IV. Environmental Impact Analysis

D. Greenhouse Gas Emissions

1. Introduction

This section compares the Project's characteristics with applicable regulations, plans, and policies set forth by the State of California, the Southern California Association of Governments (SCAG) and the City to reduce greenhouse gas (GHG) emissions to determine whether the Project is consistent with and/or would conflict with the provisions of these plans. To assist in analyzing the Project's potential to conflict with applicable regulations, plans and policies, this section also estimates the Project's GHG emissions generated by Project construction and operations, taking into account mandatory and voluntary energy and resource conservation measures that have been incorporated into the Project to reduce GHG emissions. GHG calculation sheets are provided in **Appendix E** to this Draft EIR.

2. Environmental Setting

Global climate change refers to changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation, and severe weather events. Global warming, a related concept, is the observed increase in average temperature of Earth's surface and atmosphere. One identified cause of global warming is an increase of GHGs in the atmosphere. GHGs are those compounds in Earth's atmosphere that play a critical role in determining Earth's surface temperature.

Earth's natural warming process is known as the "greenhouse effect." It is called the greenhouse effect because Earth and the atmosphere surrounding it are similar to a greenhouse with glass panes in that the glass allows solar radiation (sunlight) into Earth's atmosphere but prevents radiative heat from escaping, thus warming Earth's atmosphere. Some levels of GHGs keep the average surface temperature of Earth close to a hospitable 60 degrees Fahrenheit (ºF). However, as GHG from human activities increase, they build up in the atmosphere and warm the climate, leading to many other changes around the world - in the atmosphere, on land, and in the oceans, with associated adverse climatic and ecological consequences.[1]

Scientists studying the particularly rapid rise in global temperatures have determined that human activity has resulted in increased emissions of GHGs, primarily from the burning of fossil fuels (from motor vehicle travel, electricity generation, consumption of natural gas, industrial activity, manufacturing, etc.), deforestation, agricultural activity, and the decomposition of solid waste.

[1] USEPA, Climate Change Indicators: Greenhouse Gases, https://www.epa.gov/climate-indicators/greenhouse-gases, accessed August 23, 2022.

Scientists refer to the global warming context of the past century as the "enhanced greenhouse effect" to distinguish it from the natural greenhouse effect.[2]

Global GHG emissions due to human activities have grown since pre-industrial times. As reported by the United States Environmental Protection Agency (USEPA), global carbon emissions from fossil fuels increased by over 16 times between 1900 and 2008 and by about 43 percent between 1990 and 2015. In addition, in the Global Carbon Budget 2019 report, published in December 2019, atmospheric carbon dioxide (CO_2) concentrations in 2018 were found to be 47 percent above the concentration at the start of the Industrial Revolution, and the present concentration is the highest during at least the last 800,000 years.[3] Global increases in CO_2 concentrations are due primarily to fossil fuel use, with land use change providing another significant but smaller contribution. Regarding emissions of non-CO_2 GHGs, these have also increased significantly since 1990.[4] In particular, studies have concluded that it is very likely that the observed increase in methane (CH_4) concentration is predominantly due to agriculture and fossil fuel use.[5]

In August 2007, international climate talks held under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC) led to the official recognition by the participating nations that global emissions of GHG must be reduced. According to the "Ad Hoc Working Group on Further Commitments of Annex I Parties under the Kyoto Protocol," avoiding the most catastrophic events forecast by the United Nations Intergovernmental Panel on Climate Change (IPCC) would entail emissions reductions by industrialized countries in the range of 25 to 40 percent below 1990 levels. Because of the Kyoto Protocol's Clean Development Mechanism, which gives industrialized countries credit for financing emission-reducing projects in developing countries, such an emissions goal in industrialized countries could ultimately spur efforts to cut emissions in developing countries as well.[6]

In December 2015, the U.S. entered into the Paris Agreement, which has a goal of keeping a global temperature rise this century below 2 degrees Celsius (ºC) above pre-industrial levels and limit the temperature increase further to 1.5ºC. This agreement requires that all parties report regularly on emissions and implementation efforts to achieve these goals.

Regarding the adverse effects of global warming, as reported by SCAG:

> *Global warming poses a serious threat to the economic well-being, public health and natural environment in Southern California and beyond. The potential adverse impacts of*

2 Pew Center on Global Climate Change, Climate Change 101: Understanding and Responding to Global Climate Change.

3 P. Friedlingstein et al.: Global Carbon Budget 2019, 2019.

4 USEPA, Global Greenhouse Gas Emissions Data, https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data, accessed August 23, 2022.

5 USEPA. Climate Change Indicators: Atmospheric Concentrations of Greenhouse Gas. Available at: https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases, accessed on August 23, 2022.

6 United Nations Framework Convention on Climate Change, Press Release—Vienna UN Conference Shows Consensus on Key Building Blocks for Effective International Response to Climate Change, August 31, 2007.

global warming include, among others, a reduction in the quantity and quality of water supply, a rise in sea level, damage to marine and other ecosystems, and an increase in the incidences of infectious diseases. Over the past few decades, energy intensity of the national and state economy has been declining due to the shift to a more service-oriented economy. California ranked fifth lowest among the states in CO_2 emissions from fossil fuel consumption per unit of Gross State Product. However, in terms of total CO_2 emissions, California is second only to Texas in the nation and is the 12th largest source of climate change emissions in the world, exceeding most nations. The SCAG region, with close to half of the state's population and economic activities, is also a major contributor to the global warming problem.[7]

a) GHG Fundamentals

GHGs are those compounds in Earth's atmosphere that play a critical role in determining temperature near Earth's surface. GHGs include carbon dioxide ($CO_{2)}$, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).[8] More specifically, these gases allow high-frequency shortwave solar radiation to enter Earth's atmosphere but retain some of the low frequency infrared energy, which is radiated back from Earth towards space, resulting in a warming of the atmosphere. Compounds that are regulated as GHGs are discussed in **Table IV.D-1, Description of Identified Greenhouse Gases,** below.[9, 10]

Table IV.D-1
Description of Identified Greenhouse Gases [a]

GHG	General Description
Carbon Dioxide (CO_2)	An odorless, colorless GHG, which has both natural and anthropocentric sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human-caused) sources of CO_2 are burning coal, oil, natural gas, and wood.
Methane (CH_4)	A flammable gas and the main component of natural gas. When one molecule of CH_4 is burned in the presence of oxygen, one molecule of CO_2 and two molecules of water are released. A natural source of CH_4 is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain CH_4, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and cattle.
Nitrous Oxide (N_2O)	A colorless GHG. High concentrations can cause dizziness, euphoria, and sometimes slight hallucinations. N_2O 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 in rocket engines, race cars, and as an aerosol spray propellant.

7 SCAG, The State of the Region—Measuring Regional Progress, December 2006, p. 121.
8 As defined by California Assembly Bill (AB) 32 and Senate Bill (SB) 104.
9 Intergovernmental Panel on Climate Change, Second Assessment Report, Working Group I: The Science of Climate Change, 1995.
10 Intergovernmental Panel on Climate Change, Fourth Assessment Report, Working Group I Report: The Physical Science Basis, Table 2.14, 2007.

Table IV.D-1
Description of Identified Greenhouse Gases [a]

GHG	General Description
Hydrofluorocarbons (HFCs)	Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in CH_4 or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are non-toxic, non-flammable, insoluble, and chemically unreactive in the troposphere (the level of air at Earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. Because they destroy stratospheric ozone, the production of CFCs was stopped as required by the Montreal Protocol in 1987. HFCs are synthetic man-made chemicals that are used as a substitute for CFCs as refrigerants. HFCs deplete stratospheric ozone but to a much lesser extent than CFCs.
Perfluorocarbons (PFCs)	PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane and hexafluoroethane. The two main sources of PFCs are primary aluminum production and semi-conductor manufacturing.
Sulfur Hexafluoride (SF_6)	An inorganic, odorless, colorless, non-toxic, and non-flammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.
Nitrogen Trifluoride (NF_3)	An inorganic, non-toxic, odorless, non-flammable gas. NF_3 is used in the manufacture of semi-conductors, as an oxidizer of high energy fuels, for the preparation of tetrafluorohydrazine, as an etchant gas in the electronic industry, and as a fluorine source in high power chemical lasers.

[a] *GHGs identified in this table are ones identified in the Kyoto Protocol and other synthetic gases recently added to the IPCC's Fifth Assessment Report.*

Source: Association of Environmental Professionals, Alternative Approaches to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents, Final, June 29, 2007; Environmental Protection Agency, Acute Exposure Guideline Levels (AEGLs) for Nitrogen Trifluoride, January 2009.

Not all GHGs possess the same ability to induce climate change. CO_2 is the most abundant GHG in Earth's atmosphere. Other GHGs are less abundant but have higher global warming potential (GWP) than CO_2. Thus, emissions of other GHGs are commonly quantified in the units of equivalent mass of carbon dioxide (CO_2e). GWP is based on several factors, including the radiative efficiency (heat-absorbing ability) of each gas relative to that of CO_2, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years otherwise referred to as atmospheric lifetime) relative to that of CO_2.

The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that time.[11] These GWP ratios are available from the Intergovernmental Panel on Climate Change (IPCC). Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (SAR). The IPCC updated the GWP values in its Fourth Assessment

[11] GWPs and associated CO_2e values were developed by the Intergovernmental Panel on Climate Change (IPCC), and published in its Second Assessment Report (SAR) in 1996. Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's SAR. The IPCC updated the GWP values based on the latest science in its Fourth Assessment Report (AR4). CARB has begun reporting GHG emission inventories for California using the GWP values from the IPCC AR4.

Report (AR4). The GWPs in the IPCC AR4 are used by the California Air Resources Board (CARB) for reporting Statewide GHG emissions inventories, consistent with international reporting standards. By applying the GWP ratios, Project-related CO_2e emissions can be tabulated in metric tons per year. Typically, the GWP ratio corresponding to the warming potential of CO_2 over a 100-year period is used as a baseline.

The IPCC has issued an updated Fifth Assessment Report (AR5), which has revised down the majority of the GWP for key regulated pollutants. As CARB still uses AR4 values and the modeling software CalEEmod is built on these assumptions, AR4 GWP values are used for the impact analysis of the Project. Generally, the changes from AR4 to AR5 are reductions in warming potential for the GHG most associated with construction and operation of typical development projects. The GWP from AR4 and AR5 and atmospheric lifetimes for key regulated GHGs are provided in **Table IV.D-2, Atmospheric Lifetimes and Global Warming Potentials**.

Table IV.D-2
Atmospheric Lifetimes and Global Warming Potentials

GHG	Lifetime (Years)	Global Warming Potential (20-Year)	Global Warming Potential (100-Year)
Carbon Dioxide (CO_2)	50-200	1	1
Methane (CH_4)	12 (+/-3)	25	28
Nitrous Oxide (N_2O)	114	298	265
HFC-23: Fluoroform (CHF_3)	270	14,800	12,400
HFC-134a: 1,1,1,2-Tetrafluoroethane (CH_2FCF_3)	14	1,430	1,300
HFC-152a: 1,1-Difluoroethane ($C_2H_4F_2$)	1.4	124	138
PFC-14: Tetrafluoromethane (CF_4)	50,000	7,390	6,630
PFC-116: Hexafluoroethane (C_2F_6)	10,000	12,200	11,100
Sulfur Hexafluoride (SF_6)	3,200	23,800	23,500
Nitrogen Trifluoride (NF_3[a])	740	17,200	16,100
Source: IPCC, Climate Change 2007: Working Group I: The Physical Science Basis, Direct Global Warming Potentials.			

b) Projected Impacts of Global Warming in California

In 2009, California adopted a Statewide Climate Adaptation Strategy (CAS) that summarizes climate change impacts and recommends adaptation strategies across seven sectors: Public Health, Biodiversity and Habitat, Oceans and Coastal Resources, Water, Agriculture, Forestry, and Transportation and Energy. The California Natural Resources Agency will be updating the CAS and is responsible for preparing reports to the Governor on the status of the CAS. The Natural Resources Agency has produced climate change assessments, which detail impacts of global warming in California.[12] These include:

[12] State of California, Department of Justice, Office of the Attorney General, Climate Change Impacts in California, https://oag.ca.gov/environment/impact, accessed August 23, 2022.

- Sea level rise, coastal flooding and erosion of California's coastlines would increase, as well as sea water intrusion.
- The Sierra snowpack would decline between 70 and 90 percent, threatening California's water supply.
- Higher risk of forest fires resulting from increasing temperatures and making forests and brush drier. Climate change will affect tree survival and growth.
- Attainment of air quality standards would be impeded by increasing emissions, accelerating chemical processes, and raising inversion temperatures during stagnation episodes resulting in public health impacts.
- Habitat destruction and loss of ecosystems due to climate change affecting plant and wildlife habitats.
- Global warming can cause drought, warmer temperatures, and saltwater contamination resulting in impacts to California's agricultural industry.

With regard to public health, as reported by the Center for Health and the Global Environment at the Harvard Medical School, the following are examples of how climate change can affect cardio-respiratory disease: (1) pollen is increased by higher levels of atmospheric CO_2; (2) heat waves can result in temperature inversions, leading to trapped masses or unhealthy air contaminants by smog, particulates, and other pollutants; and (3) the incidence of forest fires is increased by drought, secondary to climate change and to the lack of spring runoff from reduced winter snows. These fires can create smoke and haze, which can settle over urban populations causing acute and exacerbating chronic respiratory illness.[13]

c) Regulatory Framework

There are a number of plans, regulations, programs, and agencies that provide policies, requirements, and guidelines regarding GHG emissions at the federal, State, regional, and local levels. As described below, these plans, guidelines, and laws include the following:

- Federal Clean Air Act
- Corporate Average Fuel Economy (CAFE) Standards
- Energy Independence and Security Act
- California Air Resources Board
- California Greenhouse Gas Reduction Targets
- California Global Warming Solutions Act (AB 32)
- Climate Change Scoping Plan
- Cap-and-Trade Program
- Emission Performance Standards

[13] Paul R. Epstein, et al., Urban Indicators of Climate Change, Report from the Center for Health and the Global Environment, (Harvard Medical School and the Boston Public Health Commission, August 2003), unpaginated.

- Renewables Portfolio Standard Program
- Clean Energy and Pollution Reduction Act
- Pavley Standards
- California Low Carbon Fuel Standard
- Advanced Clean Cars Regulations
- Sustainable Communities and Climate Protection Act (SB 375)
- Senate Bill 743
- Executive Order N-79-20
- Executive Order B-55-18
- California Appliance Efficiency Regulations
- Title 24, Building Standards Code and CALGreen Code
- CEQA Guidelines
- South Coast Air Quality Management District
- Southern California Association of Governments Regional Transportation Plan/Sustainable Communities Strategy
- Green New Deal
- City of Los Angeles Green Building Code
- City of Los Angeles All-Electric Buildings Ordinance
- City of Los Angeles Solid Waste Programs and Ordinances
- City of Los Angeles General Plan
- City of Los Angeles Housing Element (Housing Needs Assessment)
- City of Los Angeles Mobility Plan 2035
- Traffic Study Policies and Procedures

(1) Federal

(a) Federal Clean Air Act

The USEPA is responsible for implementing federal policy to address GHGs. The United States Supreme Court (Supreme Court) ruled in *Massachusetts v. Environmental Protection Agency*, 127 S.Ct. 1438 (2007), that CO_2 and other GHGs are pollutants under the federal Clean Air Act (CAA), which the USEPA must regulate if it determines they pose an endangerment to public health or welfare. In December 2009, USEPA issued an endangerment finding for GHGs under the CAA, setting the stage for future regulation.

The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, CH_4 and other non-CO_2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

(b) Corporate Average Fuel Economy (CAFE) Standards

In response to the *Massachusetts v. Environmental Protection Agency* ruling, President George W. Bush issued Executive Order 13432 in 2007, directing the USEPA, the United States Department of Transportation (USDOT), and the United States Department of Energy (USDOE) to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. The National Highway Traffic Safety Administration (NHTSA) subsequently issued multiple final rules regulating fuel efficiency for and GHG emissions from cars and light-duty trucks for model year 2011 and later for model years 2012-2016, and 2017-2021. In March 2020, the USDOT and the USEPA issued the final Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, which amends existing CAFE standards and tailpipe CO_2 emissions standards for passenger cars and light trucks and establishes new standards covering model years 2021 through 2026.[14] These standards set a combined fleet wide average of 36.9 to 37 for the model years affected.[15] In February 2022, the USEPA issued the Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards.[16] This final rule revises current GHG standards for vehicles in model year 2023 through model year 2026 and establishes the most stringent GHG standards ever set for the light-duty vehicle sector that are expected to result in average fuel economy label values of 40 miles per gallon (mpg), while the standards they replace (i.e., the SAFE rule standards) would achieve only 32 mpg in model year 2026 vehicles.[17]

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011 the USEPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the USEPA, this regulatory program would reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines. Building on the first phase of standards, in August 2016, the USEPA and NHTSA finalized Phase 2 standards for medium and heavy-duty vehicles through model year 2027 that will improve fuel efficiency and cut carbon pollution. The Phase 2 standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons.[18]

[14] United States Environmental Protection Agency, Final Rule for Model Year 2021 - 2026 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, published April 30, 2020.

[15] National Highway Traffic Safety Administration (NHTSA), Corporate Average Fuel Economy Standards.

[16] U.S. Environmental Protection Agency, Federal Register/Vol. 86, No. 248/Thursday, December 30, 2021/Rules and Regulations, Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards.

[17] USEPA, Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards: Regulatory Update, December 2021.

[18] United States Environmental Protection Agency, Regulatory Announcement: EPA and NHTSA Adopt Standards to Reduce GHG and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles for Model Year 2018 and Beyond, August 2016.

(c) Energy Independence and Security Act

The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."[19]

(2) State

(a) California Air Resources Board

CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts. The SIP is required for the State to take over implementation of the federal CAA. CARB also has primary responsibility for adopting regulations to meet the State's goal of reducing GHG emissions. The State has met its goals to reduce GHG emissions to 1990 levels by 2020.

[19] A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.

Subsequent State goals include reducing GHG emissions to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050.

(b) California Greenhouse Gas Reduction Targets

Executive Order S-3-05

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

- By 2010, California shall reduce GHG emissions to 2000 levels;
- By 2020, California shall reduce GHG emissions to 1990 levels; and
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels.

In accordance with Executive Order S-3-05, the Secretary of CalEPA is required to coordinate efforts of various agencies, which comprise the California Climate Action Team (CAT), in order to collectively and efficiently reduce GHGs. The CAT provides periodic reports to the Governor and Legislature on the state of GHG reductions in the State, as well as strategies for mitigating and adapting to climate change.

The CAT stated that smart land use is an umbrella term for strategies that integrate transportation and land-use decisions. Such strategies generally encourage jobs/housing proximity, promote transit-oriented development (TOD), and encourage high-density residential/commercial development along transit corridors. These strategies develop more efficient land-use patterns within each jurisdiction or region to match population increases, workforce, and socioeconomic needs for the full spectrum of the population.

Executive Order B-30-15

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the Governor directed the following:

- Established a new interim Statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.
- Ordered all State agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of CO_2e ($MMTCO_2e$).

Executive Order B-55-18

Executive Order B-55-18, issued by Governor Brown in September 2018, establishes a new Statewide goal to achieve carbon neutrality as soon as possible, but no later than 2045, and achieve and maintain net negative emissions thereafter. Based on this executive order, CARB

would work with relevant State agencies to develop a framework for implementation and accounting that tracks progress towards this goal as well as ensuring future scoping plans identify and recommend measures to achieve the carbon neutrality goal.

In October 2020, CARB released a study, which evaluated three scenarios that achieve carbon neutrality in California by 2045. The study was used by CARB in development of the 2022 Scoping Plan.[20] More ambitious carbon reduction scenarios that achieve carbon neutrality prior to 2045 may be considered as part of future analyses by the State.

The scenarios analyzed to achieve carbon neutrality include a High Carbon Dioxide Removal (CDR) scenario, Zero Carbon Energy scenario, and a Balanced scenario. The High CDR scenario achieves GHG reductions by relying on CO_2 removal strategies. The Zero Carbon Energy scenario is based on the assumption of zero-fossil fuel emissions by 2045. The Balanced scenario represents a middle point between the High CDR scenario and Zero Carbon Energy scenario. The scenarios would achieve at least an 80-percent reduction in GHGs by 2045, relative to 1990 levels. Remaining CO_2 would be reduced to zero by applying CO_2 removal strategies, including sinks from natural and working lands and negative emissions technologies, such as direct air capture.[21,22]

Under each of these scenarios, CARB proposed reduction strategies for various sectors that contribute GHG emissions throughout the State. Although specific details are not yet available for the GHG reduction measures discussed above, implementation of these measures would require regulations to be enforced by the State.

(c) California Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted Assembly Bill (AB) 32 (codified in the California Health and Safety Code (HSC), Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines regulated GHGs as CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 and represents the first enforceable Statewide program to limit emissions of these GHGs from all major industries, with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing State actions that would achieve GHG emissions reductions.

To achieve these goals, AB 32 mandates that CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce Statewide GHG emissions

[20] Energy+Environmental Economics (E3), Achieving Carbon Neutrality in California, PATHWAYS Scenarios Developed for the California Air Resources Board, October 2020.

[21] Sinks are defined as natural or artificial reservoirs that accumulate and store a carbon-containing chemical compound for an indefinite period.

[22] Energy+Environmental Economics (E3), Achieving Carbon Neutrality in California, PATHWAYS Scenarios Developed for the California Air Resources Board, October 2020, p. 22.

from stationary sources consistent with the CAT strategies, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. In order to achieve the reduction targets, AB 32 requires CARB to adopt rules and regulations in an open public process that achieve the maximum technologically feasible and cost-effective GHG reductions.[23]

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197, and both were signed by Governor Brown. SB 32 and AB 197 amend HSC Division 25.5, establish a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and include provisions to ensure that the benefits of State climate policies reach disadvantaged communities. The new goals outlined in SB 32 update the scoping plan requirement of AB 32 and involve increasing renewable energy use, imposing tighter limits on the carbon content of gasoline and diesel fuel, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries.

AB 197, signed September 8, 2016, is a bill associated with SB 32, which prioritizes efforts to cut GHG emissions in low-income or minority communities. AB 197 requires CARB to make available, and update at least annually, on its website the emissions of GHGs, criteria pollutants, and toxic air contaminants for each facility that reports to CARB and air districts. In addition, AB 197 adds two members of the Legislature to the CARB board as ex officio, non-voting members and creates the Joint Legislative Committee on Climate Change Policies to ascertain facts and make recommendations to the Legislature and the houses of the Legislature concerning the State's programs, policies, and investments related to climate change.

(d) Climate Change Scoping Plan

The Scoping Plan is a GHG reduction roadmap developed and updated by CARB at least once every five years, as required by AB 32. It lays out the transformations needed across various sectors to reduce GHG emissions and reach the State's climate targets. CARB adopted the Final 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) in December 2022, as the third update to the initial plan that was adopted in 2008. The initial 2008 Scoping Plan laid out a path to achieve the AB 32 target of returning to 1990 levels of GHG emissions by 2020, a reduction of approximately 15 percent below business as usual activities.[24] The 2008 Scoping Plan included a mix of incentives, regulations, and carbon pricing, laying out the portfolio approach to addressing climate change and clearly making the case for using multiple tools to meet California's GHG targets. The 2013 Scoping Plan Update (adopted in 2014) assessed progress toward achieving the 2020 target and made the case for addressing short-lived climate

[23] CARB's list of discrete early action measures that could be adopted and implemented before January 1, 2010, was approved on June 21, 2007. The three adopted discrete early action measures are: (1) a low-carbon fuel standard, which reduces carbon intensity in fuels Statewide; (2) reduction of refrigerant losses from motor vehicle air conditioning system maintenance; and (3) increased methane capture from landfills, which includes requiring the use of state-of-the-art capture technologies.

[24] CARB. 2008. Climate Change Scoping Plan. ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/document/adopted_scoping_plan.pdf.

pollutants (SLCPs).[25] The 2017 Scoping Plan Update shifted the focus to the newer SB 32 goal of a 40-percent reduction below 1990 levels by 2030 by laying out a detailed cost-effective and technologically feasible path to this target and also assessed progress toward achieving the AB 32 goal of returning to 1990 GHG levels by 2020.[26] The 2020 goal was ultimately reached in 2016, four years ahead of the schedule called for under AB 32.

The 2022 Scoping Plan is the most comprehensive and far-reaching Scoping Plan developed to date. It identifies a technologically feasible, cost-effective, and equity-focused path to achieve new targets for carbon neutrality by 2045 and to reduce anthropogenic GHG emissions to at least 85 percent below 1990 levels, while also assessing the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan.[27] Existing emissions levels and future targets for emissions reductions, as included in the 2022 Scoping Plan, are shown in **Table IV.D-3, Estimated Statewide Greenhouse Gas Emissions Reductions in the 2022 Scoping Plan**. The 2030 target is an interim but important stepping stone along the critical path to the broader goal of deep decarbonization by 2045. The relatively longer path assessed in the 2022 Scoping Plan incorporates, coordinates, and leverages many existing and ongoing efforts to reduce GHGs and air pollution, while identifying new clean technologies and energy. Given the focus on carbon neutrality, the 2022 Scoping Plan also includes discussion for the first time of the natural and working lands sectors as sources for both sequestration and carbon storage and as sources of emissions as a result of wildfires.

The 2022 Scoping Plan reflects existing and recent direction in the Governor's Executive Orders and State Statutes, which identify policies, strategies, and regulations in support of and implementation of the Scoping Plan. Among these include Executive Order B-55-18 and AB 1279 (California Climate Crisis Act), which identify the 2045 carbon neutrality and GHG reduction targets required for the Scoping Plan.

[25] CARB. 2014. First Update to the Climate Change Scoping Plan. ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

[26] CARB. 2017. California's 2017 Climate Change Scoping Plan. ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf.

[27] CARB, California's 2017 Climate Change Scoping Plan, 2017, ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf.

Table IV.D-3
Estimated Statewide Greenhouse Gas Emissions Reductions in the 2022 Scoping Plan

Emissions Scenario	GHG Emissions ($MMTCO_2e$)
2019	
2019 State GHG Emissions	404
2030	
2030 BAU Forecast	312
2030 GHG Emissions without Carbon Removal and Capture	233
2030 GHG Emissions with Carbon Removal and Capture	226
2030 Emissions Target Set by AB 32 (i.e., 1990 level by 2030)	260
Reduction below Business-As-Usual necessary to achieve 1990 levels by 2030	52 (16.7%)[a]
2045	
2045 BAU Forecast	266
2045 GHG Emissions without Carbon Removal and Capture	72
2045 GHG Emissions with Carbon Removal and Capture	(3)

$MMTCO_2e$ = million metric tons of carbon dioxide equivalents; parenthetical numbers represent negative values.
[a] 312 – 260 = 52. 52 ÷ 312 = 16.7%
Source: CARB, Final 2022 Climate Change Scoping Plan, November 2022.

Table IV.D-4, Major Climate Legislation and Executive Orders Enacted Since the 2017 Scoping Plan, below provides a summary of major climate legislation and executive orders issued since the adoption of the 2017 Scoping Plan.

Table IV.D-4
Major Climate Legislation and Executive Orders Enacted Since the 2017 Scoping Plan

Bill/Executive Order	Summary
Assembly Bill 1279 (AB 1279) (Muratsuchi, Chapter 337, Statutes of 2022) *The California Climate Crisis Act*	AB 1279 establishes the policy of the State to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 Statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires CARB to ensure that the Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO_2 removal solutions and carbon capture, utilization, and storage (CCUS) technologies. This bill is reflected directly in the 2022 Scoping Plan.
Senate Bill 905 (SB 905) (Caballero, Chapter 359, Statutes of 2022) *Carbon Capture, Removal, Utilization, and Storage Program*	SB 905 requires CARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate CCUS and carbon dioxide removal (CDR) projects and technology. The bill requires CARB, on or before January 1, 2025, to adopt regulations creating a unified state permitting application for approval of CCUS and CDR projects. The bill also requires the Secretary of the Natural Resources Agency to publish a framework for governing agreements for two or more tracts of land overlying the same geologic storage reservoir for the purposes of a carbon sequestration project. The 2022 Scoping Plan modeling reflects both CCUS and CDR contributions to achieve carbon neutrality.

Table IV.D-4
Major Climate Legislation and Executive Orders Enacted Since the 2017 Scoping Plan

Bill/Executive Order	Summary
Senate Bill 846 (SB 846) (Dodd, Chapter 239, Statutes of 2022) *Diablo Canyon Powerplant: Extension of Operations*	SB 846 extends the Diablo Canyon Power Plant's sunset date by up to five additional years for each of its two units and seeks to make the nuclear power plant eligible for federal loans. The bill requires that the California Public Utilities Commission (CPUC) not include and disallow a load-serving entity from including in their adopted resource plan, the energy, capacity, or any attribute from the Diablo Canyon power plant. The 2022 Scoping Plan explains the emissions impact of this legislation.
Senate Bill 1020 (SB 1020) (Laird, Chapter 361, Statutes of 2022) *Clean Energy, Jobs, and Affordability Act of 2022*	SB 1020 adds interim renewable energy and zero carbon energy retail sales of electricity targets to California end-use customers set at 90 percent in 2035 and 95 percent in 2040. It accelerates the timeline required to have 100-percent renewable energy and zero carbon energy procured to serve State agencies from the original target year of 2045 to 2035. This bill requires each State agency to individually achieve the 100-percent goal by 2035 with specified requirements. This bill requires the CPUC, California Energy Commission (CEC), and CARB, on or before December 1, 2023, and annually thereafter, to issue a joint reliability progress report that reviews system and local reliability. The bill also modifies the requirement for CARB to hold a portion of its Scoping Plan workshops in regions of the State with the most significant exposure to air pollutants by further specifying that this includes communities with minority populations or low-income communities in areas designated as being in extreme federal non-attainment. The 2022 Scoping Plan describes the implications of this legislation on emissions.
Senate Bill 1137 (SB 1137) (Gonzales, Chapter 365, Statutes of 2022) *Oil & Gas Operations: Location Restrictions: Notice of Intention: Health protection zone: Sensitive receptors*	SB 1137 prohibits the development of new oil and gas wells or infrastructure in health protection zones, as defined, except for purposes of public health and safety or other limited exceptions. The bill requires operators of existing oil and gas wells or infrastructure within health protection zones to undertake specified monitoring, public notice, and nuisance requirements. The bill requires CARB to consult and concur with the California Geologic Energy Management Division (CalGEM) on leak detection and repair plans for these facilities, adopt regulations as necessary to implement emission detection system standards, and collaborate with CalGEM on public access to emissions detection data.

Table IV.D-4
Major Climate Legislation and Executive Orders Enacted Since the 2017 Scoping Plan

Bill/Executive Order	Summary
Senate Bill 1075 (SB 1075) (Skinner, Chapter 363, Statutes of 2022) *Hydrogen: Green Hydrogen: Emissions of Greenhouse Gases*	SB 1075 requires CARB, by June 1, 2024, to prepare an evaluation that includes policy recommendations regarding the use of hydrogen, and specifically the use of green hydrogen, in California; a description of strategies supporting hydrogen infrastructure, including identifying policies that promote the reduction of GHGs and short-lived climate pollutants; a description of other forms of hydrogen to achieve emission reductions; an analysis of curtailed electricity; an estimate of GHG and emission reductions that could be achieved through deployment of green hydrogen through a variety of scenarios; an analysis of the potential for opportunities to integrate hydrogen production and applications with drinking water supply treatment needs; policy recommendations for regulatory and permitting processes associated with transmitting and distributing hydrogen from production sites to end uses; an analysis of the life-cycle GHG emissions from various forms of hydrogen production; and an analysis of air pollution and other environmental impacts from hydrogen distribution and end uses. This bill would inform the production of hydrogen at the scale called for in the 2022 Scoping Plan.
Assembly Bill 1757 (AB 1757) (Garcia, Chapter 341, Statutes of 2022) *California Global Warming Solutions Act of 2006: Climate Goal: Natural and Working Lands*	AB 1757 requires the California Natural Resources Agency (CNRA), in collaboration with CARB, other State agencies, and an expert advisory committee, to determine a range of targets for natural carbon sequestration, and for nature-based climate solutions, that reduce GHG emissions in 2030, 2038, and 2045 by January 1, 2024. These targets must support State goals to achieve carbon neutrality and foster climate adaptation and resilience. This bill also requires CARB to develop standard methods for State agencies to consistently track GHG emissions and reductions, carbon sequestration, and additional benefits from natural and working lands over time. These methods will account for GHG emissions reductions of CO_2, methane, and nitrous oxide related to natural and working lands and the potential impacts of climate change on the ability to reduce GHG emissions and sequester carbon from natural and working lands, where feasible. This 2022 Scoping Plan describes the next steps and implications of this legislation for the natural and working lands sector.
Senate Bill 1206 (SB 1206) (Skinner, Chapter 884, Statutes of 2022) *Hydrofluorocarbon gases: sale or distribution*	SB 1206 mandates a stepped sales prohibition on newly produced high-GWP HFCs to transition California's economy toward recycled and reclaimed HFCs for servicing existing HFC-based equipment. Additionally, SB 1206 also requires CARB to develop regulations to increase the adoption of very low-technologies (i.e., GWP<10 and no-GWP) in sectors that currently rely on higher-GWP HFCs.
Senate Bill 27 (SB 27) (Skinner, Chapter 237, Statutes of 2021) *Carbon Sequestration: State Goals: Natural and Working Lands: Registry of Projects*	SB 27 requires CNRA, in coordination with other State agencies, to establish the Natural and Working Lands Climate Smart Strategy by July 1, 2023. This bill also requires CARB to establish specified CO_2 removal targets for 2030 and beyond as part of its Scoping Plan. Under SB 27, CNRA is tasked to establish and maintain a registry to identify projects in the State that drive climate action on natural and working lands and are seeking funding. CNRA also must track carbon removal and GHG emission reduction benefits derived from projects funded through the registry. This bill is reflected directly in the 2022 Scoping Plan as CO_2 removal targets for 2030 and 2045 in support of carbon neutrality.

Table IV.D-4
Major Climate Legislation and Executive Orders Enacted Since the 2017 Scoping Plan

Bill/Executive Order	Summary
Senate Bill 596 (SB 596) (Becker, Chapter 246, Statutes of 2021) *Greenhouse Gases: Cement Sector: Net- zero Emissions Strategy*	SB 596 requires CARB, by July 1, 2023, to develop a comprehensive strategy for the State's cement sector to achieve net-zero-emissions of GHGs associated with cement used within the State as soon as possible, but no later than December 31, 2045. The bill establishes an interim target of 40 percent below the 2019 average GHG intensity of cement by December 31, 2035. Under SB 596, CARB must: ● Define a metric for GHG intensity and establish a baseline from which to measure GHG intensity reductions. ● Evaluate the feasibility of the 2035 interim target (40 percent reduction in GHG intensity) by July 1, 2028. ● Coordinate and consult with other State agencies. ● Prioritize actions that leverage State and federal incentives. ● Evaluate measures to support market demand and financial incentives to encourage the production and use of cement with low GHG intensity. The 2022 Scoping Plan modeling is designed to achieve these outcomes.
Executive Order N-82-20	Governor Newsom signed Executive Order N-82-20 in October 2020 to combat the climate and biodiversity crises by setting a Statewide goal to conserve at least 30 percent of California's land and coastal waters by 2030. The Executive Order also instructed CNRA, in consultation with other State agencies, to develop a Natural and Working Lands Climate Smart Strategy that serves as a framework to advance the State's carbon neutrality goal and build climate resilience. In addition to setting a Statewide conservation goal, the Executive Order directed CARB to update the target for natural and working lands in support of carbon neutrality as part of this Scoping Plan and to take into consideration the NWL Climate Smart Strategy. CO_2 Executive Order N-82-20 also calls on CNRA, in consultation with other State agencies, to establish the California Biodiversity Collaborative (Collaborative). The Collaborative shall be made up of governmental partners, California Native American tribes, experts, business and community leaders, and other stakeholders from across the State. State agencies will consult the Collaborative on efforts to: ● Establish a baseline assessment of California's biodiversity that builds upon existing data and can be updated over time. ● Analyze and project the impact of climate change and other stressors in California's biodiversity. ● Inventory current biodiversity efforts across all sectors and highlight opportunities for additional action to preserve and enhance biodiversity. CNRA also is tasked with advancing efforts to conserve biodiversity through various actions, such as streamlining the State's process to approve and facilitate projects related to environmental restoration and land management. The California Department of Food and Agriculture (CDFA) is directed to advance efforts to conserve biodiversity through measures, such as reinvigorating populations of pollinator insects, which restore biodiversity and improve agricultural production. The Natural and Working Lands Climate Smart Strategy informs the 2022 Scoping Plan.

Table IV.D-4
Major Climate Legislation and Executive Orders Enacted Since the 2017 Scoping Plan

Bill/Executive Order	Summary
Executive Order N-79-20	Governor Newsom signed Executive Order N-79-20 in September 2020 to establish targets for the transportation sector to support the State in its goal to achieve carbon neutrality by 2045. The targets established in this Executive Order are: ● 100 percent of in-State sales of new passenger cars and trucks will be zero-emission by 2035. ● 100 percent of medium- and heavy-duty vehicles will be zero-emission by 2045 for all operations where feasible, and by 2035 for drayage trucks. ● 100 percent of off-road vehicles and equipment will be zero-emission by 2035 where feasible. The Executive Order also tasked CARB to develop and propose regulations that require increasing volumes of zero- electric passenger vehicles, medium- and heavy-duty vehicles, drayage trucks, and off-road vehicles toward their corresponding targets of 100 percent zero-emission by 2035 or 2045, as listed above. The 2022 Scoping Plan modeling reflects achieving these targets.
Executive Order N-19-19	Governor Newsom signed Executive Order N-19-19 in September 2019 to direct State government to redouble its efforts to reduce GHG emissions and mitigate the impacts of climate change while building a sustainable, inclusive economy. This Executive Order instructs the Department of Finance to create a Climate Investment Framework that: ● Includes a proactive strategy for the State's pension funds that reflects the increased risks to the economy and physical environment due to climate change. ● Provides a timeline and criteria to shift investments to companies and industry sectors with greater growth potential based on their focus of reducing carbon emissions and adapting to the impacts of climate change. ● Aligns with the fiduciary responsibilities of the California Public Employees' Retirement System, California State Teachers' Retirement System, and the University of California Retirement Program. Executive Order N-19-19 directs the State Transportation Agency to leverage more than $5 billion in annual State transportation spending to help reverse the trend of increased fuel consumption and reduce GHG emissions associated with the transportation sector. It also calls on the Department of General Services to leverage its management and ownership of the State's 19 million square feet in managed buildings, 51,000 vehicles, and other physical assets and goods to minimize state government's carbon footprint. Finally, it tasks CARB with accelerating progress toward California's goal of five million ZEV sales by 2030 by: ● Developing new criteria for clean vehicle incentive programs to encourage manufacturers to produce clean, affordable cars. ● Proposing new strategies to increase demand in the primary and secondary markets for ZEVs. ● Considering strengthening existing regulations or adopting new ones to achieve the necessary GHG reductions from within the transportation sector.

Table IV.D-4
Major Climate Legislation and Executive Orders Enacted Since the 2017 Scoping Plan

Bill/Executive Order	Summary
	The 2022 Scoping Plan modeling reflects efforts to accelerate ZEV deployment.
Senate Bill 576 (SB 576) (Umberg, Chapter 374, Statutes of 2019) *Coastal Resources: Climate Ready Program and Coastal Climate Change Adaptation, Infrastructure and Readiness Program*	Sea level rise, combined with storm-driven waves, poses a direct risk to the State's coastal resources, including public and private real property and infrastructure. Rising marine waters threaten sensitive coastal areas, habitats, the survival of threatened and endangered species, beaches, other recreation areas, and urban waterfronts. SB 576 mandates that the Ocean Protection Council develop and implement a coastal climate adaptation, infrastructure, and readiness program to improve the climate change resiliency of California's coastal communities, infrastructure, and habitat. This bill also instructs the State Coastal Conservancy to administer the Climate Ready Program, which addresses the impacts and potential impacts of climate change on resources within the conservancy's jurisdiction.
Assembly Bill 65 (AB 65) (Petrie- Norris, Chapter 347, Statutes of 2019) *Coastal Protection: Climate Adaption: Project Prioritization: Natural Infrastructure: Local General Plans*	This bill requires the State Coastal Conservancy, when it allocates any funding appropriated pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018, to prioritize projects that use natural infrastructure in coastal communities to help adapt to climate change. The bill requires the conservancy to provide information to the Office of Planning and Research on any projects funded pursuant to the above provision to be considered for inclusion into the clearinghouse for climate adaptation information. The bill authorizes the conservancy to provide technical assistance to coastal communities to better assist them with their projects that use natural infrastructure.
Executive Order B-55-18	Governor Brown signed Executive Order B-55-18 in September 2018 to establish a Statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter. Policies and programs undertaken to achieve this goal shall: ● Seek to improve air quality and support the health and economic resiliency of urban and rural communities, particularly low-income and disadvantaged communities. ● Be implemented in a manner that supports climate adaptation and biodiversity, including protection of the State's water supply, water quality, and native plants and animals. This Executive Order also calls for CARB to: ● Develop a framework for implementation and accounting that tracks progress toward this goal. ● Ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The 2022 Scoping Plan is designed to achieve carbon neutrality no later than 2045 and the modeling includes technology and fuel transitions to achieve that outcome.
Senate Bill 100 (SB 100) (De León, Chapter 312, Statutes of 2018) *California Renewables Portfolio Standard Program: emissions of greenhouse gases*	Under SB 100, the CPUC, CEC, and CARB shall use programs under existing laws to achieve 100-percent clean electricity. The statute requires these agencies to issue a joint policy report on SB 100 every four years. The first of these reports was issued in 2021. The 2022 Scoping Plan reflects the SB 100 Core Scenario resource mix with a few minor updates.

Table IV.D-4
Major Climate Legislation and Executive Orders Enacted Since the 2017 Scoping Plan

Bill/Executive Order	Summary
Assembly Bill 2127 (AB 2127) (Ting, Chapter 365, Statutes of 2018) *Electric Vehicle Charging Infrastructure: Assessment*	This bill requires the CEC, working with CARB and the CPUC, to prepare and biennially update a Statewide assessment of the electric vehicle charging infrastructure needed to support the levels of electric vehicle adoption required for the State to meet its goals of putting at least 5 million zero-emission vehicles (ZEV) on California roads by 2030 and of reducing emissions of GHGs to 40 percent below 1990 levels by 2030. The bill requires the CEC to regularly seek data and input from stakeholders relating to electric vehicle charging infrastructure. This bill supports the deployment of ZEVs as modeled in the 2022 Scoping Plan.
Senate Bill 30 (SB 30) (Lara, Chapter 614, Statutes of 2018) *Insurance: Climate Change*	This bill requires the Insurance Commissioner to convene a working group to identify, assess, and recommend risk transfer market mechanisms that, among other things, promote investment in natural infrastructure to reduce the risks of climate change related to catastrophic events, create incentives for investment in natural infrastructure to reduce risks to communities, and provide mitigation incentives for private investment in natural lands to lessen exposure and reduce climate risks to public safety, property, utilities, and infrastructure. The bill requires the policies recommended to address specified questions.
Assembly Bill 2061 (AB 2061) (Frazier, Chapter 580, Statutes of 2018) *Near-zero-emission and Zero-emission Vehicles*	Existing State and federal laws set specified limits on the total gross weight imposed on the highway by a vehicle with any group of two or more consecutive axles. Under existing federal law, the maximum gross vehicle weight of that vehicle may not exceed 82,000 pounds. AB 2061 authorizes a near-zero- emission vehicle or a zero-emission vehicle to exceed the weight limits on the power unit by up to 2,000 pounds. This bill supports the deployment of cleaner trucks as modeled in this 2022 Scoping Plan.

The 2022 Scoping Plan Scenario identifies the need to accelerate AB32's 2030 target, from 40 percent to 48 percent below 1990 levels. The Cap-and-Trade Program continues to play a large factor in the reduction of near-term emissions for meeting the 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet these GHG reduction goals and achieve carbon neutrality no later than 2045. The 2022 Scoping Plan approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology. The Scoping Plan Scenario is summarized in Table 2-1 starting on page 72 of the Scoping Plan. It includes references to relevant statutes and executive orders, although it is not comprehensive of all existing new authorities for directing or supporting the actions described. Table 2-1 identifies actions related to a variety of sectors, such as smart growth and reductions in Vehicle Miles Traveled (VMT); light-duty vehicles (LDV) and ZEVs; truck ZEVs; reduce fossil energy, emissions, and GHGs for aviation ocean-going vessels, port operations, freight and passenger rail, oil and gas extraction; and petroleum refining; improvements in electricity generation; electrical appliances in new and existing residential and commercial buildings; electrification and emission reductions across industries, such as for food products, construction equipment, chemicals and allied products, pulp and paper, stone/clay/glass/cement, other

industrial manufacturing, and agriculture; retiring of combined heat and power facilities; low carbon fuels for transportation, business, and industry; improvements in non-combustion methane emissions, and introduction of low GWP refrigerants.

Achieving the targets described in the 2022 Scoping Plan will require continued commitment to and successful implementation of existing policies and programs, and identification of new policy tools and technical solutions to go further, faster. California's Legislature and State agencies will continue to collaborate to achieve the State's climate, clean air, equity, and broader economic and environmental protection goals. It will be necessary to maintain and strengthen this collaborative effort, and to draw upon the assistance of the federal government, regional and local governments, tribes, communities, academic institutions, and the private sector to achieve the State's near-term and longer-term emission reduction goals and a more equitable future for all Californians. The 2022 Scoping Plan acknowledges that the path forward is not dependent on one agency, one state, or even one country. However, the State can lead by engaging Californians and demonstrating how actions at the State, regional, and local levels of governments, as well as action at community and individual levels, can contribute to addressing the challenge.

Aligning local jurisdiction action with state-level priorities to tackle climate change and the outcomes called for in the 2022 Scoping Plan is identified as critical to achieving the statutory targets for 2030 and 2045. The 2022 Scoping Plan discusses the role of local governments in meeting the State's GHG reductions goals. Local governments have the primary authority to plan, zone, approve, and permit how and where land is developed to accommodate population growth, economic growth, and the changing needs of their jurisdictions. They also make critical decisions on how and when to deploy transportation infrastructure, and can choose to support transit, walking, bicycling, and neighborhoods that do not force people into cars. Local governments also have the option to adopt building ordinances that exceed Statewide building code requirements, and play a critical role in facilitating the rollout of ZEV infrastructure. As a result, local government decisions play a critical role in supporting state-level measures to contain the growth of GHG emissions associated with the transportation system and the built environment—the two largest GHG emissions sectors over which local governments have authority. The City has taken the initiative in combating climate change by developing programs and regulations, such as the Green New Deal and the Los Angeles Green Building Code. Each of these is discussed further below.

(e) Cap-and-Trade Program

The Climate Change Scoping Plan identified a Cap-and-Trade Program as one of the strategies California would employ to reduce GHG emissions. CARB asserts that this program will help put California on the path to meet its goal of ultimately achieving an 80-percent reduction from 1990 levels by 2050. Under the Cap-and-Trade Program, an overall limit on GHG emissions from capped sectors was established and facilities subject to the cap will be able to trade permits to emit GHGs.

CARB designed and adopted a California Cap-and-Trade Program[28] pursuant to its authority under AB 32. The Cap-and-Trade Program is designed to reduce GHG emissions from public and private major sources (deemed "covered entities") by setting a firm cap on Statewide GHG emissions and employing market mechanisms to achieve the State's emission-reduction mandates. The Statewide cap for GHG emissions from the capped sectors[29] (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.

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 that emit more than 25,000 $MTCO_2e$ per year must comply with the Cap-and-Trade Program.[30] Triggering of the 25,000 $MTCO_2e$ per year "inclusion threshold" is measured against a subset of emissions reported and verified under the California Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Mandatory Reporting Rule or MRR).[31]

Each covered entity with a compliance obligation is required to surrender "compliance instruments"[32] for each $MTCO_2e$ of GHG they emit. Covered entities are allocated free allowances in whole or part (if eligible), and can buy allowances at auction, purchase allowances from others, or purchase offset credits.

The Cap-and-Trade Program provides a firm cap, ensuring that the Statewide emission limits will not be exceeded. 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 framework 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.

The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-State or imported.[33] Accordingly, for projects that are subject to the CEQA, GHG emissions from electricity consumption 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.[34]

[28] California Code of Regulations, Title 17, Section 95800 to 96023.
[29] California Code of Regulations, Title 17, Section 95811, 95812.
[30] California Code of Regulations, Title 17, Section 95812.
[31] California Code of Regulations, Title 17, Section 95100-95158.
[32] Compliance instruments are permits to emit, the majority of which will be "allowances," but entities also are allowed to use CARB-approved offset credits to meet up to 8% of their compliance obligations.
[33] California Code of Regulations, Title 17, Section 95811(b).
[34] California Code of Regulations, Title 17, Section 95811, 95812(d).

The Program applies to emissions that cover approximately 80 percent of the State's GHG emissions. Demonstrating the efficacy of AB 32 policies, California achieved its 2020 GHG Reduction Target four years earlier than mandated. The largest reductions were the result of increased renewable electricity in the electricity sector, which is a covered sector in the Cap-and-Trade Program.

AB 398 was enacted in 2017 to extend and clarify the role of the State's Cap-and-Trade Program through December 31, 2030. As part of AB 398, refinements were made to the Cap-and-Trade program to establish updated protocols and allocation of proceeds to reduce GHG emissions.

(f) Energy-Related (Stationary) Sources

(i) Emission Performance Standards

SB 1368, signed September 29, 2006, is a companion bill to AB 32, which requires the CPUC and the CEC to establish GHG emission performance standards for the generation of electricity. These standards also generally apply to power that is generated outside of California and imported into the State. SB 1368 provides a mechanism for reducing the emissions of electricity providers, thereby assisting CARB to meet its mandate under AB 32.

(ii) Renewables Portfolio Standard

SB 1078 (Chapter 516, Statutes of 2002) required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017 as an RPS. Subsequent amendments provided additional targets throughout the years. Most recently, on October 7, 2015, SB 350 (Chapter 547, Statues of 2015), also known as the Clean Energy and Pollution Reduction Act, further increased the RPS to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027. SB 350 also requires the State to double Statewide energy efficiency savings in electricity and natural gas end uses by 2030. The 2017 Climate Change Scoping Plan incorporated the SB 350 standards and estimated the GHG reductions would account for approximately 21 percent of the Scoping Plan reductions.[35] On September 10, 2018, SB 100, provided additional RPS targets of 44 percent by 2024, 52 percent by 2027, and 60 percent by 2030, and that CARB should plan for 100-percent eligible renewable energy resources and zero-carbon resources by 2045.[36]

[35] CARB, California's 2017 Climate Change Scoping Plan, Table 3, p. 31, November 2017. Calculated as: (108 – 53) / 260 = 21 percent.

[36] California Legislative Information, *SB-100 California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases*.

(iii) Assembly Bill 1279 (The California Climate Crisis Act)

The California Legislature enacted AB 1279, California Climate Crisis Act, on September 16, 2022.[37] AB 1279 establishes the policy of the State to achieve net zero GHG emissions, carbon neutrality[38], as soon as possible, but no later than 2045 and achieve and maintain net negative GHG emissions thereafter. Additionally, AB 1279 ensures that by 2045 Statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. SB 1279 also required CARB to ensure that the 2022 Scoping Plan identified and recommended measures to achieve carbon neutrality and to identify and implement policies and strategies for CO_2 removal solutions and carbon capture, utilization, and storage technologies. It also requires CARB to submit an annual report on progress in achieving the 2022 Scoping Plan's goals.

(g) Mobile Sources

(i) Pavley Standards

AB 1493 (Chapter 200, Statutes of 2002), enacted on July 22, 2002, required CARB to set GHG emission standards for passenger vehicles, light duty trucks, and other vehicles whose primary use is non-commercial personal transportation manufactured in and after 2009. In 2004, CARB approved the Pavley regulation to require automakers to control GHG from new passenger vehicles for the 2009 through 2016 model years. Upon adoption of subsequent federal GHG standards by the United States U.S. EPA that preserved the benefits of the Pavley regulations, the Pavley regulations were revised to accept compliance with the federal standards as compliance with California's standards in the 2012 through 2016 model years. This is referred to as the "deemed to comply" option.

In January 2012, CARB approved greenhouse gas emission regulations which require further reductions in passenger greenhouse gas emissions for 2017 and subsequent vehicle model years. As noted above, in August 2012, the USEPA and USDOT adopted GHG emission standards for model year 2017 through 2025 vehicles.[39] On November 15, 2012, CARB approved an amendment that allows manufacturers to comply with the 2017-2025 national standards to meet State law. Automobile manufacturers generally comply with these standards through a combination of improved energy efficiency in vehicle equipment (e.g., air conditioning systems)

[37] California Legislative Information, AB-1279 The California Climate Crisis Act, 2022, https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB1279, accessed January 2023.

[38] Carbon neutrality means "net zero" emissions of GHGs. In other words, it means that GHG emissions generated by sources such as transportation, power plants, and industrial processes must be less than or equal to the amount of carbon dioxide that is stored, both in natural sinks and through mechanical sequestration. AB 1279 uses the terminology net zero and the 2022 Scoping Plan Update uses the terminology carbon neutrality or carbon neutral. These terms mean the same thing and are used interchangeably.

[39] United States Environmental Protection Agency, Final Rule for Model Year 2017 and Later Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy, 2012.

and engines as well as sleeker aerodynamics, use of strong but lightweight materials, and lower-rolling resistance tires.[40]

In 2018, the USEPA proposed the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE) which would roll back fuel economy standards and revoke California's waiver. The rule amended certain average fuel economy and GHG standards for passenger cars covering model years 2021 through 2026. On March 30, 2020, the SAFE Rule was finalized and published in the Federal Register, commencing a review period. Subsequent legal challenges from a coalition of states, including California, and private industry groups were issued. However, in December 2021, the NHTSA repealed the SAFE Vehicle Rule Part One.[41] Although the SAFE Vehicle Rule Part One has been repealed, GHG modeling contained in regional plans, such as SCAG's 2020-2045 RTP/SCS, have not been updated to account for this repeal.

(ii) California Low Carbon Fuel Standard

Executive Order S-01-07 was enacted by Governor Arnold Schwarzenegger on January 18, 2007. The order mandates the following: (1) that a Statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and (2) that a LCFS for transportation fuels be established in California. The final regulation was approved by the State's Office of Administrative Law and filed with the Secretary of State on January 12, 2010; the LCFS became effective on the same day. 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.[42]

The development of the 2017 Scoping Plan Update has identified LCFS as a regulatory measure to reduce GHG emission to meet the 2030 emissions target. In September 2018, the standards were amended by CARB to require a 20-percent reduction in carbon intensity by 2030, aligning with California's 2030 targets set by SB 32.[43]

(iii) Advanced Clean Cars Regulations

In 2012, CARB approved the Advanced Clean Cars program, an emissions-control program for model years 2015–2025.[44] The components of the Advanced Clean Cars program include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the ZEV regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles in the 2018 through 2025

40 CARB, California's Advanced Clean Cars Midterm Review, pp. ES-17, C-9.
41 Federal Register. Vol. 86, No. 247, December 29, 2021.
42 CARB, Low Carbon Fuel Standard - About, https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/about https://www.arb.ca.gov/fuels/lcfs/lcfs.htm. Accessed August 23, 2022.
43 CARB, CARB amends Low Carbon Fuel Standard for wider impact, 2018, https://ww2.arb.ca.gov/index.php/news/carb-amends-low-carbon-fuel-standard-wider-impact. Accessed August 23, 2022.
44 CARB, Advanced Clean Cars Program - About, https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/about. Accessed August 23, 2022.

model years.[45] During the March 2017 midterm review, CARB voted unanimously to continue with the vehicle GHG emission standards and the ZEV program for cars and light trucks sold in California through 2025.[46]

In addition, Governor Gavin Newsom signed an executive order (Executive Order No. N-79-20) on September 23, 2020, that would phase out sales of new gas-powered passenger cars by 2035 in California with an additional 10-year transition period for heavy vehicles. The State would not restrict used car sales or forbid residents from owning gas-powered vehicles. In accordance with the executive order, CARB is developing a 2020 Mobile Source Strategy, a comprehensive analysis that presents scenarios for possible strategies to reduce the carbon, toxic and unhealthy pollution from cars, trucks, equipment, and ships. The strategies will provide important information for numerous regulations and incentive programs going forward by conveying what is necessary to address the aggressive emission reduction requirements.

The primary mechanism for achieving the ZEV target for passenger cars and light trucks is CARB's Advanced Clean Cars II (ACC II) Program. The ACC II regulations will focus on post-2025 model year light-duty vehicles, as requirements are already in place for new vehicles through the 2025 model year. A rulemaking package is anticipated to be presented to the Board members in June 2022.

(iv) Sustainable Communities and Climate Protection Act (SB 375)

The Sustainable Communities and Climate Protection Act of 2008, or SB 375 (Chapter 728, Statutes of 2008), which was adopted by the State on September 30, 2008, establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. SB 375 finds that the "transportation sector is the single largest contributor of greenhouse gases of any sector."[47] Under SB 375, CARB is required, in consultation with the Metropolitan Planning Organizations (MPOs), to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035. SCAG is the MPO in which the City of Los Angeles is located in. CARB set targets for 2020 and 2035 for each of the 18 MPO regions in 2010, and updated them in 2018.[48] In March 2018, CARB updated the SB 375 targets for the SCAG region to require an 8-percent reduction by 2020 and a 19-percent reduction by 2035 in per capita passenger vehicle GHG emissions.[49] As discussed further below, in September 2020, SCAG adopted an updated Regional Transportation Plan/Sustainable Community

[45] CARB, Advanced Clean Cars Program - About, https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/about. Accessed August 23, 2022.

[46] CARB, News Release: CARB finds vehicle standards are achievable and cost-effective, https://ww2.arb.ca.gov/news/carb-finds-vehicle-standards-are-achievable-and-cost-effective. Accessed August 23, 2022.

[47] State of California, Senate Bill No. 375, September 30, 2008.

[48] CARB, Sustainable Communities & Climate Protection Program – About. https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-climate-protection-program/about. Accessed August 23, 2022.

[49] CARB, SB 375 Regional Greenhouse Gas Emissions Reduction Targets, 2018.

Strategies (2020-2045 RTP/SCS) subsequent to the update of the emission targets. The 2020–2045 RTP/SCS is expected to reduce per capita transportation emissions by 19 percent by 2035, which is consistent with SB 375 compliance with respect to meeting the State's GHG emission reduction goals.[50]

Under SB 375, the target must be incorporated within that region's RTP, which is used for long-term transportation planning, in an SCS. Certain transportation planning and programming activities would then need to be consistent with the SCS; however, SB 375 expressly provides that the SCS does not regulate the use of land, and further provides that local land use plans and policies (e.g., general plans) are not required to be consistent with either the RTP or SCS.

(v) Senate Bill 743

Governor Jerry Brown signed Senate Bill (SB) 743 in 2013, which creates a process to change the way that transportation impacts are analyzed under CEQA. Specifically, SB 743 requires the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide an alternative to level of service (LOS) methodology for evaluating transportation impacts. Particularly within areas served by transit, the required alternative criteria must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." Measurements of transportation impacts may include "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated."

(h) Building Standards and Other Regulations

(i) California Appliance Efficiency Regulations

The Appliance Efficiency Regulations (Title 20, Sections 1601 through 1608), adopted by the CEC, include standards for new appliances (e.g., refrigerators) and lighting, if they are sold or offered for sale in California. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

(ii) Title 24, Building Standards Code and CALGreen Code

The CEC first adopted the Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the State. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

[50] SCAG, Final 2020–2045 RTP/SCS, Chapter 0: Making Connections, 2020, p. 5.

Part 11 of the Title 24 Building Standards is referred to as the California Green Building Standards (CALGreen) Code and was developed to help the State achieve its GHG reduction goals under HSC Division 25.5 (e.g., AB 32) by codifying standards for reducing building-related energy, water, and resource demand, which in turn reduces GHG emissions from energy, water, and resource demand. The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality."[51] The CALGreen Code is not intended to substitute for or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission. The CALGreen Code establishes mandatory measures for new residential and non-residential buildings. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design and overall environmental quality.[52]

On August 11, 2021, the CEC adopted the 2022 Title 24 Standards, which went into effect on January 1, 2023. The 2022 standards continue to improve upon the previous (2019) Title 24 standards for new construction of, and additions and alterations to, residential and non-residential buildings.[53] The 2022 Title 24 Standards "build on California's technology innovations, encouraging energy efficient approaches to encourage building decarbonization, emphasizing in particular on heat pumps for space heating and water heating. This set of Energy Codes also extends the benefits of photovoltaic and battery storage systems and other demand flexible technology to work in combinations with heat pumps to enable California buildings to be responsive to climate change. This Energy code also strengthens ventilation standards to improve indoor air quality. This update provides crucial steps in the state's progress toward 100 percent clean carbon neutrality by midcentury."[54] The 2022 Energy Code is anticipated to reduce GHG emissions by 10 $MMTCO_2e$ over the next 30 years and result in approximately 1.5 billion dollars in consumer savings[55]. Compliance with Title 24 is enforced through the building permit process.

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51 California Building Standards Commission, 2010 California Green Building Standards Code, 2010, p. 1.

52 California Building Standards Commission, 2010 California Green Building Standards Code, 2010, p. vii.

53 California Energy Commission. 2022a. Building Energy Efficiency Standards. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency. Accessed June 2, 2023.

54 2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings: For the 2022 Building Energy Standards Title 24, Part 6, and Associated Administrative Regulations Part 1 Abstract. https://www.energy.ca.gov/publications/2022/2022-building-energy-efficiency-standards-residential-and-nonresidential. Accessed June 2, 2023.

55 Energy Commission Adopts Updated Building Standards to Improve Efficiency, Reduce Emissions from Homes and Businesses. https://www.energy.ca.gov/news/2021-08/energy-commission-adopts-updated-building-standards-improve-efficiency-reduce-0. Accessed June 2, 2023.

(iii) Electric Vehicle Charging Station Permit Streamlining

AB 1236 (Chiu, 2015), codified in Government Code Section 65850.7, requires all California cities and counties to develop an expedited, streamlined permitting process for electric vehicle charging stations (EVCS). The law was developed to further the availability of charging infrastructure to help drive the deployment of zero emission vehicles—the faster charging stations are deployed, the sooner California's air quality improves, greenhouse gas emissions are reduced, and local economic benefits are captured. Pursuant to AB 1236, cities and counties must adopt a streamlining ordinance and checklist.[56]

AB 970 (McCarty, 2021), codified in Government Code Section 65850.71, builds on California's existing permit streamlining law, AB 1236. Jurisdictions are required by AB 1236 to limit EVCS project review to health and safety requirements. AB 970 adds specific binding timelines to that review period based on the size of the project and clarifies parking requirements.[57]

(i) CEQA Guidelines

In August 2007, the California State Legislature adopted SB 97 (Chapter 185, Statutes of 2007), requiring OPR to prepare and transmit new CEQA Guidelines for the mitigation of GHG emissions or the effects of GHG emissions to the Resources Agency by July 1, 2009. In response to SB 97, the OPR adopted CEQA guidelines that became effective on March 18, 2010.

However, neither a threshold of significance nor any specific mitigation measures are included or provided in the CEQA Guidelines.[58] The CEQA Guidelines require a lead agency to make a good-faith effort, based on the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. Discretion is given to the lead agency whether to: (1) use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use; or (2) rely on a qualitative analysis or performance-based standards. Furthermore, three factors are identified that should be considered in the evaluation of the significance of GHG emissions:

1. The extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting;
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

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56 Governor's Office of Business and Economic Development, Electric Vehicle Charging Station Permit Streamlining Fact Sheet. https://business.ca.gov/wp-content/uploads/2021/11/EV-Charger-Permit-Streamlining-AB-1236-Fact-Sheet-Version-1.pdf.

57 Governor's Office of Business and Economic Development, Electric Vehicle Charging Station Permit Streamlining Fact Sheet. https://business.ca.gov/wp-content/uploads/2021/11/EV-Charger-Permit-Streamlining-AB-1236-Fact-Sheet-Version-1.pdf.

58 See 14 Cal. Code Regs. §§ 15064.7 (generally giving discretion to lead agencies to develop and publish thresholds of significance for use in the determination of the significance of environmental effects), 15064.4 (giving discretion to lead agencies to determine the significance of impacts from GHGs).

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 GHG emissions.[59]

The administrative record for the CEQA Guidelines Amendments also clarifies "that the effects of greenhouse gas emissions are cumulative, and should be analyzed in the context of California Environmental Quality Act's requirements for cumulative impact analysis."[60]

(3) Regional

(a) South Coast Air Quality Management District CEQA Guidance

The City of Los Angeles is located in the South Coast Air Basin (Air Basin), which consists of Orange County, Los Angeles County (excluding the Antelope Valley portion), and the western, non-desert portions of San Bernardino and Riverside Counties, in addition to the San Gorgonio Pass area in Riverside County. The South Coast Air Quality Management District (SCAQMD) is responsible for air quality planning in the Air Basin and developing rules and regulations to bring the area into attainment of the ambient air quality standards. This is accomplished through air quality monitoring, evaluation, education, implementation of control measures to reduce emissions from stationary sources, permitting and inspection of pollution sources, enforcement of air quality regulations, and by supporting and implementing measures to reduce emissions from motor vehicles.

In 2008, SCAQMD released draft guidance regarding interim CEQA GHG significance thresholds.[61] A GHG Significance Threshold Working Group was formed to further evaluate potential GHG significance thresholds.[62] The SCAQMD proposed the use of a percent emission reduction target to determine significance for commercial/residential projects that emit greater than 3,000 $MTCO_2e$ per year. Under this proposal, commercial/residential projects that emit fewer than 3,000 $MTCO_2e$ per year would be assumed to have a less-than-significant impact on climate change. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold of 10,000 $MTCO_2e$ per year for stationary source/industrial projects where the SCAQMD is the lead agency. However, the SCAQMD has yet to adopt a GHG significance threshold for land use development projects (e.g., residential/commercial projects). The Working Group has been inactive since 2011, and SCAQMD has not formally adopted any GHG significance threshold for other jurisdictions.

59 14 Cal. Code Regs. § 15064.4(b).
60 Letter from Cynthia Bryant, Director of the Governor's Office of Planning and Research to Mike Chrisman, California Secretary for Natural Resources, dated April 13, 2009.
61 SCAQMD, Board Meeting, December 5, 2008, Agenda No. 31, http://www3.aqmd.gov/hb/2008/December/081231a.htm, accessed August 23, 2022.
62 SCAQMD, Greenhouse Gases CEQA Significance Thresholds, http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds/page/2,. accessed August 23, 2022.

(b) SCAG Regional Transportation Plan/Sustainable Communities Strategy

To implement SB 375 and reduce GHG emissions by correlating land use and transportation planning, SCAG adopted the 2020–2045 RTP/SCS in September 2020. The vision for the region incorporates a range of best practices for increasing transportation choices, reducing dependence on personal automobiles, further improving air quality, and encouraging growth in walkable, mixed-use communities with ready access to transit infrastructure and employment. More and varied housing types and employment opportunities would be located in and near job centers, transit stations and walkable neighborhoods where goods and services are easily accessible via shorter trips. To support shorter trips, people would have the choice of using neighborhood bike networks, car share or micro-mobility services like shared bicycles or scooters. For longer commutes, people would have expanded regional transit services and more employer incentives to carpool or vanpool. Other longer trips would be supported by on-demand services such as microtransit, carshare, and citywide partnerships with ride hailing services. For those that choose to drive, hotspots of congestion would be less difficult to navigate due to cordon pricing and using an electric vehicle will be easier due to an expanded regional charging network.

The 2020–2045 RTP/SCS states that the SCAG region was home to about 18.8 million people in 2016 and currently includes approximately 6.0 million homes and 8.4 million jobs.[63] By 2045, the integrated growth forecast estimates that these figures will increase by 3.7 million people, with nearly 1.6 million more homes and 1.6 million more jobs. Transit Priority Areas[64] (TPAs) will account for less than 1 percent of regional total land but are projected to accommodate 30 percent of future household growth between 2016 and 2045. The 2020–2045 RTP/SCS overall land use pattern reinforces the trend of focusing new housing and employment in the region's TPAs. TPAs are a cornerstone of land use planning best practice in the SCAG region because they concentrate roadway repair investments, leverage transit and active transportation investments, reduce regional life cycle infrastructure costs, improve accessibility, create local jobs, and have the potential to improve public health and housing affordability.

The 2020–2045 RTP/SCS is expected to reduce per capita transportation emissions by 19 percent by 2035, which is consistent with SB 375 compliance with respect to meeting the State's GHG emission reduction goals.[65] Due to fuel economy and efficiency improvements, GHG emission rates of model year 2017 vehicles have decreased by 15 to 20 percent when compared to model year 2008 and earlier vehicles. However, for purposes of SB 375 emissions reduction targets, the fuel economy improvements have been largely excluded from the reduction calculation. The SB 375 target focuses on the amount of vehicle travel per capita. As discussed above, OPR recommended that achieving 15-percent lower per capita (residential) or per

63 2020–2045 RTP/SCS population growth forecast methodology includes data for years 2010, 2010, 2016, and 2045.

64 Defined by the 2020–2045 RTP/SCS as generally walkable transit villages or corridors that are within 0.5 mile of a major transit stop (rail or bus rapid transit station) with 15-minute or less service frequency during peak commute hours.

65 SCAG, Final 2020–2045 RTP/SCS, Chapter 0: Making Connections, p. 5, 2020.

employee (office) VMT than existing development is both generally achievable and is supported by evidence that connects this level of reduction to the State's emissions goals (i.e., SB 375 goal). The reductions generated by fuel economy improvements are already included as part of the State's GHG emissions reduction program and are not double-counted in the SB 375 target calculation.

(4) Local

(a) Green New Deal

The City of Los Angeles addressed the issue of global climate change in *Green LA, An Action Plan to Lead the Nation in Fighting Global Warming* (LA Green Plan/ClimateLA) in 2007. This document outlines the goals and actions the City has established to reduce the generation and emission of GHGs from both public and private activities.

Subsequently on April 8, 2015, Mayor Eric Garcetti released the Sustainable City pLAn, which includes both short-term and long-term aspirations through the year 2035 in various topic areas, including water, solar power, energy-efficient buildings, carbon and climate leadership, waste and landfills, housing and development, mobility and transit, and air quality, among others.[66] Specific targets included the construction of new housing units within 1,500 feet of transit by 2017, reducing VMT per capita by 5-percent by 2025, and increasing trips made by walking, biking or transit by at least 35 percent by 2025. The Sustainable City pLAn was intended to be updated every four years.

In April 2019, the Sustainability City pLAn was updated and renamed as *L.A.'s Green New Deal,* which consists of a program of actions designed to create sustainability-based performance targets through 2050 to advance economic, environmental, and equity objectives.[67] The Green New Deal augments, expands, and elaborates the City's vision for a sustainable future and tackles the climate emergency with accelerated targets and new aggressive goals.

While not a plan adopted solely to reduce GHG emissions, within the Green New Deal, "Climate Mitigation," or reduction of GHG is one of eight explicit benefits that help define its strategies and goals. These include reducing GHG emissions through near-term outcomes:

- Reduce potable water use per capita by 22.5 percent by 2025, 25 percent by 2035, and maintain or reduce 2035 per capita water use through 2050.
- Reduce building energy use per square feet for all building types 22 percent by 2025, 34 percent by 2035, and 44 percent by 2050 (from a baseline of 68 thousand British thermal units (mBTU) per square foot in 2015).

66 City of Los Angeles, Sustainable City pLAn, April 2015.
67 City of Los Angeles. LA's Green New Deal, 2019.

- All new buildings will be net zero carbon by 2030, and 100 percent of buildings will be net zero carbon by 2050.
- Increase cumulative new housing unit construction to 150,000 by 2025 and 275,000 units by 2035.
- Ensure 57 percent of new housing units are built within 1,500 feet of transit by 2025 and 75 percent by 2035.
- Increase the percentage of all trips made by walking, biking, micro-mobility/matched rides, or transit to at least 35 percent by 2025, 50 percent by 2035, and maintain at least 50 percent by 2050.
- Reduce VMT per capita by at least 13 percent by 2025, 39 percent by 2035, and 45 percent by 2050.
- Increase the percentage of electric and zero emission vehicles in the city to 25 percent by 2025, 80 percent by 2035, and 100 percent by 2050.
- Increase landfill diversion rate to 90 percent by 2025, 95 percent by 2035, and 100 percent by 2050.
- Reduce municipal solid waste generation per capita by at least 15 percent by 2030, including phasing out single-use plastics by 2028 (from a baseline of 17.85 pounds of waste generated per capita per day in 2011).
- Eliminate organic waste going to landfill by 2028.
- Reduce urban/rural temperature differential by at least 1.7 degrees by 2025 and 3 degrees by 2035.
- Ensure the proportion of Angelenos living within 0.5 mile of a park or open space is at least 65 percent by 2025, 75 percent by 2035, and 100 percent by 2050.

(b) City of Los Angeles Green Building Code

On December 11, 2019, the Los Angeles City Council approved Ordinance No. 186,488, which amended Chapter IX of the Los Angeles Municipal Code (LAMC), referred to as the Los Angeles Green Building Code, by adding a new Article 9 to incorporate various provisions of the 2019 CALGreen Code. Projects filed on or after January 1, 2020, must comply with the provisions of the Los Angeles Green Building Code. Specific mandatory requirements and elective measures are provided for three categories: (1) low-rise residential buildings; (2) nonresidential and high-rise residential buildings; and (3) additions and alterations to nonresidential and high-rise residential buildings. Article 9, Division 5 includes mandatory measures for newly constructed nonresidential and high-rise residential buildings.

(c) City of Los Angeles All-Electric Buildings

Chapter IX of the LAMC also requires that all new buildings be all-electric buildings, with some exceptions. Equipment typically powered by natural gas, such as space heating, water heating,

cooking appliances and clothes drying, would need to be powered by electricity for new construction. Exceptions are made for commercial restaurants, laboratory, and research and development uses. The LAMC is consistent with 2022 Title 24 goals of encouraging all-electric development which requires new residential uses to be electric-ready (wiring installed for all-electric appliances). Buildings in Los Angeles account for 43 percent of GHG emissions—more than any other sector in the City. These LAMC requirements ensure that new buildings being constructed are built to leverage the increasingly clean electric grid, which is anticipated to be carbon-free by 2035, rather than relying on fossil fuels.

(d) City of Los Angeles Solid Waste Programs and Ordinances

The recycling of solid waste materials also contributes to reduced energy consumption. Specifically, when products are manufactured using recycled materials, the amount of energy that would have otherwise been consumed to extract and process virgin source materials is reduced as well as disposal energy averted. In 1989, California enacted AB 939, the California Integrated Waste Management Act, which establishes a hierarchy for waste management practices such as source reduction, recycling, and environmentally safe land disposal.

The City has developed and is in the process of implementing the Solid Waste Integrated Resources Plan, also referred to as the Zero Waste Plan, whose goal is to lead the City towards being a "zero waste" City by 2030. These waste reduction plans, policies, and regulations, along with Mayoral and City Council directives, have increased the level of waste diversion for the City to 76 percent as of 2013.[68] In addition, the City adopted the Recovering Energy, Natural Resources, and Economic Benefit from Waste for Los Angeles (RENEW LA) Plan in 2006, which aims to achieve a zero waste goal through reducing, reusing, recycling, or converting the resources not going to disposal and achieving a diversion rate of 90 percent or more by 2025.[69] The City has also approved the Waste Hauler Permit Program (Ordinance No. 181,519, LAMC Chapter VI, Article 6, Section 66.32-66.32.5), which requires private waste haulers to obtain AB 939 Compliance Permits to transport construction and demolition waste to City-certified construction and demolition waste processors. The City's Exclusive Franchise System Ordinance (Ordinance No. 182,986), among other requirements, sets a maximum annual disposal level and diversion requirements for franchised waste haulers to promote waste diversion from landfills and support the City's zero waste goals. These programs reduce the number of trips to haul solid waste and therefore reduce the amount of petroleum-based fuels and energy used to process solid waste.

(e) City of Los Angeles General Plan

The City does not have a General Plan Element specific to climate change and GHG emissions, but several goals, objectives, or policies in the City's General Plan Air Quality Element, Plan for Healthy LA, and the Mobility Plan encourage the reduction in GHG emissions. More specifically,

[68] City of Los Angeles, Department of Public Works, LA Sanitation, Recycling. https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-s/s-lsh-wwd-s-r, accessed August 23, 2022.

[69] City of Los Angeles, RENEW LA, Five-Year Milestone Report, 2011.

the following five goals from the City's General Plan Air Quality Element would lead to GHG emission reductions:[70]

- Less reliance on single-occupancy vehicles with fewer commute and non-work trips;
- Efficient management of transportation facilities and system infrastructure using cost-effective system management and innovative demand-management techniques;
- Minimal impacts of existing land use patterns and future land use development on air quality by addressing the relationship between land use, transportation, and air quality;
- Energy efficiency through land use and transportation planning, the use of renewable resources and less-polluting fuels, and the implement of conservation measures, including passive measures, such as site orientation and tree planting; and
- Citizen awareness of the linkages between personal behavior and air pollution and participation in efforts to reduce air pollution.

(f) Housing Element (Housing Needs Assessment)

The Housing Element of the General Plan is prepared pursuant to State law and provides planning guidance in meeting housing needs identified in the SCAG Regional Housing Needs Assessment (RHNA). The Housing Element identifies the City's housing conditions and needs, establishes the goals, objectives, and policies that are the foundation of the City's housing and growth strategy, and provides the array of programs the City intends to implement to create and preserve sustainable, mixed-income neighborhoods across the City.

The Housing Needs Assessment chapter of the Housing Element discusses the City's population and housing stock to identify housing needs for a variety of household types across the City. The current RHNA goal for affordable housing within the City is approximately 40 percent of new construction. However, the City's projections show affordable housing comprising 20 percent of new construction, which falls short of the 40-percent RHNA goal. In order to address this shortfall in affordable housing, the Housing Element provides measures to streamline and incentivize development of affordable housing. Such measures include revising density bonuses for affordable housing; identifying locations which are ideal for funding programs to meet low-income housing goals; and rezoning areas to encourage low-income housing. With implementation of such measures to increase affordable housing, the Housing Element predicts a significant increase in housing production at all income ranges compared to previous cycles.

The Housing Element also promotes sustainability and resilience and environmental justice through housing, as well as the need to reduce displacement. It encourages the utilization of alternatives to current parking standards that lower the cost of housing, support GHG and VMT goals, and recognize the emergence of shared and alternative mobility. The Housing Element also identifies housing strategies for energy conservation, water conservation, alternative energy sources and sustainable development which support conservation and reduce demand.

[70] City of Los Angeles, Air Quality Element, Adopted 1992, pages IV-1 to IV-4.

(g) Mobility Plan 2035

In August 2015, the City Council adopted Mobility Plan 2035 (Mobility Plan), which serves as the City's General Plan circulation element. The City Council has adopted several amendments to the Mobility Plan since its initial adoption, including the latest amendment on September 7, 2016.[71] The Mobility Plan incorporates "complete streets" principles and lays the policy foundation for how the City's residents interact with their streets. While the Mobility Plan mainly relates to transportation, certain components would serve to reduce VMT and mobile source GHG emissions. One component of the Mobility Plan is a GHG emission tracking program to establish compliance with SB 375, AB 32, and the region's SCS.

(h) Traffic Study Policies and Procedures

The City of Los Angeles Department of Transportation (LADOT) has developed the City Transportation Assessment Guidelines (TAG) (July 2019, updated July 2020 and August 2022) to provide the public, private consultants, and City staff with standards, guidelines, objectives, and criteria to be used in the preparation of a transportation assessment. The TAG establishes the reduction of vehicle trips and VMT as the threshold for determining transportation impacts and, thus, is an implementing mechanism of the City's strategy to reduce land use transportation-related GHG emissions consistent with AB 32, SB 32, and SB 375.

a) Existing Conditions

(1) Existing Statewide Greenhouse Gas Emissions Inventory

CARB compiles GHG inventories for the State of California. The most updated inventory reports the State's GHG emissions inventory from calendar year 2020. Based on the 2020 GHG inventory data (i.e., the latest year for which data are available from CARB), California emitted 369.2 MMTCO2e including emissions resulting from imported electrical power.[72] Between April 2010 and July 2020, the population of California grew by an annualized rate of 0.64 percent to a total of 39.78 million.[73] In addition, the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product (GDP)) is declining. The California economy, measured as gross state product, grew from $773 billion in 1990 to $3.4 trillion in 2021 representing an increase of over three times the 1990 gross state product.[74] California's economy,

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71 Los Angeles Department of City Planning, Mobility Plan 2035: An Element of the General Plan, approved by City Planning Commission on June 23, 2016, and adopted by City Council on September 7, 2016.

72 CARB, California Greenhouse Gas Emissions for 2000–2020 – by Category as Defined in the 2008 Scoping Plan, October 26, 2022. https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/ghg_inventory_scopingplan_sum_2000-20.pdf. Accessed October 2023.

73 California Department of Finance, "E-6. Population estimates and components of change by county 2010–2020," 2020, December. https://dof.ca.gov/forecasting/demographics/estimates/estimates-e6-2010-2021/. Accessed October 2023.

74 California Department of Finance, Gross State Product, 2021, https://dof.ca.gov/Forecasting/Economics/economic-indicators/gross-state-product/. Accessed October 2023. Amounts are based on current dollars as of May 2022.

as with most of the country, experienced a decline in gross state product in 2020 ($3.0 trillion) due to the COVID-19 pandemic. Despite the population and economic growth experienced in 2021, California's net GHG emissions were reduced to below 1990 levels in 2020.[75] According to CARB, as of 2016, statewide GHG emissions dropped below the 2020 GHG Limit (431 MMTCO2e) and have remained below the limit since that time, due in part to the state's GHG reduction programs (such as the RPS, LFCS, vehicle efficiency standards, and declining caps under the Cap-and-Trade Program). **Table IV.D-5, State of California Greenhouse Gas Emissions,** identifies and quantifies Statewide anthropogenic GHG emissions and sinks (e.g., carbon sequestration due to forest growth) in 1990 and 2020 (i.e., the most recent year in which data are available from CARB). As shown in Table IV.D-5, the transportation sector is the largest contributor to statewide GHG emissions at approximately 37 percent in 2020.

Table IV.D-5
State of California Greenhouse Gas Emissions

Category	Total 1990 Emissions using IPCC SAR ($MMTCO_{2e}$)	Percent of Total 1990 Emissions	Total 2020 Emissions using IPCC AR4 ($MMTCO_{2e}$)	Percent of Total 2020 Emissions
Transportation	150.7	35%	135.8	36.8%
Electric Power	110.6	26%	59.5	16.1%
Commercial	14.4	3%	11.6	3.6%
Residential	29.7	7%	25.3	6.8%
Industrial	103.0	24%	73.3	19.9%
Recycling and Waste [a]	-	-	8.9	2.4%
High-GWP/Non-Specified [b]	1.3	<1%	21.3	5.8%
Agriculture Forestry	23.6	6%	31.6	8.6%
Forestry Sinks [c]	-6.7		-	-
Net Total (IPCC AR4) [d]	**431**	**100%**	**369.2**	**100%**

[a] Included in other categories for the 1990 emissions inventory.
[b] High-GWP gases are not specifically called out in the 1990 emissions inventory.
[c] Revised methodology under development (not reported for 2020).
[d] CARB revised the State's 1990 level GHG emissions using GWPs from the IPCC AR4.
Sources: California Air Resources Board, California Greenhouse Gas Emissions for 2000 to 2020, Trends of Emissions and Other Indicators, October 26, 2022.
https://ww2.arb.ca.gov/sites/default/files/classic/inventory/2000-2020_ghg_inventory_trends.pdf
Accessed October 2023.

(2) Existing Project Site Emissions

The Project Site is currently developed with 35,445 square feet of industrial warehouse uses and surface parking. Although the existing warehouse buildings are currently vacant, they were operational within the last two years; operational emissions associated with the use of the warehouse buildings comprised of mobile source emissions, energy demand, and other area source emissions. Mobile source emissions were generated by the motor vehicle trips to and from the warehouse buildings. The VMT analysis with the Traffic Study estimated that the

[75] California Department of Finance, Gross State Product, 2021, https://dof.ca.gov/Forecasting/Economics/economic-indicators/gross-state-product/. Accessed October 2023. Amounts are based on current dollars as of May 2022.

industrial warehouse uses generated 185 daily total trips with a daily VMT of 1,282. Area source emissions were generated by natural gas consumption for space and water heating, landscape maintenance equipment, and consumer products. The GHG emissions generated by the industrial warehouse uses on the Project Site are shown in **Table IV.D-6, Existing Greenhouse Gas Emissions**. As shown, GHG emissions generated by the industrial warehouse uses on the Project Site were approximately 398 $MTCO_2e$/year.

Table IV.D-6
Existing Greenhouse Gas Emissions

Emissions Source	Estimated Project CO_2e Emissions (Metric Tons per Year)
Area	0.78
Energy	175
Mobile	179
Waste	13.7
Water	28.7
Existing Project Site CO_2e Total	**398**[a]
[a] Total may not agree exactly due to rounding (includes emissions for refrigerants). *Source: CalEEMod 2022.1 Output Appendix E*	

3. Project Impacts

a) Thresholds of Significance

In accordance with CEQA Guidelines Appendix G (Appendix G), the Project would have a significant impact related to GHG emissions if it would:

Threshold (a): ***Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.***

Threshold (b): ***Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.***

As described in Section 15064.4(b) of the CEQA Guidelines, the following factors, among others, should be considered when assessing the significance of impacts from GHG emissions on the environment:

- *The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.*
- *Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.*
- *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 GHG emissions.*

Section 15064.4 of the CEQA Guidelines does not establish a threshold of significance. Lead agencies are called on to establish significance thresholds for their respective jurisdictions in which 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)). Although GHG emissions can be quantified, CARB, SCAQMD, and the City of Los Angeles have yet to adopt project-level numeric significance thresholds for GHG emissions that would be applicable to the Project.

The CEQA Guidelines amendments 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. Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project will comply with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans, and plans or regulations for the reduction of GHG emissions.[76] Essentially, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with program and/or other regulatory schemes to reduce GHG emissions.

In the absence of any applicable adopted numeric threshold, the significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations, and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. For this Project, as a land use development project, the most directly applicable adopted regulatory plan to reduce GHG emissions is the RTP/SCS, which is designed to achieve regional GHG reductions from the land use and transportation sectors as required by SB 375 and the State's long-term climate goals. This analysis also considers consistency with regulations or requirements adopted by the AB 32 *2022 Scoping Plan*, Green New Deal, Mobility Plan, and the Los Angeles Green Building Code all apply to the Project and are all intended to reduce GHG emissions to meet the statewide targets set forth in AB 32 and SB 32. With respect to CEQA Guidelines Appendix G **Threshold (a)** for GHG emissions, in the absence of any adopted, quantitative threshold, the following threshold of significance has been developed for purposes of this analysis:

> If the Project is consistent with the applicable regulatory plans and policies to reduce GHG emissions, then the Project would result in a less-than-significant impact with respect to CEQA Guidelines Appendix G **Threshold (a)** and **Threshold (b)** for GHG emissions.

[76] California Code of Regulations, Title 14, Section 15064(h)(3).

b) Methodology

Amendments to CEQA Guidelines Section 15064.4 were adopted to assist lead agencies in determining the significance of the impacts of GHG emissions. Consistent with existing CEQA practice, CEQA Guidelines Section 15064.4 gives lead agencies the discretion to determine whether to assess those emissions quantitatively or qualitatively. This section recommends certain factors be considered that may be used in the determination of significance (i.e., extent to which the project may increase or reduce GHG emissions compared to the existing environment; whether the project exceeds an applicable significance threshold; and extent to which the project complies with regulations or requirements adopted to implement a plan for the reduction or mitigation of GHGs). CNRA has also clarified that the CEQA Guidelines amendments focus on the effects of GHG emissions as cumulative impacts and that they should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see Section 15064(h)(3)).[77]

As noted above, the methodology for evaluating the Project's impacts related to GHG emissions focuses on its consistency with Statewide, regional, and local plans adopted for the purpose of reducing and/or mitigating GHG emissions. This evaluation of consistency with such plans is the sole basis for determining the significance of the Project's GHG-related impacts on the environment.

Notwithstanding, for informational purposes, the analysis also calculates the amount of GHG emissions that are attributed to the Project using recommended air quality models, as described below. The primary purpose of quantifying the Project's GHG emissions is to satisfy CEQA Guidelines Section 15064.4(a), which calls for a good-faith effort to describe and calculate emissions. The estimated emissions inventory is also used to determine if there would be a reduction in the Project's incremental contribution of GHG emissions as a result of compliance with regulations and requirements adopted to implement plans for the reduction or mitigation of GHG emissions. However, the significance of the Project's GHG emissions impacts is not based on the amount of GHG emissions resulting from the Project.

In summary, as the lead agency, the City has determined that a project's significant impact with regard to climate change be evaluated solely on the basis of consistency with the climate change plans. This approach is aligned with the threshold of significance established by the City for the Project, which is whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions, as noted above. Also as noted above, for informational purposes only, this Draft EIR estimates the quantity of GHG emissions the Project would generate. This estimate informs the public and the decision makers of the extent to which the Project may increase or reduce GHG emissions compared to existing conditions.

[77] See generally California Natural Resources Agency, Final Statement of Reasons for Regulatory Action Amendments to the CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97, December 2009, pp. 11-13, 14, 16; see also Letter from Cynthia Bryant, Director of the Office of Planning and Research to Mike Chrisman, Secretary for Natural Resources, April 13, 2009.

(1) Consistency with Plans

OPR encourages lead agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses. Although the City does not have a programmatic mitigation plan from which to tier, such as a GHG Emissions Reduction Plan or a Climate Action Plan (CAP), the City has a number of initiatives to help reduce GHG emissions. The City's Green New Deal is not an adopted plan or directly applicable to private development projects. However, the City's Green New Deal, a mayoral initiative, includes short-term and long-term aspirations pertaining to climate change, and this analysis addresses consistency with these strategies and goals. In addition, the California CAT Report provides recommendations for specific emission reduction strategies for reducing GHG emissions and reaching the targets established in AB 32 and Executive Order S-3-05. On a Statewide level, the Scoping Plan and subsequent updates provide measures to achieve AB 32 and SB 32 targets. On a regional level, the SCAG 2020-2045 RTP/SCS contains measures to achieve VMT reductions required under SB 375.

Appendix D, Local Actions, of the 2022 Scoping Plan includes "recommendations intended to build momentum for local government actions that align with the State's climate goals, with a focus on local GHG reduction strategies (commonly referred to as climate action planning) and approval of new land use development projects, including through environmental review under the CEQA."[78]

The State encourages local governments to adopt a CEQA-qualified CAP addressing the three priority areas (transportation electrification, VMT reduction, and building decarbonization). However, the State recognizes that almost 50 percent of jurisdictions do not have an adopted CAP, among other reasons because they are costly, requiring technical expertise, staffing, funding. Additionally, CAPs need to be monitored and updated as State targets change and new data are available. Jurisdictions that wish to take meaningful climate action (such as preparing a non-CEQA-qualified CAP or as individual measures) aligned with the State's climate goals in the absence of a CEQA-qualified CAP are advised to look to the three priority areas when developing local climate plans, measures, policies, and actions: (transportation electrification, VMT reduction, and building decarbonization). "By prioritizing climate action in these three priority areas, local governments can address the largest sources of GHGs within their jurisdiction."[79]

The State also recognizes in Appendix D, Local Actions, of the Scoping Plan that each community or local area has distinctive situations and local jurisdictions must balance the urgent need for housing[80] while demonstrating that a Project is in alignment with the State's Climate Goals. The State calls for the climate crisis and the housing crisis to be confronted simultaneously. Jurisdictions should avoid creating targets that are impossible to meet as a basis to determine significance. Ultimately, targets that make it more difficult to achieve Statewide goals by prohibiting or complicating projects that are needed to support the State's climate goals, such as

78 CARB. 2022 Scoping Plan, Appendix D, page 20.
79 CARB. 2022 Scoping Plan, Appendix D, page 20.
80 The State recognizes the need for 2.5 million housing units over the next eight years, with one million being affordable units. CARB. 2022 Scoping Plan, Appendix D, page 20.

infill development, low-income housing or solar arrays, are not consistent with the State's goals. The State also recognizes the lead agencies' discretion to develop evidence-based approaches for determining whether a project would have a potentially significant impact on GHG emissions.

Thus, if the Project is designed in accordance with these plans, policies, regulations, and requirements, the Project would result in a less-than-significant impact because it would be consistent with the overarching state, regional, and local plans for GHG reduction.

(2) Quantification of Emissions

In view of the above considerations, this Draft EIR also quantifies the Project's total annual GHG emissions for informational purposes, accounting for the GHG emission reduction features that would be incorporated into the Project's design. For purposes of this GHG analysis, no credit is taken for the operational (other than mobile source) emissions associated with the existing industrial warehouse use.

(3) Estimation of GHG Emissions

The Project and the Flexibility Option would generate GHG emissions from area sources, energy usage, mobile sources, waste, water, and construction equipment.

Moreover, the construction schedule would remain the same under the Flexibility Option. A detailed description of the calculations used in this analysis are provided in **Appendix B and E** of this Draft EIR. VMT emissions were based on VMT data from the Traffic Study found in **Appendix L.1** of this Draft EIR. CalEEMod Version 2022.1 was used to calculate the GHG emissions from the Project. The CalEEMod calculations are based on the year 2025. The CalEEMod Annual Outputs for the Project are available in **Appendix E** of this Draft EIR. Each source of GHG emissions is described in greater detail below.

(a) Construction

Construction-related GHG emissions were estimated using CalEEMod and were based on a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. Construction GHG emissions include emissions from construction equipment, construction vehicles, worker trips and deliveries.

Pursuant to SCAQMD guidance regarding the evaluation of construction-related GHG emissions, the total GHG from Project construction are amortized (i.e., average annually) over a 30-year "life time" of the Project. The amortized amount of construction related GHG emissions are added to the Project's operational emissions to determine an annual rate of GHG emissions resulting from the Project. A more detailed discussion of the assumptions used to calculate the Project's construction emissions, including descriptions of the Project's construction phasing and equipment list, are available in the CalEEMod Outputs in **Appendix E** of this Draft EIR.

(b) Operational

The Project's operational GHG emissions were also estimated using CalEEMod and are detailed in the CalEEMod Output sheets provided in **Appendix E** of this Draft EIR. CalEEMod was used to calculate Project-related annual GHG emissions from area source emissions, energy emissions, mobile source emissions, stationary source emissions, water use, and solid waste generation. The methodology applied to CalEEMod to estimate the quantity of GHG from each source is described below.

(i) Area Sources

Per the CAPCOA Appendix A Calculation Details for CalEEMod, area sources include emissions from consumer products, landscape equipment and architectural coatings. Landscape maintenance includes fuel combustion emissions from equipment, such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors.

(ii) Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site.

(iii) Mobile Sources

Mobile sources include emissions from the vehicle miles generated from the Project. The emissions from the vehicle trips associated with the Project have been analyzed using the daily vehicle trips and VMT calculated in the Traffic Study, included as **Appendix L.1** of this Draft EIR.

(iv) Stationary Sources

Stationary sources include operation of proposed emergency generators during routine maintenance/testing. Emissions associated with use of emergency generators were calculated using CalEEMod. The emissions are based on the horsepower factor of the diesel generator and the number of hours operated per year for testing purposes.

(v) Waste

Waste includes the GHG emissions generated from the processing of solid waste from the Project, as well as the GHG emissions from the waste once it is interred into a landfill and reductions associated with diversion of waste from landfills through recycling, green waste processing and composting.

(vi) Water

Water includes the GHG emissions associated with the energy used to treat, transport, and filter the water used by the Project and wastewater generated by the Project.

c) Project Design Features

No Project Design Features related to GHG emissions are included.

d) Impact Analysis

As compared to the Project, the Flexibility Option would change a portion of the use of the second floor from residential to commercial and would not otherwise change the Project's land uses or size. The overall commercial square footage provided would be increased by 17,765 square feet to 64,313 square feet, and, in turn, there would be a reduction in the number of live/work units from 220 to 200 units. The overall building parameters would remain unchanged and the design, configuration, and operation of the Flexibility Option would be comparable to the Project. In the analysis of Project impacts presented below, where similarity in land uses and operational characteristics between the Project and the Flexibility Option would be essentially the same, the conclusions regarding the impact analysis and impact significance determination presented below for the Project would be the same under the Flexibility Option. For those thresholds where numerical differences exist because of the differences in project parameters between the Project and Flexibility Option, the analysis is presented separately.

Threshold (a): Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Threshold (b): Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

(1) Consistency with Applicable GHG Reduction Plans and Policies

The following describes the Project's consistency with applicable regulatory plans and policies intended to reduce GHG emissions, including the 2022 Scoping Plan, SCAG's 2020-2045 RTP/SCS, and L.A.'s Green New Deal. As shown below, the Project would be consistent with the applicable GHG reduction plans, policies, and regulations.

(a) 2022 Scoping Plan

As discussed above, jurisdictions that want to take meaningful climate action (such as preparing a non-CEQA-qualified CAP or as individual measures) aligned with the State's climate goals in the absence of a CEQA-qualified CAP should also look to the three priority areas (transportation electrification, VMT reduction, and building decarbonization). To assist local jurisdictions, the 2022 Scoping Plan presents a non-exhaustive list of impactful GHG reduction strategies that can be implemented by local governments within the three priority areas (Priority GHG Reduction Strategies for Local Government Climate Action Priority Areas).[81] A detailed assessment of goals,

[81] 2022 Scoping Plan Update, Table 1 of Appendix D, November 2022.

plans, and policies implemented by the City, which would support the GHG reduction strategies in the three priority areas, is provided below. In addition, further details are provided regarding the correlation between these reduction strategies and applicable actions included in Table 2-1 of the Scoping Plan (Actions for the Scoping Plan Scenario).[82]

(i) Transportation Electrification

The priority GHG reduction strategies for local government climate action related to transportation electrification are discussed below and would support the Scoping Plan action to have 100 percent of all new passenger vehicles to be zero-emission by 2035.[83]

- **Convert local government fleets to zero-emission vehicles (ZEV)**

CARB approved the Advanced Clean Cars II rule, which codifies Executive Order N-79-20 and requires 100 percent of new cars and light trucks sold in California be zero-emission vehicles by 2035. The State has also adopted AB 2127, which requires the CEC to analyze and examine charging needs to support California's EVs in 2030. This report would help decision-makers allocate resources to install new EV chargers where they are needed most.

L.A.'s Green New Deal identifies a number of measures to reduce VMT and associated GHG emissions. Such measures that would support the local reduction strategy include converting all City fleet vehicles to zero emission where technically feasible by 2028. Starting in 2021, all vehicle procurement followed a "zero emission first" policy for City fleets. The Green New Deal also establishes a target to increase the percentage of zero emission vehicles to 25 percent by 2025, 80 percent by 2035 and 100 percent by 2050. In order to achieve this goal, the City is planning to build 20 fast charging plazas throughout the City. The City also is also planning on installing 28,000 publicly-available chargers by 2028 to encourage use of ZEVs.

The City's goals of converting the municipal fleet to zero emissions and installation of EV chargers throughout the City would be consistent with the Scoping Plan goals of transitioning to EVs. Although this measure mainly applies to City fleets, the Project and the Flexibility Option would not conflict with these goals by installing EV supply equipment (EVSE) in at least 10 percent of total proposed parking spaces, and 30 percent of the total proposed parking spaces will be capable of supporting future EVSE. Installation of additional EVSE would encourage use of EVs.

- **Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as building standards that exceed state building codes, permit streamlining, infrastructure siting, consumer education, preferential parking policies, and ZEV readiness plans)**

The State has adopted AB 1236 and AB 970 which require cities to adopt streamline permitting procedures for EV charging stations. As a result, the City updated Section IX of the LAMC, which requires most new construction to designate 30 percent of new parking spaces as capable of supporting future EVSE. This would exceed the 2020 CALGreen Code requirements of 20

[82] 2022 Scoping Plan Update, Table 2-1, page 72, November 2022.
[83] 2022 Scoping Plan Update, Table 2-1, page 72, November 2022.

percent of new parking spaces as EV capable. The ordinance (Ordinance No. 186,485 also requires new construction to install EVSE at 10 percent of total parking spaces. This requirement also exceeds the 2022 CALGreen 2022 requirements of installing EVSE for 25 percent of EV capable parking spaces (i.e., 30 percent), which is five percent of total parking spaces. The City has also implemented programs to increase the amount of EVSE on City streets, EV carshare, and incentive programs for apartments to be retrofitted with EVSE.

The City's goals of installing EVSE throughout the City would be consistent with the Scoping Plan goals of transitioning to EVs. In addition, the Project and the Flexibility Option would comply with the LAMC by installing EVSE in at least 10 percent of total proposed parking spaces, and 30 percent of the total proposed parking spaces will be capable of supporting future EVSE, which would exceed the 2022 CALGreen Code requirement.

(ii) VMT Reduction

The priority GHG reduction strategies for local government climate action related to VMT reduction are discussed below and would support the Scoping Plan action to reduce VMT per capita 25 percent below 2019 levels by 2030 and 30 percent below 2019 levels by 2045.

- **Reduce or eliminate minimum parking standards in new developments**
- **Implement parking pricing or transportation demand management pricing strategies**

The Mobility Plan, which is the Transportation Element of the City's General Plan, contains measures and programs related to VMT reduction throughout the City. With regard to parking standards, the implementation of Mobility Plan Programs and AB 2097[84] reduce or eliminate parking requirements for certain types of developments near transit (within half a mile). These reduction strategies and TDM programs would serve to reduce minimum parking standards and reduce vehicle trips.

The Project would implement a TDM Program (Project Design Feature PDF TR-2), which includes reduced parking supply and bike parking to support alternative modes of transportation. Consistent with the methodology of the LADOT VMT Calculator, these measures would reduce VMT associated with the Project and Flexibility Option. Therefore, the Project and the Flexibility Option would be consistent and not conflict with this reduction strategy to reduce parking standards.

- **Implement Complete Streets policies and investments, consistent with general plan circulation element requirements**

[84] AB 2097 is a California law that prohibits public agencies or cities from imposing a minimum automobile parking requirement on most development projects located within a half-mile radius of a major transit stop. In Los Angeles, City Planning is responsible for overseeing the implementation of AB 2097, in accordance with State law. https://planning.lacity.org/project-review/assembly-bill-2097. Accessed November 2023.

Mobility Plan 2035 established a "Complete Streets" planning framework, which resulted in the City of Los Angeles Complete Streets Design Guide (Design Guide) in 2015, consistent with California's Complete Streets Act of 2008. A supplemental update to the Design Guide was adopted in 2020.

The Design Guide provides a number of measures to increase public access to electric shuttles, car-sharing, and walking. The Design Guide establishes guidelines for establishing on-street parking for car-sharing. The City has also established BlueLA, which is a car-sharing network consisting of more than 100 electric vehicles located throughout the City. In addition, under the Green New Deal, the City is planning to install 28,000 publicly-available chargers by 2028 and introduce 135 new electric DASH buses.

This reduction strategy mainly applies to City traffic circulation. However, as discussed in **Section IV.K, Transportation,** of this Draft EIR, the Project and the Flexibility Option are proposing to implement a modified street classification, the Living Streets initiative. The Living Street initiative is the LA Green Plan/ClimateLA's effort to create safe streets for all uses through increased sidewalk widths, adding sidewalk bump-outs, landscaping, and street furniture, and narrowed travel lanes to slow vehicles and create a pedestrian network of improvements to encourage alternative modes of transportation. The Project would include sidewalk bump-outs, preserve on-street parking in certain locations, include streetscape landscaping, and reduce travel lane widths in order to accommodate increased sidewalk width. Therefore, the Project and the Flexibility Option would not conflict with implementation of Complete Streets policies.

- **Increase access to public transit by increasing density of development near transit, improving transit service by increasing service frequency, creating bus priority lanes, reducing or eliminating fares, microtransit, etc.**

- **Increase public access to clean mobility options by planning for and investing in electric shuttles, bike share, car share, and walking**

- **Amend zoning or development codes to enable mixed-use, walkable, transit-oriented, and compact infill development (such as increasing the allowable density of a neighborhood)**

- **Preserve natural and working lands by implementing land use policies that guide development toward infill areas and do not convert "greenfield" land to urban uses (e.g., green belts, strategic conservation easements)**

These reduction strategies are supported through implementation of SB 375, which requires integration of planning processes for transportation, land-use, and housing and generally encourages jobs/housing proximity, promote transit-oriented development (TOD), and encourages high-density residential/commercial development along transit corridors. To implement SB 375 and reduce GHG emissions by correlating land use and transportation planning, SCAG adopted the 2020–2045 RTP/SCS. The 2020–2045 RTP/SCS' "Core Vision" prioritizes the maintenance and management of the region's transportation network, expanding mobility choices by co-locating housing, jobs, and transit, and increasing investment in transit and

complete streets. Please refer below for additional discussion of consistency with the 2020-2045 RTP/SCS.

On a local level, the City has developed the Design Guide, which provides a number of reduction strategies to increase public access to electric shuttles, car-sharing, and walking; continues to build out networks in the Mobility Plan for pedestrians, bicyclists, and transit users; has implemented an EV car-sharing network; and is working toward increasing publicly-available EVSE and introducing new electric DASH buses.

The Project represents an infill development within an existing urbanized area that would concentrate new development consistent with the overall growth pattern encouraged in the 2020-2045 RTP/SCS. The Project's convenient access to public transit and opportunities for walking and biking would result in a reduction of vehicle trips, VMT, and GHG emissions. Specifically, the Project Site is located in a transit-rich neighborhood served by the Los Angeles County Metropolitan Transportation Authority (Metro) and LADOT bus lines. In addition, the Project Site's proximity to a variety of commercial uses and services would encourage employees of the Project Site to walk to nearby destinations to meet their shopping needs, thereby reducing VMT and GHG emissions. Therefore, the Project and the Flexibility Option would be consistent with these reduction strategies.

In addition, California continues to experience a severe housing shortage. The State must plan for more than 2.5 million residential units over the next eight years, and no less than one million of those residential units must be affordable to lower-income households.[85] This represents more than double the housing planned for during the last eight years.[86] The housing crisis and the climate crisis must be confronted simultaneously, and it is possible to address the housing crisis in a manner that supports the State's climate and regional air quality goals.[87] CAPCOA's Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (CAPCOA's Handbook) provides a VMT reduction measurement for incorporation of low-income housing. Measure T-4 (Integrate Affordable and Below Market Rate Housing) in CAPCOA's Handbook shows a 28.6-percent reduction in VMT for low-income units in comparison to market rate units.

As discussed above, the Housing Element provides planning guidance in meeting housing needs identified in the SCAG RHNA. The current RHNA goal for affordable housing within the City is approximately 40 percent of new construction. However, the City's projections show affordable housing comprising 20 percent of new construction, which falls short of the 40-percent RHNA goal. In order to address this shortfall, the Housing Element identifies measures to encourage development of affordable housing, such as revising density bonuses for affordable housing;

85 California Department of Housing and Community Development. 2022. Statewide Housing Plan. Available at www.hcd.ca.gov/docs/statewide-housing-plan.pdf. Accessed June 2, 2023.

86 California Department of Housing and Community Development. 2022. Statewide Housing Plan. Available at www.hcd.ca.gov/docs/statewide-housing-plan.pdf. Accessed June 2, 2023.

87 Elkind, E. N., Galante, C., Decker, N., Chapple, K., Martin, A., & Hanson, M. 2017. Right Type, Right Place: Assessing the Environmental and Economic Impacts of Infill Residential Development through 2030. Available at https://ternercenter.berkeley.edu/research-and-policy/right-type-right-place/. Accessed June 2, 2023.

identifying locations that are ideal for funding programs to meet low-income housing goals; and rezoning areas to encourage low-income housing. The Housing Element estimates that implementation of these measures would increase housing production at all income ranges compared to previous cycles.

The City's 40-percent goal of affordable housing for new construction is applicable on a Citywide basis and not applicable to an individual project. The Planning Department Housing Division found based, on market studies and experiences of other agencies, that mandating 40-percent affordable housing on individual projects is likely to reduce overall housing production, including low income housing, in the City and would be contrary to City and State policies. Pushing more housing outside of the City would be contrary to the Scoping Plan, as infill housing production in the City, which is a highly urbanized city with billions in transit infrastructure, lower average VMT than the SCAG region, is called for in the 2022 Scoping Plan.

The Project would provide a mixed-use development in proximity to transit opportunities that could increase patronage of alternative-fueled buses. Specifically, the Project Site is located near the intersections of Alameda Street and 4th Street and Alameda Street and 6th Street. 4th and 6th Streets are major transportation corridors that are served by multiple Metro, LADOT, and Montebello Bus Line (MBL) bus lines. Local and rapid Metro bus lines also run in the Project Site vicinity on Central Avenue, Alameda Street, and Palmetto Street. LADOT provides DASH Downtown Los Angeles Route A, the nearest stop of which is located at 4th Place and Hewitt Street, approximately 1,100 feet to the north of the Project Site. Additionally, the Metro L Line Little Tokyo/Arts District Station is located approximately 0.6 mile to the north of the Project Site. Furthermore, the Project and the Flexibility Option would comply with the LAMC by installing EVSE in at least 10 percent of total proposed parking spaces, and 30 percent of the total proposed parking spaces will be capable of supporting future EVSE. Furthermore, the Project and the Flexibility Option would be compliant with the Los Angeles Green Building Code and California Title 24 requirements. The Project would also comply with code requirements related to include energy-saving compliance features that would reduce emissions, air-tight and insulated building envelope[88], energy-efficient windows and elevator, Energy Star appliances, and energy-efficient lighting.

(iii) Building Decarbonization

The priority GHG reduction strategies for local government climate action related to electrification are discussed below and would support the Scoping Plan actions regarding meeting increased demand for electrification without new fossil gas-fire resources to support all electric appliances beginning in 2026 (residential) and 2029 (commercial).[89]

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88 Airtight construction, or airtightness, means that there are no unintended gaps in the building envelope that allow air to leak in or out of the building. This means there are no cold drafts coming in through the building envelope in winter and no air conditioning leaks to the outside in summer. This improves the efficiency and effectiveness of HVAC systems and reduces energy consumption, thereby reducing GHG emissions from electric power generation.

89 2022 Scoping Plan Update, Table 2-1, page 72, November 2022.

- **Adopt all-electric new construction reach codes for residential and commercial uses**

California's transition away from fossil fuel–based energy sources will bring the Project's GHG emissions associated with building energy use down to zero as the City's electric supply becomes 100 percent carbon free. California has committed to achieving this goal by 2045 through SB 100, the 100 Percent Clean Energy Act of 2018. SB 100 strengthened the State's RPS by requiring that 60 percent of all electricity provided to retail users in California come from renewable sources by 2030 and that 100 percent come from carbon-free sources by 2045. The land use sector will benefit from the RPS because the electricity used in buildings will be increasingly carbon-free, but implementation does not depend (directly, at least) on how buildings are designed and built.

The City has updated the LAMC with requirements for all new buildings, with some exceptions to be all-electric, which will reduce GHG emissions related to natural gas combustion. Space heating, water heating, and cooking for non-restaurant uses would be required to be powered by electricity. In future years, the Los Angeles Department of Water and Power (LADWP) will be required to increase the amount of renewable energy in the power mix to comply with SB 100 requirements. The combination of the all-electric LAMC regulations and increasing availability of renewable energy will serve to reduce GHG emissions from sources traditionally powered by natural gas.

The Project would be required to comply with the City's All-Electric Buildings Ordinance and would not include natural gas uses in its residential and commercial uses, other than restaurant uses, which are exempt from the LAMC provisions, but would only consist of a small portion of the total Project square footage. Therefore, the Project and the Flexibility Option would be consistent and not conflict with the LAMC.

- **Adopt policies and incentive programs to implement energy efficiency retrofits for existing buildings, such as weatherization, lighting upgrades, and replacing energy-intensive appliances and equipment with more efficient systems (such as Energy Star-rated equipment and equipment controllers)**

This reduction strategy would support the Scoping Plan action regarding electrification of appliances in existing residential buildings.[90] LADWP has established rebate programs to promote use of energy-efficient products and home upgrades. Under the LADWP's Consumer Rebate Program (CRP), residential customers would receive rebates for energy-efficient upgrades, such as Cool Roofs, Energy Star Windows, HVAC upgrades, pool pumps, and insulation upgrades. Such upgrades would serve to reduce wasteful energy and water usage and associated GHG emissions.

The Project and the Flexibility Option would not involve retrofit of existing buildings and would be completely new construction, which would be required to utilize energy-efficient HVAC equipment with low GHG emission rates and incorporate energy-saving technologies and appliances.

[90] 2022 Scoping Plan Update, Table 2-1, page 72, November 2022.

Therefore, the Project and the Flexibility Option would be consistent and not conflict with policies to implement energy-efficiency retrofits.

(b) 2020-2045 RTP/SCS

The purpose of the SCAG 2020-2045 RTP/SCS is to achieve the regional per capita GHG reduction targets for the passenger vehicle and light-duty truck sector established by CARB pursuant to SB 375.[91] SB 375 requires that Metropolitan Planning Organizations to include a SCS element as part of their RTP updates, with the purpose of identifying policies and strategies to reduce per capita passenger vehicle-generated GHG emissions. The SCS is required to identify the general location of land uses, residential densities, and building intensities within the region; identify areas within the region sufficient to house all the population of the region; identify areas within the region sufficient to house an eight-year projection of the regional housing need; identify a transportation network to service the regional transportation needs; gather and consider the best practically available scientific information regarding resources areas and farmland in the region; consider the state housing goals; set forth a forecasted development pattern for the region; and allow the regional transportation plan to comply with the CAA, of which, when integrated with the transportation network, and other transportation measures and policies will reduce the GHG from automobiles and light duty trucks to achieve, if there is a reasonable way to do so, the GHG emission reduction targets approved by CARB.[92] The 2020-2045 RTP/SCS seeks "improved mobility, accessibility, reliability and safety that improve the existing transportation system."[93] The 2020-2045 RTP/SCS seeks to implement "infill and redevelopment of underutilized land to accommodate new growth, increase amenities and connectivity in existing neighborhoods."[94] As part of the 2020-2045 RTP/SCS, "transportation network improvements would be included, and more compact, infill, walkable and mixed-use development strategies to accommodate new region's growth would be encouraged to accommodate increases in population, households, employment, and travel demand."[95]

At the regional level, the 2020-2045 RTP/SCS defines strategies for reducing GHGs. In order to assess the Project's potential to conflict with the 2020-2045 RTP/SCS, this section analyzes the Project's land use profile for consistency with those in the SCS. Generally, projects are considered consistent with the provisions and general policies of applicable City and regional land use plans and regulations, such as SCAG's Sustainable Communities Strategy, if they are compatible with the general intent of the plans and would not preclude the attainment of their primary goals.

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91 Southern California Association of Government, 2020-2045, Regional Transportation Plan/Sustainable Communities Strategy, September 2020, page 119.

92 Southern California Association of Government, Environmental Impact Report – Regional Transportation Plan/Sustainable Communities Strategy, May 2020, Executive Summary, page ES-1.

93 Southern California Association of Government, 2020-2045, Regional Transportation Plan/Sustainable Communities Strategy, September 2020, page 10.

94 Southern California Association of Government, 2020-2045, Regional Transportation Plan/Sustainable Communities Strategy, September 2020, page 49.

95 Southern California Association of Government, Environmental Impact Report – Regional Transportation Plan/Sustainable Communities Strategy, May 2020, page 3.8-62.

Consistent with SCAG's 2020-2045 RTP/SCS alignment of transportation, land use, and housing strategies, the Project would accommodate increases in population, households, employment, and travel demand. As discussed below, the Project Site is an infill site close to jobs, housing, shopping, and entertainment uses and in close proximity to existing public transit stops, which would result in reduced VMT. The 2020-2045 RTP/SCS projects that these urban center/infill areas, while comprising only three percent of land area in the region make up 51 percent of future household growth and 60 percent of future job growth.

The Project would also be consistent with the following key GHG reduction strategies in SCAG's 2020-2045 RTP/SCS, which are based on changing the region's land use and travel patterns:

- Compact growth in areas accessible to transit;
- Construction of an up to 249,758-square-foot mixed-use building, including up to 220 live/work units in an urban center on an infill site, with up to 46,548 square feet of art-production and neighborhood-serving retail/commercial space;
- Jobs and housing closer to transit;
- New housing and job growth focused in High Quality Transit Areas (HQTAs), which are defined by the RTP/SCS as generally walkable transit villages or corridors that are within 0.5 mile of a well-serviced transit stop or a transit corridor with 15-minute or less service frequency during peak commute hours; and
- Biking and walking infrastructure to improve active transportation options and transit access.

Further, the vertical integration of land uses on the Project Site would produce substantial reductions in auto travel to and from the Project Site by various modes of transportation that would help the region accommodate growth and promote public transit ridership that reduces GHG emissions and per capita emissions consistent with the 2020-2045 RTP/SCS. Additionally, the inclusion of EVSE infrastructure (pursuant to the Los Angeles Green Building Code) would support the integration of electric ZEV into the vehicle fleet.

Table IV.D-7, **Project and Flexibility Option Consistency with Applicable Goals of the 2020-2045 RTP/SCS**, contains a list of GHG-reducing measures and strategies applicable to the Project. The analysis describes the consistency of the Project with the measures and strategies outlined in the 2020-2045 RTP/SCS that work to reduce GHG emissions.

Table IV.D-7
Project and Flexibility Option Consistency with Applicable Goals of 2020-2045 RTP/SCS

Goal	Project Consistency
Improve mobility, accessibility, reliability, and travel safety for people and goods.	**No Conflict.** The Project and Flexibility Option are infill developments within the urbanized Arts District of Downtown Los Angeles. As with other communities within the City, the Project Site is surrounded by a mature network of roads and freeways that provide local and regional access. The Project Site is also located in proximity to several public transit opportunities and major employment centers. The availability and accessibility of public transit in the Project area is evidenced by the Project Site's location within a designated HQTA. The Project is located near the intersections of Alameda Street and 4th Street and Alameda Street and 6th Street. 4th and 6th Streets are major transportation corridors that are served by multiple Metro, LADOT, and Montebello Bus lines. Local and rapid Metro bus lines also run in the Project vicinity on Central Avenue, Alameda Street, and Palmetto Street. LADOT provides DASH Downtown Los Angeles Route A, the nearest stop of which is located at 4th Place and Hewitt Street, approximately 1,100 feet to the north of the Project Site. Additionally, the Metro L Line Little Tokyo/Arts District Station is located approximately 0.6 mile to the north of the Project Site. Given the Project Site's location in proximity to a variety of transportation options, employment centers and community resources, and the infill nature of the Project Site, the Project would improve the potential for mobility and accessibility.
Increase person and goods movement and travel choices within the transportation system.	**No Conflict.** The Project and Flexibility Option would encourage land use and growth patterns that facilitate transit by being a compact, infill development near several public transit options, including the Metro L Line Little Tokyo/Arts District Station and multiple bus lines, including local and rapid lines, that run along 6th Street, Central Avenue, and 7th Street. In addition, the Project would encourage active transportation by including 180 bicycle parking stalls. The Project would also improve walkability in the immediate vicinity of the Project Site by replacing vacant warehouse uses and a surface parking lot with a mixed-use development that would activate the street by introducing commercial (restaurant and retail) options.
Reduce greenhouse gas emissions and improve air quality.	**No Conflict.** In addition to adhering to smart growth principles of locating infill development adjacent to existing employment centers and public transportation options, the Project and Flexibility Option would incorporate a wide range of building technologies, including water-conservation features, such as high-efficiency toilet and urinals, low-flow showerheads and private and commercial faucets, draught-tolerant and native plants, drip/subsurface, zoned irrigation with

Table IV.D-7
Project and Flexibility Option Consistency with Applicable Goals of 2020-2045 RTP/SCS

Goal	Project Consistency
	weather-based irrigation controllers, water-conserving turf, high-efficiency residential and commercial clothes washers, water-saving pool filters, and leak detection systems for pools and jacuzzis, that would reduce GHG emissions by saving energy (which would also reduce air emissions associated with electricity generation), reducing water consumption, making use of recycled materials, and producing better indoor and outdoor environmental quality. The Project's energy efficiency features and location near major transit facilities, which designates it in a TPA and an HQTA, could help reduce the energy and emission footprint of the Project and the per capita GHG emissions of the residents and visitors from private automobile travel. Therefore, the Project would be consistent with this policy.
Encourage development of diverse housing types in areas that are supported by multiple transportation options.	**No Conflict.** The Project and Flexibility Option would include up to 220 and 200 new live/work residences, respectively, that would be added to the Citywide housing supply. Furthermore, in recognition of the need for affordable housing within the Central City North Community Plan area, the Project would set aside 11 percent of its units as deed-restricted for Very Low Income households. The proposed commercial land uses would provide amenities, jobs, and services to the Project's future residents, workers, and visitors, as well as the existing community. The Project Site is accessible to the regional and local bus transit systems.
Source: Southern California Association of Governments, 2020-2045 RTP/SCS, September 2020; EcoTierra Consulting, 2022.	

As demonstrated above, the Project would be consistent with the applicable goals, including those pertaining to reductions in GHG emissions, in the 2020-2045 RTP/SCS.

(c) L.A.'s Green New Deal

While not a plan adopted solely to reduce GHG emissions, within L.A.'s Green New Deal, climate change mitigation is one of eight explicit benefits that help define its strategies and goals. **Table IV.D-8, Project and Flexibility Option Consistency with the Green New Deal**, contains a list of GHG emission-reducing strategies applicable to the Project.

Table IV.D-8
Project and Flexibility Option Consistency with the Green New Deal

Targets	Project Consistency
Local Water. 22.5% by 2025; and 25% by 2035.	**No Conflict**. The Project and the Flexibility Option would be consistent with the LAMC to reduce water consumption by 20 percent. The Project and the Flexibility Option includes low-water use plumbing fixtures, low-water use

Table IV.D-8
Project and Flexibility Option Consistency with the Green New Deal

Targets	Project Consistency
	landscaping, and water-wise irrigation. The Project and the Flexibility Option are required to comply with the CALGreen Code, which mandates a 20-percent reduction in indoor water use.
Solar Power. Increase cumulative total megawatts of local solar photovoltaic power to between 900-1,500 megawatts by 2025 and 1,500 to 1,800 megawatts by 2035 as well as increasing the cumulative total megawatts of energy storage capacity to at least 1,654 to 1,750 megawatts by 2025.	**No Conflict**. Building rooftop areas without landscaping, pool, open space/terrace or other improvements will be constructed as solar-ready for the future installation of on-site solar photovoltaic (PV) or solar water heating (SWH) systems as required by the 2022 Title 24 Building Energy Efficiency Standards or applicable version at the time of building permit issuance.
Energy Efficient Buildings. Reduce energy use per square foot below 2013 baseline levels for all building types by at least 14% by 2025 and 30% by 2035.	**No Conflict**. The Project and the Flexibility Option would be designed to incorporate energy-efficient features and components that meet or exceed the 2022 Title 24 Building Energy Efficiency Standards, CALGreen Code, , and Los Angeles Green Building Code (see also **Section IV.N., Energy,** of this Draft EIR).
Carbon and Climate Leadership. Reduce GHG emissions below 1990 baseline by at least 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050. Improve GHG efficiency of the City from 2009 levels by 55 percent by 2025 and 75 percent by 2035.	**No Conflict.** The Project and the Flexibility Option would be designed to incorporate energy- and water-efficient designs that meet or exceed the 2022 Title 24 Building Energy Efficiency Standards and CALGreen Code. The Project and the Flexibility Option would comply with LAMC requirements to reduce Project-related GHG emissions. Some of these measures include the use of an air-tight and insulated building envelope, energy-efficient windows and elevator, Energy Star appliances, and energy-efficient lighting. The Project Site is an "infill site" located within a TPA and an HQTA due to its proximity to a "major transit stop" at the intersections of E. 6th Street and Alameda Street and E. 6th Street and Central Avenue, both located approximately 0.25 mile from the Project Site and are utilized by bus routes with 6- to 15-minute frequency in the AM peak period and 4- to 10-minute frequency in the PM peak period. The Project and the Flexibility Option include pedestrian access points directly to sidewalks on the adjacent streets, including E. 5th Street and Seaton Street. Specifically, walk-in entrances are proposed via E. 5th Street and Seaton Street. In addition, two publicly-accessible pedestrian paseos would provide connectivity between the buildings' frontages. All building structures would meet or exceed 2022 Title 24, Part 6 Standards and meet CalGreen Building Code Standards; all faucets, toilets and showers installed in the proposed structures would utilize low-flow fixtures that would reduce indoor water demand by 20 percent per the CALGreen Code. The Project and the Flexibility Option would use water-efficient irrigation systems and implement recycling programs that reduce waste to landfills by a minimum of 75 percent (per AB 341).

Table IV.D-8
Project and Flexibility Option Consistency with the Green New Deal

Targets	Project Consistency
Waste and Landfills. Increase land fill diversion rates to at least 90 percent by 2025 and 95 percent by 2035, as well as increasing proportion of waste products and recyclable commodities productively reused and repurposed within the County of Los Angeles to at least 25 percent by 2025 and 50 percent by 2035.	**No Conflict**. The Project and the Flexibility Option would be required to implement recycling programs that reduce waste to landfills by a minimum of 75 percent (per AB 341). The Project and the Flexibility Option would be served by a solid waste collection and recycling service that may include mixed waste processing and that yields waste diversion results comparable to source separation and consistent with Citywide recycling targets. The Project and the Flexibility Option would also comply with the City's Space Allocation Ordinance (No. 171,687), which requires that developments include a recycling area or a room of a specified size on the Project Site.
Housing and Development. Increase cumulative new housing unit construction to 150k by 2025, and 275k by 2035. Ensure proportion of new housing units built within 1,500 feet of transit is at least 57 percent by 2025 and 65 percent by 2035.	**No Conflict.** The Project includes the development of a 249,758-square-foot mixed-use building, including up to 220 live/work units, approximately 22,725 square feet of open space for residents, up to 46,548 square feet of art-production and commercial/retail space, and associated parking facilities. Under the Flexibility Option, the proposed land uses and size under the Project would remain the same; however, the commercial square footage provided would be increased to 64,313 square feet within the same building parameters, and, in turn, there would be a reduction in the overall number of live/work units for a total of 200 units.
Mobility and Transit. Reduce daily VMT per capita by at least 5 percent by 2025 and 10 percent by 2035. Increase the percentage of all trips made by walking, biking, or transit to at least 35 percent by 2025 and 50 percent by 2035.	**No Conflict.** The Project and Flexibility Option would encourage land use and growth patterns that would facilitate transit use and reduce VMT by being a compact, infill development near several public transit options, including the Metro L Line Little Tokyo/Arts District Station and multiple bus lines, including local and rapid lines, that run along 6th Street, Central Avenue, and 7th Street. In addition, the Project would encourage active transportation by including 180 bicycle parking stalls. The Project would also improve walkability in the immediate vicinity of the Project Site by replacing vacant warehouse uses and a surface parking lot with a mixed-use development that would activate the street by introducing commercial (restaurant and retail) options.
Air Quality. Increase the percentage of electric and zero emissions vehicles in the city to 10 percent by 2025 and 25 percent by 2035 as well as increasing the percentage of port-related goods movement trips that use zero-emissions technology to at least 15 percent in 2025 and 25 percent in 2035.	**No Conflict**. The Project and the Flexibility Option would comply with the LAMC by installing EVSE in at least 10 percent of total proposed parking spaces, and 30 percent of the total proposed parking spaces will be capable of supporting future EVSE, which would exceed the 2022 CALGreen Code requirement. Accordingly, the Project and the Flexibility Option would encourage the use of EV and ZEV and contribute to the increase in percentage of their use in the City.

1 Unless otherwise stated, "Project" refers to both the Project and the Flexibility Option.
Note: This analysis focuses on the Sustainable City pLAn targets most applicable to the Project.
Source: City of Los Angles Sustainable City pLAn, April 2015 and L.A.'s Green New Deal Sustainable City pLAn 2019.

L.A.'s Green New Deal provides information as to what the City will do with buildings and infrastructure in its control and provides specific targets related to housing and development, as well as mobility and transit, including the reduction of VMT per capita by 5 percent by 2025, and increasing trips made by walking, biking or transit by at least 35 percent by 2025, and has established targets, such as 100 percent renewable energy by 2045, diversion of 100 percent of waste by 2050, and recycling 100 percent of wastewater by 2035.

The analysis in **Table IV.D-8** above describes the consistency of the Project and Flexibility Option with the Green New Deal. The Project and Flexibility Option would incorporate water conservation, energy conservation, tree-planting, and other features consistent with regulatory requirements. Therefore, the Project and the Flexibility Option would be consistent with the City's Green New Deal for the reduction of GHG emissions.

(d) Los Angeles Green Building Code

The Los Angeles Green Building Ordinance requires that all projects filed on or after January 1, 2020, comply with the current Los Angeles Green Building Code as amended to comply with the 2022 CALGreen Code. Mandatory measures under the Los Angeles Green Building Code that would help reduce GHG emissions include five percent of the required and proposed parking spaces will have chargers for EVs and 30 percent of the required and provided parking spaces will be capable of supporting future EVSE; an air-tight and insulated envelope; low-energy loss windows; low-water use plumbing fixtures; Energy Star appliances; energy-efficient lighting and elevator; low-water use landscaping and smart irrigation.

(e) Post-2030 Analysis

Studies show that the State's existing and proposed regulatory framework will put the State on a pathway to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050 if additional appropriate reduction measures are adopted.[96] Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the Statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies could allow the State to meet the 2050 target.

Subsequent to the findings of these studies, SB 32 was passed on September 8, 2016, which requires that Statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030.

[96] California Energy Commission, Energy Research and Development Division, Final Project Report, Deep Decarbonization in a High Renewables Future, Updated Results from the California PATHWAYS Model, CEC-500-2018-012, June 13, 2018. Energy and Environmental Economics (E3). The study evaluated the feasibility and cost of a range of potential 2030 targets along the way to the State's goal of reducing GHG emissions to 80 percent below 1990 levels by 2050. With input from the agencies, Long-term scenarios were developed with input from the California Air Resources Board, California Energy Commission, California Public Utilities Commission, and the California Independent System Operator that explored the potential pace at which emission reductions can be achieved, as well as the mix of technologies and practices deployed. Modeling encompassed the entire California economy with detailed representations of the buildings, industry, transportation and electricity sectors.

These targets would build upon those originally established under AB 32, which required reducing Statewide GHG emissions to 1990 levels by 2020. As discussed above, SB 32 involves increasing renewable energy use, imposing tighter limits on the carbon content of gasoline and diesel fuel, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries. The Project's design features advance these goals by reducing VMT, as described in more detail above, and other sustainable features that increase the use of EVs, improving energy efficiency, and reducing water usage, including, but not limited to, (1) 10 percent of the required and proposed parking spaces will have EVSE, and 30 percent of the required and provided parking spaces will be capable of supporting future EVSE; (2) low-water use plumbing fixtures; (3) energy-efficient elevator; (4) energy-efficient glazing and window frames; (5) energy-efficient mechanical systems and appliances; (6) energy-efficient lighting; and (7) low-water use landscaping and irrigation.

Executive Order S-3-05 establishes a goal to reduce GHG emissions to 80 percent below 1990 levels by 2050. This goal, however, has not been codified. That being said, studies have shown that, in order to meet the 2050 target, aggressive technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, will be required. In its 2008 Climate Change Scoping Plan, CARB acknowledged that the "measures needed to meet the 2050 are too far in the future to define in detail."[97] In the First Update to the Scoping Plan in 2014, however, CARB generally described the type of activities required to achieve the 2050 target: "energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately."[98] The 2022 Scoping Plan sets forth measures that will achieve emissions targets through 2045.

Although the Project's emissions level in 2050 cannot be reliably quantified, Statewide efforts are underway to facilitate the State's achievement of that goal, and it is reasonable to expect the Project's emissions to decline as the regulatory initiatives identified by CARB in the Climate Change Scoping Plan are implemented, and other technological innovations occur.[99] Stated differently, the Project's total emissions at build-out, presented in **Table IV.D-9** below, represent the maximum emissions inventory for the Project as California's emissions sources are being regulated (and foreseeably expected to continue to be regulated in the future) in furtherance of the State's environmental policy objectives. That inventory takes into account existing regulations and regulations that would apply to the Project at its build-out year. Please refer to the 2022 Scoping Plan discussion above for applicable regulatory measures that would serve to reduce GHG impacts from the Project.

As an example, the Project's GHG emissions associated with electrical usage would be reduced by an additional 22 percent in Year 2030 and to zero in 2050 since the electricity provider (LADWP) serving the Project Site must generate electricity with 60-percent renewables in 2030

97 CARB, Climate Change Scoping Plan: A Framework for Change, December 2008, p. 117.
98 CARB, 2017 Scoping Plan Update, November 2017, p. 18.
99 Such regulatory measures which will further reduce GHG emissions include the RPS under SB 100 which requires 100-percent renewable energy by 2045.

and 100-percent renewables by 2045 (SB 100). As such, given the reasonably anticipated decline in Project emissions once fully constructed and operational, the Project would be consistent with and not conflict with the Executive Order's horizon- year (2050) goal. Further, the Project is consistent with SCAG's 2020–2045 RTP/SCS, which demonstrates that the region would meet the post-2030 GHG reduction goal of 19 percent by 2035.

The Project is the type of land use development that is encouraged by the 2020– 2045 RTP/SCS to reduce VMT and expand multi-modal transportation options in order for the region to achieve the GHG reductions from the land use and transportation sectors required by SB 375, which, in turn, advances the State's long-term climate policies. This reduction in VMT would further support the goals of the 2020-2045 RTP/SCS with an estimated 19-percent decrease in per capita GHG emissions from passenger vehicles by 2035. By furthering implementation of SB 375, the Project supports regional land use and transportation GHG reductions consistent with State climate targets for 2030 and beyond.

For the reasons described above, the Project's post-2030 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets and Executive Orders S-3-05 and B-30-15.

(f) Carbon Neutrality

As discussed above, Executive Order B-55-18 establishes a new Statewide goal to achieve carbon neutrality no later than 2045 and achieve and maintain net negative emissions thereafter. Based on this executive order, CARB would work with relevant State agencies to develop a framework for implementation and accounting that tracks progress towards this goal, as well as ensuring future scoping plans identify and recommend measures to achieve the carbon neutrality goal.

CARB has released a study evaluating three scenarios that achieve Carbon Neutrality in California by 2045. The scenarios analyzed to achieve carbon neutrality include a High Carbon Dioxide Removal (CDR) scenario, Zero Carbon Energy scenario, and a Balanced scenario. Under each of these scenarios, CARB proposed reduction strategies for various sectors that contribute GHG emissions throughout the State. **Table IV.D-9, Project and Flexibility Option Consistency with 2045 Carbon Neutrality Goals** below provides a summary of key emission reduction strategies required to achieve Carbon Neutrality by 2045. In addition, Table IV.D-9 demonstrates how the Project would be consistent or not conflict with these measures. and would, therefore, not be in conflict with and, thus, would be consistent with the State's achievement of the carbon neutrality goals of Executive Order B-55-18.

Table IV.D-9
Project and Flexibility Option Consistency with 2045 Carbon Neutrality Goals

Sector	Description	Project Consistency
Sector: Low Carbon Fuels	The State would use advanced biofuels for ground transportation, renewable aviation fuel and biomethane for electricity generation. Hydrogen may also be blended into pipeline gas demand as well as hydrogen for fuel cell transportation.	**No Conflict.** This action primarily applies to the transportation fuel providers. However, the Project[1] would source transportation fuel from these providers that would comply with these reduction measures.
Sector: Buildings	The State would require 100 percent of sales of electric appliances by 2030 through 2040.	**No Conflict.** While the Project may include natural gas appliances, any purchases of appliances after 2030 would be consistent with State requirements.
Sector: Transportation	The State would require 100 percent Battery Electric Vehicle (BEV) sales for Light Duty Vehicles (LDV) and Medium Duty Vehicles (MDV) as early as 2030. Sales of Heavy Duty Vehicles (HDV) would achieve at least 45 percent BEV or CNG as early as 2035. At least 50 percent of rail within the State would be electrified and 50 percent of in-state aviation be electrified.	**No Conflict.** Residents, employees and visitors of the Project purchasing vehicles within the State would comply with BEV or compressed natural gas (CNG) vehicle sales requirements. Therefore, the Project would not conflict with requirements on sales of BEV or CNG powered vehicles. In addition, the Project would install EV charging stations consisting of 10 percent of total parking spaces. **Not Applicable.** The Project would not include rail or aviation operations.
Sector: Industry and Agriculture	The State would require industry to be up to 53 percent electrified and up to 19 percent of energy to be met with hydrogen. Cement, glass, oil and gas industries would be required to achieve carbon capture of at least 14 MMT. Agricultural energy emissions would be reduced by at least 80 percent. Oil and gas extraction and petroleum refining energy demand would be reduced by at least 90 percent.	**Not Applicable.** The Project would not include industrial or agricultural uses.
Sector: Electricity	Electricity generation within the state is fueled with natural gas, biomethane or hydrogen. At least 95 percent of electricity generation would be zero carbon.	**No Conflict.** This action primarily applies to the local power utility company (LADWP). However, the Project would source electricity from the LADWP that would comply with these reduction measures.
High GWP and Non-Combustion	Landfill and wastewater methane would be reduced by 23 percent. Pipeline fugitive emissions would be reduced by	**No Conflict.** Although the Project would generate wastewater and solid waste, this action primarily applies to the local

Table IV.D-9
Project and Flexibility Option Consistency with 2045 Carbon Neutrality Goals

Sector	Description	Project Consistency
	72 percent, agricultural methane would be reduced by 41 percent and refrigerants would be reduced by 75 percent. Percent reductions are relative to Year 2020.	water treatment (LASan) and solid waste facility operators (LASan and private operators). The Project would include water conservation and solid waste reduction measures that would minimize the Project's input to these waste processing facilities.
Sector: Carbon Dioxide Removal	At least 33 million metric tons/year of carbon dioxide removal needed in 2045.	**Not Applicable.** While this action primarily applies to the State, the Project would comply with this policy as required by current or future regulations.
2 Unless otherwise stated, "Project" refers to both the Project and the Flexibility Option. *Source: CARB, Achieving Carbon Neutrality in California, Table 1. October 2020.*		

(g) Conclusion

As the Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs, impacts with respect to GHGs would be less than significant. No mitigation measures would be required.

(2) Greenhouse Gas Emissions

Numerical differences exist for this threshold because of the differences in project parameters between the Project and Flexibility Option; therefore, these analyses are presented separately.

(a) Project

The Project involves the demolition of existing uses and the construction of a mixed-use development including up to 220 Live-Work apartments, 22,725 square feet of open space for residents, and 46,548 square feet of commercial uses. A total of 381 parking spaces would be provided in three subterranean levels. The Project would be constructed over approximately 24 months. The Project is anticipated to start construction no sooner than late 2022 and be completed by 2025. Construction activities would be undertaken in the following phases: (1) demolition, (2) grading, (3) site preparation, (4) building construction, (5) paving, and (6) application of architectural coatings. The open space/landscaping area would include the planting of approximately 57 new trees.

GHG emissions for the Project have been calculated based on the parameters described above. A summary of the results is shown below in **Table IV.D-10, Project-Related GHG Emissions** and the CalEEMod Model runs for the Project are provided in **Appendix E GHG Calculations. Table IV.D-10** shows that the subtotal for the Project's emissions would be 3,864 $MTCO_2e$ per year.

Consistent with the methodology of the LADOT VMT Calculator, TDM-based trip reductions for the Project are based on the following:

- Reduced parking supply - the unadjusted Code parking requirement for the Project would be 613 spaces. The Project proposes to provide 381 parking spaces, which is less than the unadjusted LAMC requirement;
- Inclusion of bicycle parking - the Project would provide the required number of short-term (31 spaces) and long-term (149 spaces) bicycle parking spaces for the residential and commercial components; and
- Pedestrian network improvements - the Project would include pedestrian access points directly to sidewalks on the adjacent streets, including 5th Street and Seaton Street. Specifically, walk-in entrances are proposed via 5th Street and Seaton Street. Additionally, the Project would include two paseos that would provide access via 5th Street and Seaton Street to ground floor commercial uses and amenities.

Table IV.D-10
Project-Related GHG Emissions

Emissions Source	Estimated Project Generated CO_2e Emissions (Metric Tons per Year)
Area Sources[1]	55.3
Energy Usage[2]	1,155
Mobile Sources[3]	2,371
Stationary Sources[4]	2.75
Solid Waste Generation[5]	133
Water/Wastewater[6]	65.9
Refrigerants[7]	5.33
Construction Emissions[8]	75.47
Project Total[9]	**3,864**

*Calculation sheets are provided in the **Appendix E** of this Draft EIR.*
1 Area Sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.
2 Energy usage consists of GHG emissions from electricity and natural gas usage.
*3 Mobile sources consist of GHG emissions from vehicles. The CalEEMod output sheets for the mobile source calculations are contained in **Appendix E.** Calculation based on 2,750 net new daily trips. Total reflects application of TDM measures.*
4 Stationary sources consist of emergency generators operated during routine maintenance/testing.
5 Solid waste includes the CO_2 and CH_4 emissions from the solid waste placed in landfills.
6 Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
7 Refrigerants are substances used in equipment for air conditioning (A/C) and refrigeration.
8 Construction includes GHG emissions CO_2e based on a 30-year amortization rate.
9 A reduction of total trips to reflect existing use was applied in the calculation of mobile source emissions. No credit taken for operational emissions from existing uses (other than mobile source).
Source: CalEEMod Version 2022.1 for Opening Year for the Project.

(b) Flexibility Option

Under the Flexibility Option, the proposed land uses and size under the Project would remain the same; however, the commercial square footage provided would be increased to 64,313 square feet within the same building parameters, and, in turn, there would be a reduction in the overall number of live/work units for a total of 200 units. The construction activities and schedule would be similar under both scenarios.

The GHG emissions for the Flexibility Option have been calculated based on the parameters described above for the Project. A summary of the results is shown below in **Table IV.D-11, Flexibility Option-Related GHG Emissions** and the CalEEMod Model runs for the Flexibility Option are provided in **Appendix E** of this Draft EIR. **Table IV.D-11** shows that the subtotal for the Flexibility Option's emissions would be slightly higher than the Project, at 3,987 $MTCO_2e$ per year.

Table IV.D-11
Flexibility Option-Related GHG Emissions

Emissions Source	Estimated Project Generated CO_2e Emissions (Metric Tons per Year)
Area Sources[1]	51.0
Energy Usage[2]	1,215
Mobile Sources[3]	2,430
Stationary Sources[4]	2.75
Solid Waste Generation[5]	134
Water/Wastewater[6]	74.1
Refrigerants[7]	5.35
Construction Emissions[8]	74.7
Flexibility Option Total[9]	**3,987**

*Calculation sheets are provided in **Appendix B** of this Draft EIR.*
1 *Area Sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.*
2 *Energy usage consists of GHG emissions from electricity and natural gas usage.*
3 *Mobile sources consist of GHG emissions from vehicles. The CalEEMod output sheets for the mobile source calculations are contained in **Appendix E.** Calculation based on 2,797 daily trips.*
4 *Stationary sources consist of emergency generators operated during routine maintenance/testing.*
5 *Solid waste includes the CO_2 and CH_4 emissions from the solid waste placed in landfills.*
6 *Water includes GHG emissions from electricity used for transport of water and processing of wastewater.*
7 *Refrigerants are substances used in equipment for air conditioning (A/C) and refrigeration.*
8 *Construction includes GHG emissions CO_2e based on a 30-year amortization rate.*
9 *A reduction of total trips to reflect existing uses was applied in the calculation of mobile source emissions. No credit taken for operational emissions from existing uses (other than mobile source).*
Source: CalEEMod Version 2022.1 for Opening Year for the Flexibility Option.

As stated above, because there is no applicable adopted or accepted numerical threshold of significance for GHG emissions, the methodology for evaluating the Project's impacts related to GHG emissions focuses on its consistency with statewide, regional, and local plans adopted for

the purpose of reducing and/or mitigating GHG emissions. This evaluation of consistency with such plans is the sole basis for determining the significance of the Project's GHG-related impacts on the environment.

(3) Mitigation Measures

Under both the Project and the Flexibility Option, impacts related to the generation of GHG emissions would be less than significant; therefore, no mitigation would be required.

(4) Level of Significance After Mitigation

Under both the Project and the Flexibility Option, impacts related to the generation of GHG emissions would be less than significant without mitigation. Therefore, no mitigation measures were required or included, and the impact level remains less than significant.

4. Cumulative Impacts

Due to the similarity in land uses and operational characteristics between the Project and the Flexibility Option, the impacts of the Project and the Flexibility Option related to cumulative GHG emissions would be essentially the same. Therefore, the conclusions regarding the impact analysis and impact significance determination presented below for the Project would be the same under the Flexibility Option.

a) Impact Analysis

A cumulatively considerable impact would occur where the impact of the Project, in addition to the related projects, would be significant. However, in the case of global climate change, the proximity of the Project to other GHG emission generating activities is not directly relevant to the determination of a cumulative impact because climate change is a global condition. According to CAPCOA, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective."[100] As noted above, the analysis of the Project's impact is a cumulative analysis, and no further discussion is required. Given that the analyses above found that the Project GHG impacts would be less than significant, the Project's and Flexibility Option's cumulative impacts would be less than significant. **Therefore, the cumulative impact related to GHG emissions would be less than significant and the Project and Flexibility Option's contributions to GHG emissions would not be cumulatively considerable.**

[100] California Air Pollution Control Officers Association, CEQA & Climate change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, 2008.

b) Mitigation Measures

Under both the Project and the Flexibility Option, cumulative impacts related to GHG emissions would be less than significant; no mitigation measures would be required.

c) Level of Significance After Mitigation

Under both the Project and the Flexibility Option, cumulative impacts related to GHG emissions would be less than significant without mitigation. Therefore, no mitigation measures were required or included, and the impact level remains less than significant.