifluoride-now-required-ghg-protocol-greenhouse-gas-emissions-inventories>.
10. **National Center for Biotechnology Information**. Nitrogen Trifluoride. *PubChem Compound Database*. [Online] <https://pubchem.ncbi.nlm.nih.gov/compound/24553> .
11. **Intergovernmental Panel on Climate Change**. Climate Change 2013 The Physical Science Basis - Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. *AR5 Climate Change 2013: The Physical Science Basis*. [Online] September 2013. https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf.
12. **United Nations**. GHG Profiles - Annex I. [Online] http://di.unfccc.int/ghg_profile_annex1.
13. —. GHG Profiles - Non-Annex I. [Online] http://di.unfccc.int/ghg_profile_non_annex1.
14. **World Resources Institute**. Climate Analysis Indicator Tool (CAIT). [Online] <http://cait.wri.org>.
15. **Air Resources Board**. 2019 GHG Inventory. *California Greenhouse Gas Emission Inventory 2000-2017 Edition*. [Online] [Cited: September 19, 2019.] <http://www.arb.ca.gov/cc/inventory/data/data.htm>.
16. **Energy Information Administration** . [Online] <https://www.eia.gov/state/data.php?sid=US>.
17. **American Lung Association**. Climate Change. [Online] <http://www.lung.org/our-initiatives/healthy-air/outdoor/climate-change/>.
18. **California Energy Commission**. *Our Changing Climate: Assessing the Risks to California*. 2006.
19. **Center for Climate and Energy Solutions (C2ES)**. Outcomes of the U.N. Climate Change Conference. *Center for Climate and Energy Solutions (C2ES)*. [Online] 2015. <http://www.c2es.org/international/negotiations/cop21-paris/summary>.

20. **Agency, United States Environmental Protection.** Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Section 202(a) of the Clean Air Act. *United States Environmental Protection Agency*. [Online] <https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean>.
21. **National Highway Traffic Safety Administration.** SAFE: The Safer Affordable Fuel-Efficient 'SAFE' Vehicle Rule. *National Highway Traffic Safety Administration*. [Online] <https://www.nhtsa.gov/corporate-average-fuel-economy/safe>.
22. **United States Environmental Protection Agency.** SmartWay. [Online] <https://www.epa.gov/smartway/learn-about-smartway>.
23. **California Air Resources Board.** GHG 1990 Emissions Level & 2020 Limit. *California Air Resources Board*. [Online] <https://ww2.arb.ca.gov/ghg-2020-limit>.
24. —. *Climate Change Scoping Plan*. 2008.
25. —. STATUS OF SCOPING PLAN RECOMMENDED MEASURES. [Online] [Cited: September 19, 2019.] https://ww3.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf.
26. —. *First Update to the Climate Change Scoping Plan*. 2014.
27. —. *2017 Scoping Plan, Appendix B Local Action*. 2017.
28. —. Latest GHG Inventory shows California remains below 2020 emissions target. [Online] 2020. <https://ww2.arb.ca.gov/news/latest-ghg-inventory-shows-california-remains-below-2020-emissions-target>.
29. **Lawrence Berkeley National Laboratory.** California's Policies Can Significantly Cut Greenhouse Gas Emissions through 2030. *Lawrence Berkeley National Laboratory*. [Online] January 22, 2015. <http://newscenter.lbl.gov/2015/01/22/californias-policies-can-significantly-cut-greenhouse-gas-emissions-2030/>.
30. **Ernest Orlando Lawrence Berkeley National Laboratory.** Modeling California policy impacts on greenhouse gas emissions. [Online] 2015. <https://eaei.lbl.gov/sites/all/files/lbni-7008e.pdf>.
31. **California Air Resources Board.** *California Greenhouse Gas Emissions for 2000 to 2019 - Trends of Emissions and Other Indicators*. 2021.
32. **California Legislative Information.** Senate Bill No. 32. [Online] September 8, 2016. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32.
33. **California Air Resources Board (CARB).** Cap and Trade Overview. *California Air Resources Board*. [Online] [Cited: May 10, 2016.] http://www.arb.ca.gov/cc/capandtrade/guidance/cap_trade_overview.pdf.
34. **California Energy Commission.** Energy Commission Adopts Updated Building Standards to Improve Efficiency, Reduce Emissions from Homes and Businesses. [Online] August 11, 2021. <https://www.energy.ca.gov/news/2021-08/energy-commission-adopts-updated-building-standards-improve-efficiency-reduce-0>.
35. **California Department of General Services.** 2022 CALGreen Code. *CALGreen*. [Online] <https://codes.iccsafe.org/content/CAGBC2022P1>.
36. **California Air Resources Board.** Greenhouse Gas Standards for Medium- and Heavy-Duty Engines and Vehicles. [Online] <https://ww2.arb.ca.gov/node/1594/about>.
37. **California Air Pollution Control Officers Association (CAPCOA).** California Emissions Estimator Model (CalEEMod). [Online] May 2022. www.caleemod.com.

38. **California Natural Resources Agency.** Final Statement of Reasons for Regulatory Action, Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97. [Online] December 2009.
39. **Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. South Coast Air Quality Management District.** 2008.
40. **Urban Crossroads, Inc.** *Orchard Logistics Center Air Quality Impact Analysis Report.* 2022.
41. **State of California.** *2019 CEQA California Environmental Quality Act.* 2019.
42. **Environmental Protection Agency.** National Ambient Air Quality Standards (NAAQS). [Online] 1990. <https://www.epa.gov/environmental-topics/air-topics>.
43. **South Coast Air Quality Management District.** *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans.* Diamond Bar : s.n., 2008.
44. **Association of Environmental Professionals.** *2018 CEQA California Environmental Quality Act.* 2018.
45. **City of Beaumont.** *Sustainable Beaumont: The City's Roadmap to Greenhouse Gas Reductions.* Beaumont : s.n., 2015.

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5 CERTIFICATIONS

The contents of this GHG study report represent an accurate depiction of the GHG impacts associated with the proposed Orchard Logistics Center Project. The information contained in this GHG 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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AEP – Association of Environmental Planners
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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 CONSTRUCTION EMISSIONS MODEL OUTPUTS

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APPENDIX 3.2:

CALEEMOD 2027 PROJECT SCENARIO GHG EMISSIONS OUTPUT

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