

IV.G GREENHOUSE GAS EMISSIONS

1. INTRODUCTION

This section of the Draft EIR provides a discussion of global climate change, existing regulations pertaining to climate change, an inventory of the greenhouse gas (GHG) emissions that would result from the Project, and an analysis of the potential impact of those GHGs. Calculation worksheets, assumptions, and model outputs used in the analysis are contained in **Appendix IV.G.1: GHG Calculation Worksheets** of this Draft EIR.

2. ENVIRONMENTAL SETTING

Greenhouse Gases and Climate Change

Global Context

GHGs are global pollutants that have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere for a long enough time to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule depends on multiple variables and cannot be pinpointed, more CO₂ is currently emitted into the atmosphere than is avoided or sequestered. CO₂ sinks, or reservoirs, include vegetation and the ocean, which absorb CO₂ through photosynthesis and dissolution, respectively. These are two of the most common processes of CO₂ sequestration. Of the total annual human-caused CO₂ emissions, approximately 54 percent is sequestered within a year through ocean uptake, northern hemisphere forest regrowth, and other terrestrial sinks; the remaining 46 percent of human-caused CO₂ emissions are stored in the atmosphere.

Similarly, the effects of GHGs are borne globally (sea-level rise, hurricanes, droughts, etc.), as opposed to the localized air quality effects of criteria air pollutants and toxic air contaminants (TACs). The quantity of GHGs that it takes to ultimately result in climate change is not precisely known, but that quantity is enormous. No single project would be expected to measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or microclimates. However, it is the combined GHG contributions per project that create an impact.

Greenhouse Effect

GHGs play a critical role in determining the Earth's surface temperature because these gases absorb solar radiation. Solar radiation enters the Earth's atmosphere from space. A portion of the radiation is absorbed by the Earth's surface, and a smaller portion of this radiation is reflected back into space. The radiation absorbed by the Earth is reradiated as lower-frequency infrared radiation, which is then selectively absorbed by GHGs in the Earth's atmosphere. As a result, the greater the amount of GHGs in the atmosphere, the greater the amount of infrared radiation trapped, resulting in a warming of the atmosphere. This phenomenon is commonly referred to as the "greenhouse effect." Scientists have

speculated that increased GHG emissions from human activity (anthropogenic) could lead to a less habitable climate. Anthropogenic GHG emissions leading to atmospheric levels in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the Earth's atmosphere and oceans, with corresponding effects on global air and water circulation patterns and climate. CO₂ emissions associated with fossil fuel combustion are the primary contributors to human-induced emissions.

Climate Change Effects for California

Climate change could affect environmental conditions in California in a variety of ways. One effect of climate change is rising sea levels. Sea levels along the California coast rose approximately 7 inches during the last century, and they are predicted to rise an additional 7 to 22 inches by 2100, depending on the future levels of GHG emissions. The effects of a rise in sea level could include increased coastal flooding, saltwater intrusion (especially a concern in the low-lying Sacramento–San Joaquin Delta, where pumps delivering potable water to Southern California could be threatened), and disruption of wetlands.

As the State's climate changes over time, the range of various plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the State if suitable conditions are no longer available. Additional concerns associated with climate change include a reduction in the snowpack, leading to less overall water storage in the mountains (the largest "reservoir" in the State), and increased risk of wildfires caused by changes in rainfall patterns and plant communities. Changes in the climate can also impact California's weather patterns and rainfall, causing droughts in certain areas and flooding in others.

Sources of Greenhouse Gas Emissions

GHGs are the result of both natural and anthropogenic activities. With respect to anthropogenic activities, motor vehicle travel, air travel, consumption of fossil fuels for power generation, industrial processes, heating and cooling, landfills, agriculture, and wildfire are the primary sources of GHG emissions. Additionally, land use decisions and future development projects pursuant to implementation of a general plan can affect the generation of GHG emissions from multiple sectors, resulting in direct or indirect GHG emissions. For example, electricity consumed in the lighting and heating of buildings is an indirect source of GHG emissions because it requires electricity from power plants, which emits GHG directly into the atmosphere. Conversely, tailpipe emissions from the use of vehicles generates direct GHG emissions.

GHGs are a group of emissions that include CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, and nitrogen trifluoride (NF₃). Carbon dioxide is the most abundant GHG. As stated above, other GHGs are less abundant, but have higher global warming potential than CO₂. Thus, emissions of other GHGs are frequently expressed in the equivalent mass of CO₂; denoted as CO₂e. A general description of GHGs discussed is provided in **Table IV.G-1: Description of Identified Greenhouse Gases.**

**Table IV.G-1
Description of Identified Greenhouse Gases**

GHG	General Description
Carbon Dioxide (CO₂)	An odorless, colorless GHG that 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 (CH₄)	A flammable gas and is 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 (N₂O)	A colorless GHG. High concentrations can cause dizziness, euphoria, and sometimes slight hallucinations. N ₂ O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used in rocket engines, race cars, and as an aerosol spray propellant.
Hydrofluorocarbons (HFCs)	Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in CH ₄ or ethane (C ₂ H ₆) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at 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 substitute for CFCs as refrigerants. HFCs deplete stratospheric ozone, but to a much lesser extent than CFCs.
Perfluorinated Chemicals (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-conduction manufacturing.
Sulfur Hexafluoride (SF₆)	An inorganic, odorless, colorless, nontoxic, and nonflammable 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 (NF₃)	An inorganic, nontoxic, odorless, nonflammable gas. NF ₃ is used in the manufacture of semiconductors, as an oxidizer of high energy fuels, for the preparation of tetrafluoro hydrazine, 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.

Greenhouse Gas Emissions Inventory and Trends

Existing Statewide GHG Emissions

California is the second largest contributor of GHGs in the United States and the 16th largest in the world.¹ In 2018, California produced 425.4 million metric tons of carbon dioxide equivalents (MMT_{CO₂e}), including imported electricity, and excluding combustion of international fuels and carbon sinks or storage. The major source of GHGs in California is transportation, contributing to 40 percent of the State's total GHG emissions. The Statewide inventory of GHGs by sector is shown in **Table IV.G-2: California GHG Inventory 2010-2018**.

**Table IV.G-2
California GHG Inventory 2010–2018**

Main Sector	Emissions (MMT _{CO₂e})								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Transportation ^a	165.1	161.8	161.4	161.2	162.6	166.2	169.8	171.0	169.5
Electric Power	90.3	89.2	98.2	91.4	88.9	84.8	68.6	62.1	63.1
Industrial ^b	91.0	89.3	88.9	91.6	92.4	90.1	88.9	88.7	89.2
Commercial and Residential	45.9	46.0	43.5	44.2	38.2	38.8	40.6	41.3	41.4
Agriculture	33.7	34.4	35.5	33.8	34.8	33.4	33.2	32.3	32.6
High GWP ^{c,d}	13.5	14.5	15.5	16.8	17.7	18.6	19.3	20.0	20.5
Recycled and waste	8.7	8.7	8.7	8.7	8.8	8.8	8.9	9.0	9.1
Total Emissions	448.2	443.9	451.7	447.7	443.4	440.7	429.3	424.4	425.4

Source: CARB, GHG Current California Emission Inventory Data, <https://ww2.arb.ca.gov/ghg-inventory-data>. Accessed April 2021.

^a Includes equipment used in construction, mining, oil drilling, industrial and airport ground operations.

^b Reflects emissions from combustion of natural gas, diesel, and lease fuel plus fugitive emissions.

^c These categories are listed in the Industrial sector of CARB's GHG Emission Inventory sectors.

^d This category is listed in the Electric Power sector of CARB's GHG Emission Inventory sectors.

Note: MMT_{CO₂e} - million metric tons of carbon dioxide equivalent emissions

3. REGULATORY SETTING

Federal

Federal Clean Air Act

The US Supreme Court ruled in *Massachusetts v. Environmental Protection Agency*² that carbon dioxide (CO₂) and other GHGs are pollutants under the federal Clean Air Act (CAA), which the US Environmental

1 California Energy Commission, Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004, Staff Final Report, CEC-600-2006-013-SF (December 2006).

2 *Massachusetts v. Environmental Protection Agency*, 127 S.Ct. 1438 (2007).

Protection Agency (USEPA) must regulate if it determines they pose an endangerment to public health or welfare.³ The Court did not mandate that the USEPA enact regulations to reduce GHG emissions. Instead, the Court found that the USEPA could avoid taking action if it found that GHGs do not contribute to climate change or if it offered a “reasonable explanation” for not determining that GHGs contribute to climate change.

On April 17, 2009, the USEPA issued a proposed finding that GHGs contribute to air pollution that may endanger public health or welfare. On April 24, 2009, the proposed rule was published in the Federal Register under Docket ID No. EPA-HQ-OAR-2009-0171.⁴ The USEPA stated that high atmospheric levels of GHGs “are the unambiguous result of human emissions and are very likely the cause of the observed increase in average temperatures and other climatic changes.” The USEPA further found that “atmospheric concentrations of greenhouse gases endanger public health and welfare within the meaning of Section 202 of the Clean Air Act.” The final rule was effective on January 14, 2010.⁵ While these findings alone did not impose any requirements on industry or other entities, this action was a prerequisite to regulatory actions by the USEPA, including, but not limited to, GHG emissions standards for light-duty vehicles.

In response, the USEPA promulgated a regulation to require reporting of all GHG emissions from all sectors of the economy. The final rule applies to fossil fuel suppliers and industrial gas suppliers, direct greenhouse gas emitters and manufacturers of heavy-duty and off-road vehicles and engines. The rule does not require control of greenhouse gases; rather, it requires only that sources above certain threshold levels monitor and report emissions.⁶

Corporate Average Fuel Economy (CAFE) Standards

In response to the *Massachusetts v. Environmental Protection Agency* ruling, the George W. Bush administration issued Executive Order 13432 in 2007, directing the USEPA, the US Department of Transportation (USDOT), and the US Department of Energy (USDOE) to establish regulations that reduce

3 Perry W. Payne and Sara Rosenbaum, *Massachusetts et al. v Environmental Protection Agency: Implications for Public Health Policy and Practice*, Public Health Reports 122 No. 6 (2007): 817–819, <https://doi.org/10.1177/003335490712200614>. Accessed April 2021.

4 Federal Register, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act* (December 15, 2009), <https://www.federalregister.gov/documents/2009/12/15/E9-29537/endangerment-and-cause-or-contribute-findings-for-greenhouse-gases-under-section-202a-of-the-clean>. Accessed April 2021.

5 United States Environmental Protection Agency (USEPA), *Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Section 202(a) of the Clean Air Act*, <https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean/>. Accessed April 2021.

6 Federal Register, *Mandatory Reporting of Greenhouse Gases* (October 30, 2009), <https://www.gpo.gov/fdsys/pkg/FR-2009-10-30/pdf/E9-23315.pdf>. Accessed April 2021.

GHG emissions from motor vehicles, nonroad vehicles, and nonroad engines by 2008.⁷ In 2009, the National Highway Traffic Safety Administration (NHTSA) issued a final rule regulating fuel efficiency for and GHG emissions from cars and light-duty trucks for model year 2011; in 2010, the USEPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.⁸

In 2010, President Obama issued a memorandum directing the USEPA, USDOT, USDOE, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the USEPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles.⁹ The proposed standards projected to achieve 163 grams/mile of CO₂ in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon (mpg) if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022 – 2025 in a future rulemaking. On April 2, 2018, the USEPA signed the Mid-term Evaluation Final Determination, which finds that the model year 2022–2025 greenhouse gas standards are not appropriate and should be revised.¹⁰ The Final Determination serves to initiate a notice to further consider appropriate standards for model year 2022–2025 light duty vehicles. On August 24, 2018, the USEPA and NHTSA published a proposal to freeze the model year 2020 standards through model year 2026 and to revoke California’s waiver under the Clean Air Act to establish more stringent standards.

In addition to the regulations applicable to cars and light-duty trucks described above, in 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. If implemented, the Phase 2 standards would be expected to lower CO₂ emissions by approximately 1.1 billion metric tons (MT), save vehicle owners fuels costs of about \$170 billion.¹¹ But as discussed above, the USEPA and NHTSA have proposed to roll back

7 US Government Publishing Office, Administration of George W. Bush, Executive Order 13432—Cooperation Among Agencies in Protecting the Environment With Respect to Greenhouse Gas Emissions From Motor Vehicles, Nonroad Vehicles, and Nonroad Engines, 631 (May 14, 2007), <https://www.gpo.gov/fdsys/pkg/WCPD-2007-05-21/pdf/WCPD-2007-05-21-Pg631.pdf>. Accessed April 2021.

8 USEPA, Regulations for Greenhouse Gas Emissions from Commercial Trucks & Buses (December 27, 2017), <https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-greenhouse-gas-emissions-commercial-trucks>. Accessed April 2021.

9 USEPA, Presidential Announcements and Letters of Support related to Greenhouse Gas Emissions (August 28, 2017), <https://www.epa.gov/regulations-emissions-vehicles-and-engines/presidential-announcements-and-letters-support-related>. Accessed April 2021.

10 Federal Register, Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022 – 2025 Light-Duty Vehicles, April 13, 2018, <https://www.federalregister.gov/documents/2018/04/13/2018-07364/mid-term-evaluation-of-greenhouse-gas-emissions-standards-for-model-year-2022-2025-light-duty>. Accessed April 2021.

11 USEPA, 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.

GHG and fuel economy for cars and light-duty trucks, which suggest a similar rollback of Phase 2 standards for medium and heavy-duty vehicles may be pursued.

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:¹²

- 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 renewable fuel in 2022, with at least 16 billion gallons from cellulosic biofuels and a cap of 15 billion gallons for corn-starch ethanol;
- 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 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.”¹³

State

Executive Orders

Executive Order S-3-05

Executive Order S-3-05, signed by Governor Arnold Schwarzenegger and issued in June 2005, proclaimed that California is vulnerable to the impacts of climate change.¹⁴ It declared that increased temperatures could reduce the Sierra snowpack, further exacerbate California’s air quality problems, and potentially

12 USEPA, Summary of the Energy Independence and Security Act, <https://www.epa.gov/laws-regulations/summary-energy-independence-and-security-act>. Accessed April 2021.

13 A green job, as defined by the United States Department of Labor, is a job in business that produce goods or provide services that benefit the environment or conserve natural resources.

14 National Resources Conservation Service, Emerging Issues Committee Members, https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_008701.pdf. Accessed April 2021.

cause a rise in sea levels. To combat those concerns, the Executive Order established the following total GHG emission targets:

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

However, in adopting the California Global Warming Solutions Act of 2006, also known as Assembly Bill (AB) 32 (Pavley), discussed below, the Legislature did not adopt the 2050 horizon-year goal from Executive Order No. S-3-05 and, in the 2006 legislative session, rejected legislation to enact the Executive Order's 2050 goal.

Executive Order S-01-07

Executive Order S-1-07, the Low Carbon Fuel Standard (issued on January 18, 2007), requires a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020.¹⁵ Regulatory proceedings and implementation of the Low Carbon Fuel Standard have been directed to the California Air Resources Board (CARB). CARB has identified the Low Carbon Fuel Standard as a discrete early action item in the adopted Climate Change Scoping Plan (discussed below). CARB expects the Low Carbon Fuel Standard to achieve the minimum 10 percent reduction goal; however, many of the early action items outlined in the Climate Change Scoping Plan work in tandem with one another. Other specific emission reduction measures included are the Million Solar Roofs Program¹⁶ and Assembly Bill (AB) 1493 (Pavley I), Vehicle Emissions: Greenhouse Gases, which establishes motor vehicle GHG emissions standards.¹⁷ To avoid the potential for double-counting emission reductions associated with AB 1493, the Climate Change Scoping Plan has modified the aggregate reduction expected from the Low Carbon Fuel Standard to 9.1 percent. In accordance with the Climate Change Scoping Plan, this analysis incorporates the modified reduction potential for the Low Carbon Fuel Standard. CARB released a draft version of the Low Carbon Fuel Standard in October 2008. The final regulation was approved by the Office of Administrative Law and filed with the Secretary of State on January 12, 2010; the Low Carbon Fuel Standard became effective on the same day.

15 Office of the Governor, Executive Order S-01-07 (January 18, 2007), <https://www.arb.ca.gov/fuels/lcfs/eos0107.pdf>. Accessed April 2021.

16 US Department of Energy, Laying the Foundation for Solar America: The Million Solar Roofs Initiative, <https://www.nrel.gov/docs/fy07osti/40483.pdf>. Accessed April 2021.

17 The standards enacted in Pavley I are the first GHG standards in the nation for passenger vehicles and took effect for model years starting in 2009 and going through 2016. Pavley I could potentially result in 27.7 million metric tons CO₂e reduction in 2020. Pavley II will cover model years 2017 to 2025 and potentially result in an additional reduction of 4.1 million metric tons CO₂e.

Executive Order B-30-15

Executive Order B-30-15, signed by Governor Edmund Gerald “Jerry” Brown and issued in April 29, 2015, established a new Statewide policy goal to reduce GHG emissions to 40 percent below their 1990 levels by 2030. Reducing GHG emissions by 40 percent below 1990 levels in 2030, and by 80 percent below 1990 levels by 2050 (consistent with Executive Order S-3-05), aligns with scientifically established levels needed to limit global warming to less than 2 degrees Celsius.¹⁸

Assembly Bill 32 and Related Legislation

AB 32, the Global Warming Solutions Act of 2006, requires a sharp reduction of GHG emissions to 1990 levels by 2020. To achieve these goals, which are consistent with the California Climate Action Team, which works to coordinate statewide efforts to implement global warming emission reduction programs and the state's Climate Adaptation Strategy after the passing of AB 32, AB 32 mandates that CARB establish a quantified emissions cap and institute a schedule to meet the cap; implement regulations to reduce Statewide GHG emissions from stationary sources consistent with the California Climate Action Team strategies; and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. To reach the reduction targets, AB 32 requires CARB to adopt—in an open, public process—rules and regulations that achieve the maximum technologically feasible and cost-effective GHG reductions.

Climate Change Scoping Plan

CARB approved a Climate Change Scoping Plan (Scoping Plan) on December 11, 2008, as required by AB 32. The Scoping Plan proposed a “comprehensive set of actions designed to reduce overall carbon GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health.”¹⁹ The Scoping Plan had a range of GHG reduction actions, including direct regulations; alternative compliance mechanisms; monetary and nonmonetary incentives; voluntary actions; market-based mechanisms, such as a cap-and-trade system; and an AB 32 implementation regulation to fund the program.

The Scoping Plan called for a “coordinated set of strategies” to address all major categories of GHG emissions.²⁰ Transportation emissions were to be addressed through a combination of higher standards for vehicle fuel economy, implementation of the Low Carbon Fuel Standard,²¹ and greater consideration

18 Office of the Governor, Governor Brown Established Most Ambitious Greenhouse Gas Reduction Target in North America (April 29, 2015), <https://www.ca.gov/archive/gov39/2015/04/29/news18938/index.html>. Accessed April 2021.

19 CARB, Climate Change Scoping Plan: A Framework for Change, https://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed April 2021.

20 CARB, Climate Change Scoping Plan, p. ES-7.

21 Office of the Governor, Executive Order S-01-07, (January 18, 2007), <https://climateactionnetwork.ca/wp-content/uploads/2011/06/eos0107.pdf>. Accessed April 2021.

to reducing trip length and generation through land use planning and transit-oriented development. Buildings, land use, and industrial operations were encouraged and, sometimes, required to implement energy efficiency practices. Utility energy supplies will change to include more renewable energy sources through implementation of the Renewables Portfolio Standard. This will be complemented with emphasis on local generation, including rooftop photovoltaics and solar hot water installations. Additionally, the Scoping Plan emphasized opportunities for households and businesses to save energy and money through increasing energy efficiency. It indicated that substantial savings of electricity and natural gas would be accomplished through improving energy efficiency.

CARB updated the Scoping Plan in May 2014 (2014 Scoping Plan). The 2014 Scoping Plan²² adjusted the 1990 GHG emissions levels to 431 million metric tons of carbon dioxide equivalents (MMTCO₂e); the updated 2020 GHG emissions forecast is 509 MMTCO₂e, which credited for certain GHG emission reduction measures already in place (e.g., the RPS). The 2014 Scoping Plan also recommended a 40 percent reduction in GHG emissions from 1990 levels by 2030, and a 60 percent reduction in GHG emissions from 1990 levels by 2040.

The 2017 Scoping Plan,²³ approved on December 14, 2017, builds on previous programs and takes aim at the 2030 target established by the SB 32 (Pavley), which is further discussed below. The 2017 Scoping Plan outlines options to meet California's aggressive goals to reduce GHGs by 40 percent below 1990 levels by 2030. In addition, the plan incorporates the State's updated RPS requiring utilities to procure 50 percent of their electricity from renewable energy sources by 2030. It also raises the State's Low Carbon Fuel Standard²⁴ and aims to reduce emissions of methane and hydrofluorocarbons by 40 percent from 2013 levels by 2030 and emissions of black carbon by 50 percent from 2013 levels.

The 2017 Scoping Plan²⁵ advises that absent conformity with a qualified GHG reduction plan, projects should incorporate all feasible GHG reduction measures and that achieving "no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development."

22 CARB, First Update to the Climate Change Scoping Plan: Building on the Framework (May 2014).

23 CARB, California's 2017 Climate Change Scoping Plan, https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf. Accessed April 2021.

24 Office of the Governor, Executive Order S-01-07, (January 18, 2007), <https://climateactionnetwork.ca/wp-content/uploads/2011/06/eos0107.pdf>. Accessed April 2021.

25 California Air Resources Board, 2017. California's 2017 Climate Change Scoping Plan. pp. 100-101. Available: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf. Accessed April 2021.

Advanced Clean Cars Regulations

In 2012, CARB approved the Advanced Clean Cars (ACC) program, a new emissions-control program for vehicle model years 2017–2025. The program combines the control of smog, soot, and GHGs with requirements for greater number of zero-emission vehicles. By 2025, when the rules will be fully implemented, automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.²⁶

AB 197: Statewide GHG Emissions Limit

On September 8, 2016, Governor Brown signed AB 197, which requires CARB to approve a Statewide GHG emissions limit equivalent to the Statewide GHG emission level in 1990 to be achieved by 2020.²⁷ AB 197 requires the CARB to prepare and approve a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions. The bill became effective on January 1, 2017.

Senate Bills

Senate Bill 375

SB 375, signed into law in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocations.²⁸ The act requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) that prescribes land use allocation in that MPO's regional transportation plan (RTP). CARB, in consultation with MPOs, provided regional reduction targets for GHGs for the years 2020 and 2035.

Senate Bill X1-2: 2020 Renewable Portfolio Standard

On April 12, 2011, California governor Jerry Brown signed SB X1-2.²⁹ This bill supersedes the 33 percent by RPS created by Executive Order S-14-08, previously signed by Governor Schwarzenegger. The RPS required that all retail suppliers of electricity in California serve 33 percent of their load with renewable energy by 2020. A number of significant changes are made in SB X1-2. It extends application of the RPS to all electric retailers in the State, including municipal and public utilities, and community choice aggregators.

26 CARB, The Advanced Clean Cars Program (January 18, 2018), <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program>. Accessed April 2021.

27 California Legislative Information, Assembly Bill No. 197 (September 8, 2016), https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB197. Accessed April 2021.

28 California Legislative Information, Senate Bill No. 375 (September 30, 2008), https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=200720080SB375. Accessed April 2021.

29 California Energy Commission, Renewable Portfolio, <http://www.energy.ca.gov/portfolio>. Accessed April 2021.

SB X1-2 creates a three-stage compliance period for electricity providers to meet renewable energy goals: 20 percent of retail sales must be renewable energy products by 2013, 25 percent of retail sales must be renewable energy products by 2016, and 33 percent of retail sales must be renewable energy products by 2020. The 33 percent level must be maintained in the years that follow. This three-stage compliance period requires the RPS to be met increasingly with renewable energy that is supplied to the California grid and is located within or directly proximate to California. SB X1-2 mandates that renewables from this category make up:

- At least 50 percent for the 2011–2013 compliance period;
- At least 65 percent for the 2014–2016 compliance period; and
- At least 75 percent for 2016 and beyond.

SB X1-2 sets rules for the use of Renewable Energy Credits (RECs) as follows:

- Establishes a cap of no more than 25 percent unbundled RECs going toward the RPS between 2011 and 2013, 15 percent from 2014 to 2016, and 10 percent thereafter;
- Does not allow for the grandfathering of tradable REC contracts executed before 2010, unless the contract was (or is) approved by the California Public Utilities Commission (CPUC);
- Allows banking of RECs for 3 years only; and
- Allows energy service providers, community choice aggregators, and investor-owned utilities with 60,000 or fewer customers to use 100 percent RECs to meet the RPS.

SB X1-2 also eliminates the Market Price Referent, which was a benchmark to assess the above-market costs of RPS contracts based on the long-term ownership, operating, and fixed-price fuel costs for a new 500-megawatt (mW) natural-gas-fired, combined-cycle gas turbine.

Senate Bill 350: Clean Energy and Pollution Reduction Act

SB 350, the Clean Energy and Pollution Reduction Act of 2015, was signed on October 7 of that year.³⁰ SB 350 implements some of the goals of Executive Order B-30-15 described above. The objectives of SB 350 are: (1) to increase the procurement of our electricity from renewable sources from 33 percent to 50 percent; and (2) to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.³¹

30 California Legislative Information, Senate Bill No. 350 (October 7, 2015), https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350. Accessed April 2021.

31 Senate Bill 350 (2015–2016 Reg, Session) Stats 2015, ch. 547.

Senate Bill 32 and Assembly Bill 197

Enacted in 2016, SB 32 codifies the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that Statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. The reduction of GHG emissions is a priority for development projects throughout the State and is achieved through a combination of policies, planning, direct regulations, market approaches, incentives, and voluntary efforts. Generally speaking, the focus of GHG emission reductions is on energy production and motor vehicles.

SB 32 was coupled with a companion bill: AB 197. Designed to improve the transparency of CARB's regulatory and policy-oriented processes, AB 197 created the Joint Legislative Committee on Climate Change Policies, a committee with the responsibility to ascertain facts and make recommendations to the Legislature concerning Statewide programs, policies and investments related to climate change. AB 197 also requires CARB to make certain GHG emissions inventory data publicly available on its website; consider the social costs of GHG emissions when adopting rules and regulations designed to achieve GHG emission reductions; and include specified information in all Scoping Plan updates for the emission reduction measures contained therein.

Center for Biological Diversity v. California Department of Fish and Wildlife

The California Supreme Court's decision published on November 30, 2015, in *Center for Biological Diversity v. California Department of Fish and Wildlife* (Case No. 217763; the Newhall Ranch case) reviewed the methodology used to analyze GHG emissions in an EIR prepared for a project that proposed 20,885 dwelling units with 58,000 residents on 12,000 acres of undeveloped land in a rural area of the City of Santa Clara.³² That EIR used the "business as usual" (BAU) methodology to determine whether the project would impede the State of California's compliance with statutory emissions reduction mandate established by the AB 32 Scoping Plan. The Court did not invalidate the BAU approach entirely, but did hold that:

*The Scoping Plan nowhere related that statewide level of reduction effort to the percentage of reduction that would or should be required from individual projects and nothing Department of Fish and Wildlife or Newhall have cited in the administrative record indicates the required percentage reduction from business as usual is the same for an individual project as for the entire state population and economy.*³³

32 California Department of Fish and Wildlife, Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan, <https://www.wildlife.ca.gov/regions/5/newhall>. Accessed April 2021.

33 *Center for Biological Diversity et al. v. California Department of Fish and Wildlife* (2015) (62 Cal.4th 204, 195 Cal.Rptr.3d 247, 361 P.3d 342).

The California Supreme Court suggested regulatory consistency as a pathway to compliance, stating that a Lead Agency might assess consistency with AB 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. The Court recognized that to the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan, and adopted by CARB or other State agencies, a Lead Agency could appropriately rely on their use as showing compliance with performance-based standards adopted to fulfill a Statewide plan for the reduction or mitigation of greenhouse gas emissions. This approach is consistent with CEQA Guidelines Section 15064, which provides that a determination that an impact is not cumulatively considerable may rest on compliance with previously adopted plans or regulations, including plans or regulations for the reduction of greenhouse gas emissions. Importantly, the Supreme Court also suggested "a lead agency may rely on existing numerical thresholds of significance for greenhouse gas emissions (*brightline threshold approach*)."³⁴

California Energy Commission

Building Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations (CCR), regulates the design of building shells and building components. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The CEC adopted the 2016 Building Energy Efficiency Standards (2016 Building Standards), effective January 1, 2017. The CEC adopted the 2019 Building Energy Efficiency Standards, and became effective January 1, 2020. Two key areas specific to nonresidential development in the 2019 standards focus on nonresidential ventilation requirements and nonresidential lighting requirements.³⁵ Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards.

The CPUC, CEC, and CARB also have a shared, established goal of achieving Zero Net Energy (ZNE) for new construction in California. The key policy timelines include (1) all new residential construction in California will be ZNE by 2020, and (2) all new commercial construction in California will be ZNE by 2030.

The ZNE goal generally means that new buildings must use a combination of improved efficiency and renewable energy generation to meet 100 percent of their annual energy need, as specifically defined by the CEC:

34 The South Coast Air Quality Management District (SCAQMD), Interim CEQA Greenhouse Gas (GHG) Significance Thresholds, draft guidance document (October 2008), Attachment E, [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgattachmente.pdf](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf). Accessed April 2021.

35 California Energy Commission (CEC), 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, <https://www.energy.ca.gov/title24/2019standards/>. Accessed April 2021.

A ZNE Code Building is one where the value of the energy produced by on-site renewable energy resources is equal to the value of the energy consumed annually by the building, at the level of a single “project” seeking development entitlements and building code permits, measured using the [CEC]’s Time Dependent Valuation (TDV) metric. A ZNE Code Building meets an Energy Use Intensity value designated in the Building Energy Efficiency Standards by building type and climate zone that reflect best practices for highly efficient buildings.³⁶

In addition to the CEC’s efforts, in 2008, the California Building Standards Commission adopted the nation’s first green building standards. The California Green Building Standards Code (Part 11 of Title 24), commonly referred to as CALGreen, establish voluntary and mandatory standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality. CALGreen is periodically amended; the most recent 2019 standards became effective on January 1, 2020.

Appliance Standards

The CEC periodically amends and enforces Appliance Efficiency Regulations contained in Title 20 of the CCR. The regulations establish water and energy efficiency standards for both federally regulated appliances and non–federally regulated appliances. The most current Appliance Efficiency Regulations, dated July 2015, cover 23 categories of appliances (e.g., refrigerators; plumbing fixtures; dishwashers; clothes washer and dryers; televisions) and apply to appliances offered for sale in California.

Regional

South Coast Air Quality Management District

The South Coast Air Quality Management District (SCAQMD) adopted a “Policy on Global Warming and Stratospheric Ozone Depletion” on April 6, 1990.³⁷ The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the Air Quality Management Plan (AQMP). In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

- Phase out the use and corresponding emissions of chlorofluorocarbons, methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995;
- Phase out the large quantity use and corresponding emissions of hydrochlorofluorocarbons by the year 2000;

³⁶ CEC, 2015 Integrated Energy Policy Report (2015), p. 41.

³⁷ SCAQMD, SCAQMD’s Historical Activity on Climate Change, <http://www.aqmd.gov/nav/about/initiatives/climate-change>. Accessed April 2021.

- Develop recycling regulations for hydrochlorofluorocarbons (e.g., SCAQMD Rules 1411 and 1415);
- Develop an emissions inventory and control strategy for methyl bromide; and
- Support the adoption of a California GHG emission reduction goal.

In December 2008, SCAQMD adopted an interim 10,000 metric tons CO₂e (MTCO₂e) per year screening level threshold for stationary source/industrial projects for which SCAQMD is the lead agency. SCAQMD continues to consider adoption of significance thresholds for non-industrial development projects.³⁸ Specifically, SCAQMD has proposed combining performance standards and screening thresholds for the residential and commercial sectors. The performance standards primarily focus on energy efficiency measures beyond Title 24 and a screening level of 3,000 MTCO₂e per year based on the relative GHG emissions contribution between residential/commercial sectors and stationary source (industrial) sectors.³⁹

Southern California Association of Governments

The City of Long Beach (City) is a member agency of the Southern California Association of Governments (SCAG). SCAG is the MPO for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for the discussion of regional issues related to transportation, the economy, community development, and the environment. As the federally-designated MPO for the Southern California region, SCAG is mandated by the federal government to research and develop plans for transportation, hazardous waste management, and air quality. Pursuant to California Health and Safety Code Section 40460(b),⁴⁰ SCAG has the responsibility for preparing and approving the portions of the AQMP relating to regional demographic projections and integrated regional land use, housing, employment, and transportation programs, measures, and strategies. SCAG is also responsible under the CAA for determining conformity of transportation projects, plans, and programs with applicable air quality plans.

With regard to GHG emissions, SCAG has prepared and adopted the 2020–2045 RTP/SCS,⁴¹ which includes a Sustainable Communities Strategy that addresses regional development and growth forecasts. The SCAG

38 SCAQMD, Greenhouse Gases: CEQA Significance Thresholds, <http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds>. Accessed April 2021.

39 SCAQMD, Greenhouse Gases: CEQA Significance Thresholds, <http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds>. Accessed April 2021.

40 California Health and Safety Code, Division 26. Air Resources, PART 3. Air Pollution Control Districts, Chapter 5.5. South Coast Air Quality Management District, ARTICLE 5. Plan, Section 40460(b). https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=40460.&lawCode=HSC. Accessed April 2021.

41 Southern California Association of Governments (SCAG), Connect SoCal: 2020-2045 Regional Transportation Plan/Sustainable Communities Strategies Draft, Chapter 1, <https://www.connectsocial.org/Pages/Connect-SoCal-Draft-Plan.aspx>. Accessed April 2021.

2020–2045 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals, with a specific goal of achieving an 8 percent reduction in passenger vehicle GHG emissions on a per capita basis by 2020, 19 percent reduction by 2035, and 21 percent reduction by 2040 compared to the 2005 level.

Local

City of Long Beach General Plan

Local jurisdictions, such as the City of Long Beach, have the authority and responsibility to reduce greenhouse gas emissions through their police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of greenhouse gas emissions resulting from its land use decisions.

The Air Quality Element of the City of Long Beach General Plan was adopted in 1996 and sets forth the goals, objectives, and policies that guide the City in the implementation of its air quality improvement programs and strategies. While the Air Quality Element does not specifically address climate change, reductions in other pollutants typically lead to a reduction in GHG emissions. This Element acknowledges the interrelationships among transportation and land use planning in meeting the City’s goals. The following goals and policies are applicable to the Project.

Goal 7: Reduce emissions through reduced energy consumption.

Policy 7.1: Energy Conservation. Reduce energy consumption through conservation improvements and requirements.

Action 7.1.4: Encourage the incorporation of energy conservation features in the design of all new construction.

Action 7.1.7: Support efforts to reduce GHG emissions that diminish the stratospheric ozone layer.

City of Long Beach Sustainable City Action Plan

Per CEQA Guidelines Section 15183.5, the City adopted the Sustainable City Action Plan on February 2, 2010. The Sustainable City Action Plan is intended to guide operational, policy and financial decisions to create a more sustainable City. The Sustainable City Action Plan includes initiatives, goals and actions that will move the City toward becoming more sustainable. The Sustainable City Action Plan includes chapters related to buildings and neighborhoods, energy, green economy and lifestyle, transportation, urban

nature, waste reduction, and water. Implementation of this plan would contribute to a reduction in the City's overall GHG emissions.

City of Long Beach Climate Action and Adaption Plan

Pursuant to California SB 379, all California cities and counties are required to include climate adaptation and resiliency strategies in their general plans to ensure safety and protection of their community in the future. Currently, the City of Long Beach is in a multi-year effort to develop a Climate Change Action and Adaptation Plan that will provide a framework for creating or updating policies, programs, practices, and incentives for Long Beach residents and businesses to reduce the City's GHG footprint, and ensure the community and physical assets are better protected from the impacts of climate change. The City has prepared a proposed plan and is preparing an EIR for that plan with the expectation that the plan could be adopted in 2022.

The climate action/mitigation element of the Climate Change Action and Adaptation Plan will include the following steps:

- A GHG inventory of emissions from various sectors in the Long Beach community, such as building energy, transportation, solid waste, and wastewater.
- A forecast of projected emissions based on anticipated city growth.
- Development of GHG reduction targets based on the latest climate science, and local, regional, State, and federal context and requirements.
- Analysis of existing sustainability and climate mitigation efforts.
- Development of additional GHG mitigation strategies to reduce future emissions from key sectors.
- Development of a framework for implementing mitigation strategies.
- A plan to monitor the performance of the mitigation strategies using performance metrics to track GHG reduction targets.

City of Long Beach Municipal Code

Section 21.45.400 of the Long Beach Municipal Code (LBMC) further regulates public and private development to include various standards that promote green buildings. A green building, also known as a sustainable building, is a structure that is designed, built, renovated, operated, or reused in an ecological and resource-efficient manner. Green buildings are designed to meet certain objectives such as protecting occupant health; improving employee productivity; using energy, water and other resources more efficiently; and reducing the overall impact on the environment. The City of Long Beach recognizes the benefit of green buildings and establishes a green building program.

City of Long Beach Green Building Ordinance

On May 12, 2009, the Long Beach City Council approved Ordinance No. ORD- 09-0013 (Subsection 21.45.400—Green Building Standards for Public and Private Development). The following types of project shall meet the intent of the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED®) program at the Certified level:

- A new residential or mixed use building of 50 dwelling units and 50,000 gross square feet or more.
- A new mixed use, or non-residential building of 50,000 square feet or more of gross floor area;
- The alteration of an existing residential or mixed use building that results in the addition of 50 dwelling units and 50,000 gross square feet or more;
- The alteration of an existing mixed use, or non-residential building that results in the expansion of 50,000 gross square feet or more; and
- A new construction or substantial rehabilitation project for which the City provides any portion of funding.

4. ENVIRONMENTAL IMPACTS

Thresholds of Significance

To assist in determining whether the proposed Project would have a significant effect on the environment, the City finds the proposed Project may be deemed to have a significant impact related to greenhouse gas emissions if it would:

- Threshold GRE-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.**
- Threshold GRE-2: Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.**

Pursuant to CEQA Guidelines Section 15064.4, the methods suitable for analysis of GHG emissions are:

1. Use a model or methodology to quantify greenhouse gas emissions resulting from a project. The Lead Agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The Lead Agency should explain the limitation of the particular model or methodology selected for use.
2. Rely on a qualitative analysis or performance-based standards.

The City has not adopted a numerical significance threshold for assessing impacts related to GHG emissions. Nor have SCAQMD, OPR, CARB, CAPCOA, or any other state or regional agency adopted a

numerical significance threshold for assessing GHG emissions that is applicable to the Project. However, the SCAQMD released a draft guidance document regarding interim CEQA GHG significance thresholds. The SCAQMD proposed a tiered approach which includes a screening level of 3,000 MTCO₂e per year for commercial/residential projects. For the purpose of evaluating the GHG impacts associated with the proposed Project, this analysis utilizes the proposed 3,000 MTCO₂e per year threshold for commercial/residential projects.

Assessing the significance of a project's contribution to cumulative global climate change involves: (1) developing pertinent inventories of GHG emissions, and (2) considering project consistency with applicable emission reduction strategies and goals. As discussed previously, the City adopted the Sustainable City Action Plan per CEQA Guidelines Section 15183.5. As such, the Project's GHG analysis may "tier off" the City's General Plan and Sustainable City Action Plan to meet project-level CEQA evaluation requirements for GHG emissions.

Consistency Analysis

The Project's GHG impacts are evaluated by assessing the Project's consistency with applicable GHG reduction strategies and local actions adopted by the City. As discussed previously, the City has established goals and actions to reduce the generation and emission of GHGs from both public and private activities in the City's Sustainable City Action Plan.

OPR encourages lead agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses. The City does not have a programmatic mitigation plan to tier from, such as a Greenhouse Gas Emissions Reduction Plan, as recommended in the relevant amendments to the CEQA Guidelines. However, the City has adopted the City's Sustainable City Action Plan that encourages and requires applicable projects to implement energy efficiency measures. In addition, CARB's Climate Change Scoping Plan includes a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, market-based mechanisms, and an AB 32 implementation regulation. Thus, if the proposed Project is designed in accordance with these policies and regulations, the proposed Project would result in a less-than-significant impact, because it would be consistent with the overarching State regulations on GHG reduction (AB 32).

A consistency analysis is provided below and describes the Project's compliance with or exceedance of performance-based standards included in the regulations outlined in the applicable portions of CARB's Climate Change Scoping Plan, SCAG's 2020-2045 RTP/SCS, the City's Sustainable City Action Plan, and the City's General Plan.

5. METHODOLOGY

Methodologies for Evaluating Significance

The analysis of the Project's GHG emissions consists of a quantitative analysis of the GHG emissions generated by the proposed Project and a qualitative analysis of the proposed Project's consistency with adopted GHG-related legislation, plans, and policies. This approach is in accordance with CEQA Guidelines Section 15064.4(a), which affirms the discretion of a lead agency to determine, in the context of a particular project, whether to use quantitative and/or qualitative methodologies to determine the significance of a project's impacts.

Emissions Inventory Modeling

The California Emissions Estimator Model Version 2016.3.2, known as CalEEMod, is the CARB-approved computer program model recommended by SCAQMD for use in the quantification of air quality emissions, including GHG emissions. CalEEMod was developed under the auspices of SCAQMD, with input from other California air districts. CalEEMod utilizes widely accepted models for emissions estimates combined with appropriate data that can be used if site-specific information is not available. For example, CalEEMod incorporates USEPA-developed emission factors; CARB's on-road and off-road equipment emission models, such as EMFAC and OFFROAD;⁴² and studies commissioned by other California agencies, such as the CEC and CalRecycle. Proposed Project development would generate GHG emissions from a number of individual sources during both construction and postconstruction (operational) use of the buildings and related activities (e.g., landscape maintenance). These individual sources collectively are hereafter referred to as the proposed Project's GHG emissions inventory.

CalEEMod version 2016.3.2 was used to quantify the Project's GHG emissions. CalEEMod provides a platform to calculate both construction emissions and operational emissions from a land use development project. The following GHG emission sources covered by CalEEMod model include:

- One-time construction emissions associated with grading, utility installation, building construction, application of architectural coatings (e.g., paint), and paving from emission sources that include both off-road construction equipment and on-road mobile equipment associated with workers, hauling, and the delivery of construction materials to the Project Site. Construction emissions associated with dust control and disposal of waste at landfills were also included.
- Operational emissions associated with the occupancy of development, such as on-road mobile vehicle traffic generated by the land uses; off-road emissions from landscaping equipment; energy (i.e., electricity and natural gas) and water usage in the buildings.

42 EMFAC is an emissions factor model used to calculate emissions rates from on-road vehicles (e.g., passenger vehicles; haul trucks). OFFROAD is an emissions factor model used to calculate emission rates from off-road mobile sources (e.g., construction equipment). CalEEMod version 2016.3.2 utilizes CARB's 2014 version of EMFAC.

6. PROJECT IMPACTS

Threshold GRE-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction

Construction activity impacts are relatively short in duration, so they contribute a relatively small portion of the total lifetime GHG emissions of a project. The combustion of fossil fuels in construction equipment results in GHG emissions of CO₂ and smaller amounts of CH₄ and N₂O. Emissions of GHG would also result from the combustion of fossil fuels from vendor trucks delivering materials and construction worker vehicles commuting to and from the Project Site. Typically, light-duty and medium-duty automobiles and trucks would be used for worker trips and heavy-duty trucks would be used for vendor trips. The vast majority of motor vehicles used for worker trips rely on gasoline as an energy source while motor vehicles used for vendor trips would primarily rely on diesel as an energy source. In addition, GHG emissions-reduction measures for construction equipment are relatively limited. Therefore, in its *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Thresholds*, the SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies.

Construction assumptions used in the analysis of GHG emissions conservatively assume that the proposed Project would be constructed with the most intensive activities occurring on a daily basis. The total emissions from construction of the proposed Project are shown in **Table IV.G-3: Construction Annual Greenhouse Gas Emissions**.

**Table IV.G-3
Construction Annual Greenhouse Gas Emissions**

Year^a	MTCO₂e
2022	416
2023	2,507
2024	1,160
2025	1,000
2026	437
Overall Total	5,520
30-Year Annual Amortized Rate	184

Source: Refer to **Appendix IV.G.1: Section 2.1 Overall Construction**

Note: Totals in table may not appear to add exactly due to rounding in the computer model calculations.

MTCO₂e = metric tons of carbon dioxide equivalent

As recommended by SCAQMD, the total GHG construction emissions were amortized over the 30-year lifetime of the proposed Project (i.e., total construction GHG emissions were divided by 30 to determine annual construction emissions estimate that can be added to the proposed Project’s operational emissions) in order to determine the proposed Project’s annual GHG emissions inventory.⁴³ Total GHG emissions from the construction activities are forecast to be 5,520 MTCO₂e. The total GHG emissions were amortized over a 30-year project lifetime and forecast to be 184 MTCO₂e per year.

Operation

Emissions from mobile and area sources and indirect emissions from energy and water use, wastewater, as well as waste management would occur every year after buildout. This section addresses operational GHG emissions.

Area Sources

The area source GHG emissions included in this analysis result primarily from natural gas fireplaces with additional emissions from landscaping-related fuel combustion sources, such as lawn mowers. GHG emissions due to natural gas combustion in buildings other than from fireplaces are excluded from area sources since they are included in the emissions associated with building energy use.

The GHG emissions for the proposed Project were calculated using CalEEMod. No wood burning fireplaces were assumed, based on SCAQMD Rule 445, though natural gas hearths were included as a conservative analysis. CalEEMod defaults were used for landscape maintenance emissions. Area source emissions are shown in **Table IV.G-4: Area Source Greenhouse Gas Emissions**. As shown in **Table IV.G-4**, proposed Project emissions would result in approximately 50 MTCO₂e per year from area sources.

**Table IV.G-4
Area Source Greenhouse Gas Emissions**

Source	Unmitigated MTCO ₂ e per year
Hearth	46
Landscaping	4
Total	50

Source: Refer to **Appendix IV.G.1** for Greenhouse Gas Emission Output.

43 SCAQMD Governing Board Agenda Item 31, December 8, 2008.

Energy Sources

GHGs are emitted as a result of activities in buildings when electricity and natural gas are used as energy sources. Combustion of any type of fuel emits CO₂ and other GHGs directly into the atmosphere; when this occurs in a building, it is a direct emission source associated with that building. GHGs are also emitted during the generation of electricity from fossil fuels. When electricity is used in a building, the electricity generation typically takes place off-site at the power plant; electricity use in a building generally causes emission in an indirect manner.

Estimated emissions from the combustion of natural gas and other fuels from the implementation of the proposed Project are calculated using the CalEEMod emissions inventory model, which multiplies an estimate of the energy usage by applicable emissions factors chosen by the utility company. GHG emissions from electricity use are directly dependent on the electricity utility provider. In this case, GHG intensity factors for Southern California Edison were selected in CalEEMod. Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building, such as plug-in appliances. CalEEMod calculates energy use from systems covered by Title 24 (e.g., heating, ventilation, and air conditioning [HVAC] system, water heating system, and lighting system); energy use from lighting; and energy use from office equipment, appliances, plug-ins, and other sources not covered by Title 24 or lighting.

Energy source emissions are shown in **Table IV.G-5: Energy Source Greenhouse Gas Emissions**. As shown in **Table IV.G-5**, the proposed Project would forecast to generate 219 MTCO₂e per year from electricity consumption and 231 MTCO₂e per year from natural gas consumption. Therefore, the total energy source emissions for the proposed Project would forecast to be 450 MTCO₂e per year.

**Table IV.G-5
Energy Source Greenhouse Gas Emissions**

Land Use	Electricity	Natural Gas
	Unmitigated MTCO ₂ e per year	Unmitigated MTCO ₂ e per year
Condo/Townhouses	106	130
Single-Family Housing	101	101
Parking	11	0
Total	219	231
Total Energy Emissions	450	

Source: Refer to **Appendix IV.G.1** for Greenhouse Gas Emission Output.

Mobile Sources Emissions

Vehicle trips generated by growth within the Project Site vicinity would result in operational emissions through the combustion of fossil fuels. CO₂ emissions were determined based on the trip rates from the Traffic Impact Analysis (refer to **Appendix IV.L.1** of this Draft EIR). The Project Site is located within 0.5-mile of the major transit stop at Wardlow Road and Pacific Place; the LA Metro Blue Line (or A Line) Wardlow station. Moreover, Long Beach Transit (LBT) and LA Metro provide public transit services in the vicinity of the Project Site. The nearest bus stop could be found east of the Project Site at southeast Magnolia Avenue and Wardlow Road, where LBT Route 181 operates. As shown in **Table IV.G-6: Mobile Source Greenhouse Gas Emissions**, the Project's mobile source emissions would result in 1,800 MTCO_{2e} per year.

**Table IV.G-6
Mobile Source Greenhouse Gas Emissions**

Source	Unmitigated MTCO _{2e} per year
Mobile (trips)	1,800
Total	1,800

*Source: Refer to **Appendix IV.G.1** for Greenhouse Gas Emission Output.*

Solid Waste Emissions

Solid waste generation and associated emissions are calculated using default data found in CalEEMod for the proposed land uses. Disposal of organic waste in landfills can lead to the generation of CH₄, a potent GHG. By generating solid waste, the proposed Project would contribute to the emission of fugitive CH₄ from landfills, as well as CO₂ and N₂O from the operation of trash collection vehicles. As shown in **Table IV.G-7: Solid Waste Source Greenhouse Gas Emissions**, GHG emissions resulting from solid waste would forecast to be 79 MTCO_{2e} per year.

**Table IV.G-7
Solid Waste Source Greenhouse Gas Emissions**

Land Use	Unmitigated MTCO _{2e} per year
Condo/Townhouses	35
Single-Family Housing	44
Total	79

*Source: Refer to **Appendix IV.G.1** for Greenhouse Gas Emission Output.*

Water Consumption and Wastewater Emissions

California’s water conveyance system is energy intensive, with electricity used to pump and treat water. The proposed Project would result in indirect GHG emissions due to water consumption and wastewater generation. Water consumption and wastewater generation, and their associated emissions, are calculated based on the square footage of the proposed uses, using CalEEMod data. As shown in **Table IV.G-8: Water Source Greenhouse Gas Emissions**, the Project’s water and wastewater GHG emissions would forecast to be 61 MTCO₂e per year.

**Table IV.G-8
Water Source Greenhouse Gas Emissions**

Land Use	Unmitigated MTCO ₂ e per year
Condo/Townhouses	41
Single-Family Housing	20
Total	61

*Source: Refer to **Appendix IV.G.1** for Greenhouse Gas Emission Output.*

Total Emissions

As shown in **Table IV.G-9: Operational Greenhouse Gas Emissions**, the proposed Project is forecasted to generate a total of 2,622 MTCO₂e per year. As such, the proposed Project would not exceed SCAQMD’s proposed threshold of 3,000 MTCO₂e per year for commercial/residential projects. Moreover, the proposed Project would incorporate energy and water efficiency design features to enhance efficiency in all aspects of the buildings’ life cycle based on the latest CALGreen and Title 24 Building Energy Efficiency standards, as amended by the City, for new residential construction. The proposed Project falls under Section 21.45.400.C.1.a of the LBMC which requires new residential or mixed use buildings of fifty (50) dwelling units and fifty thousand (50,000) gross square feet or more to meet the intent of LEED at the certified level; thereby further reducing the Project’s GHG emissions as CalEEMod does not account for such reductions. As such, impacts related to direct and indirect emissions of greenhouse gas emissions would be less than significant.

**Table IV.G-9
Operational Greenhouse Gas Emissions**

Source	Unmitigated MTCO ₂ e per year
Construction (amortized)	184
Area	50
Energy	449
Mobile	1,800
Waste	79
Water	60
Total	2,622
SCAQMD Proposed Threshold	3,000
Exceeds Threshold?	No

Source: CalEEMod Emissions calculations are provided in **Appendix IV.G.1: Greenhouse Gas Emissions Model Output**.

Abbreviation: MTCO₂e = metric tons of carbon dioxide emissions.

Threshold IV.G-2: Would the project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Compliance with applicable GHG emission reduction plans would result in a less than significant project-level and cumulative impact. The following section describes the extent the proposed Project complies with or exceeds the performance-based standards included in the regulations and policies outlined in CARB’s Climate Change Scoping Plan, SCAG’s 2020-2045 RTP/SCS, the City’s Sustainable City Action Plan, or the City’s General Plan. Key regulations incorporated into this analysis include California Code of Regulations, Title 20 and Title 24.

Climate Change Scoping Plan

Table IV.G-10: Climate Change Scoping Plan Project Consistency Analysis contains a list of GHG-reducing strategies set forth in the Climate Change Scoping Plan that are applicable to the proposed Project. The analysis presented in **Table IV.G-10** describes the proposed Project’s compliance and consistency with these strategies as outlined in the State’s Climate Change Scoping Plan to reduce GHG emissions. As shown in **Table IV.G-10**, the proposed Project would not conflict with the policies included in the Climate Change Scoping Plan.

Table IV.G-10
Climate Change Scoping Plan Project Consistency Analysis

Regulation, Actions, and Strategies	Responsible Party(ies)	Proposed Project Consistency Analysis
<p>California Code of Regulations (CCR), Title 20: The 2016 Appliance Efficiency Regulations, adopted by the California Energy Commission (CEC), include standards for new appliances (e.g., refrigerators) and lighting, if they are sold or offered for sale in California.</p>	State and CEC	<p>No Conflict. The proposed Project would develop new residential uses that would be outfitted with appliances and lighting that comply with CEC's standards. These standards are included in the default parameters provided in CalEEMod and are reflected in the Project-related GHG emissions provided in Table IV.G-9.</p>
<p>CCR, Title 24, Building Standards Code: The 2019 Building Energy Efficiency Standards contained in Title 24, Part 6 (also known as the California Energy Code), requires the design of building shells and building components to conserve energy.</p> <p>The California Green Building Standards Code (Part 11, Title 24) established mandatory and voluntary standards on planning and design for sustainable site development, energy efficiency (extensive update of the California Energy Code), water conservation, material conservation, and internal air contaminants.</p>	State and CEC	<p>No Conflict. Consistent with regulatory requirements, the proposed Project would comply with applicable provisions of the California Green Building Standards Code.</p> <p>Moreover, the proposed Project falls under Section 21.45.400.C.1.a of the LBMC which requires new residential or mixed use buildings of fifty (50) dwelling units and fifty thousand (50,000) gross square feet or more to meet the intent of LEED at the certified level.</p>
<p>Assembly Bill 1109 (AB 1109): The Lighting Efficiency and Toxic Reduction Act establishes standards structured to reduce average statewide electrical energy consumption by not less than 25 percent from the 2007 levels for indoor commercial and outdoor lighting by 2018.^b</p>	State/ Manufacturers	<p>No Conflict. The proposed Project would not conflict with the requirements under AB 1109 because it would comply with local and state green building programs and incorporates energy efficient lighting and other required measures that would reduce electricity consumption.</p>
<p>By 2019, develop pricing policies to support low- GHG transportation (e.g., low-emission vehicle zones for heavy duty, road user, parking pricing, transit discounts).</p>	CalSTA, Caltrans, CTC, OPR/SGC, CARB	<p>No Conflict. The proposed Project would not conflict with this policy as this policy would not be implemented at the project level.</p>
<p>CCR, Title 24, Building Standards Code: The California Green Building Standards Code (Part 11, Title 24) includes water efficiency requirements for new residential and non-residential uses, in which buildings shall demonstrate a 20-percent overall water use reduction.</p>	State	<p>No Conflict. Consistent with regulatory requirements, the proposed Project would comply with applicable provisions of the California Green Building Standards Code.</p> <p>Moreover, the proposed Project falls under Section 21.45.400.C.1.a of the LBMC which requires new residential or mixed use buildings of fifty (50) dwelling units and fifty thousand (50,000) gross square feet or more to meet the intent of LEED at the certified level.</p>
<p>CARB In-Use Off-Road Regulation: CARB's in-use off-road diesel vehicle regulation</p>	CARB	<p>No Conflict. Construction contractors that would comply with this regulation would be</p>

Regulation, Actions, and Strategies	Responsible Party(ies)	Proposed Project Consistency Analysis
<p>(“Off-Road Diesel Fleet Regulation”) requires the owners of off-road diesel equipment fleets to meet fleet average emissions standards pursuant to an established compliance schedule.</p>		<p>used throughout proposed Project development.</p>
<p>CARB In-Use On-Road Regulation: CARB’s in-use on- road heavy-duty vehicle regulation (“Truck and Bus Regulation”) applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds.^a</p>	<p>CARB</p>	<p>No Conflict. Construction contractors that would comply with this regulation would be used throughout proposed Project development.</p>
<p>Implement the Short-Lived Climate Pollutant Strategy by 2030:</p> <ul style="list-style-type: none"> • 40-percent reduction in methane and hydrofluorocarbon emissions below 2013 levels. • 50-percent reduction in black carbon emissions below 2013 levels. 	<p>CARB, CalRecycle, CDFA, SWRCB, Local air districts</p>	<p>No Conflict. Senate Bill 605 (SB 605) was adopted in 2014 which directs CARB to develop a comprehensive Short-Lived Climate Pollutant (SLCP) strategy. Senate Bill 1383 was later adopted in 2016 to require CARB to set statewide 2030 emission reduction targets of 40 percent for methane and hydrofluorocarbons and 50 percent black carbon emissions below 2013 levels.^b</p> <p>The proposed Project would comply with the CARB SLCP Reduction Strategy which limits the use of hydrofluorocarbons for refrigeration uses.</p>
<p>By 2019, develop regulations and programs to support organic waste landfill reduction goals in the SLCP and SB 1383.</p>	<p>CARB, CalRecycle, CDFA, SWRCB, Local air districts</p>	<p>No Conflict. Under SB 1383, the California Department of Resources Recycling and Recovery (CalRecycle) is responsible for achieving a 50 percent reduction in the level of statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025. In October 2020, CalRecycle released the proposed regulation text for the Short-lived Climate Pollutants (SLCP): Organic Waste Reductions program.^c</p> <p>The proposed Project would not conflict with AB 341 which requires not less than 75 percent of solid waste generated be source reduced through recycling, composting or diversion. Reduction in solid waste generated by the proposed Project would reduce overall GHG emissions. Compliance with AB 341 would also help achieve the goals of SB 1383.</p>

^a CARB, *Truck and Bus Regulation—On-Road Heavy Duty Diesel Vehicles (In-Use) Regulation*.
^b CARB, *Reducing Short-Lived Climate Pollutants in California*.
^c CalRecycle, *Short-Lived Climate Pollutants (SLCP): Organic Waste Reductions Proposed Methane Emissions Reductions, Proposed Regulation Text, October 2020*.
 Source: Meridian Consultants, 2021.

SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy

A discussion of the Project’s consistency with the policies applicable to individual development projects in the 2020-2045 RTP/SCS is presented in **Table IV.G-11: SCAG 2020-2045 RTP/SCS Project Consistency Analysis**, below. As shown in **Table IV.G-11**, the proposed Project would not conflict with the 2020-2045 RTP/SCS.

**Table IV.G-11
SCAG 2020-2045 RTP/SCS Project Consistency Analysis**

Goals and Policies	Consistency Analysis
<p>Goal 2: Improve mobility, accessibility, reliability, and travel safety for people and goods.</p>	<p>No Conflict. The Project Site is located within 0.5-mile of the major transit stop at Wardlow Road and Pacific Place; the LA Metro Blue Line (or A Line) Wardlow station. Moreover, Long Beach Transit (LBT) and LA Metro provide public transit services in the vicinity of the Project Site. The proposed Project would include 5 acres of public open space that would connect to the pedestrian paths within the residential complex, the adjacent public sidewalks, and the existing Baker Street Park trails. Additionally, the proposed Project would include bike parking consistent with the City’s Bicycle Master Plan. The location of the proposed Project encourages a variety of transportation options and access.</p>
<p>Goal 3: Enhance the preservation, security, and resilience of the regional transportation system.</p>	<p>No Conflict. While not necessarily applicable on a project-specific basis, the proposed Project would support this goal by improving the viability of alternative forms of transportation through higher density development. Moreover, the proposed Project would include pedestrian paths and bike parking consistent with the City’s Bicycle Master Plan. A robust variety of transportation options helps to ensure the mobility need of residents and visitors are met. Additionally, as discussed in the Traffic Impact Analysis (Appendix IV.L.1), the proposed Project would not result in significant transportation impacts.</p>
<p>Goal 4: Increase person and goods movement and travel choices within the transportation system.</p>	<p>No Conflict. While not necessarily applicable on a project-specific basis, the proposed Project would support this goal by improving local access to alternative forms of transportation, with appropriate design considerations to account for future population growth and multimodal choices.</p>
<p>Goal 5: Reduce greenhouse gas emissions and improve air quality.</p>	<p>No Conflict. The location of the proposed Project promotes the use of a variety of transportation options, which includes walking and the use of public transportation. As mentioned previously, the proposed Project would include pedestrian paths and bike parking</p>

Goals and Policies	Consistency Analysis
	<p>consistent with the City’s Bicycle Master Plan. These features would serve to reduce VMT which generates GHG’s.</p>
<p>Goal 6: Support healthy and equitable communities.</p>	<p>No Conflict. The proposed Project would place new residential units near a major transit stop. The location of the proposed Project promotes the use of a variety of transportation options, which includes walking and the use of public transportation. As mentioned previously, the proposed Project would include pedestrian paths and bike parking consistent with the City’s Bicycle Master Plan.</p>
<p>Goal 7: Adapt to a changing climate and support an integrated regional development pattern in transportation network.</p>	<p>No Conflict. This policy is directed towards SCAG to support regional development patterns areas. However, the proposed Project is an infill development located near a major transit stop which is consistent with this policy. In regard to adaptation to a changing climate, the proposed Project would comply with the California Green Building Standards Code (CALGreen). Moreover, the proposed Project falls under Section 21.45.400.C.1.a of the LBMC which requires new residential or mixed use buildings of fifty (50) dwelling units and fifty thousand (50,000) gross square feet or more to meet the intent of LEED at the certified level.</p>
<p>Goal 8: Leverage new transportation technologies and data-driven solutions that result in more efficient travel.</p>	<p>No Conflict. This policy is directed towards SCAG to leverage the use of new transportation technologies using data-driven solutions. However, as stated above, the proposed Project is an infill development located near a major transit stop which is consistent with this policy.</p>
<p>Goal 9: Encourage development of diverse housing types in areas that are supported by multiple transportation options.</p>	<p>No Conflict. The proposed Project includes 74 detached single-family condominium units, 99 attached townhouse units, and 53 attached condominium units. Of these, 5percent would be set aside as affordable housing. The Project’s units would be contributing to a range of housing choice and available to all persons, including existing employees and residents in the City. As stated above, the Project Site is located in an urbanized area in the City and is located near a major transit stop. The proposed Project would provide residents with convenient access to a major transit stop and opportunities for walking and biking as well.</p>
<p>Goal 10: Promote conservation of natural and agricultural lands and restoration of habitats.</p>	<p>No Conflict. This policy is directed towards SCAG and does not directly apply to the Project. However, the proposed Project includes bioremediation of an infill site and treating contaminated soil and subsurface material to remove harmful pollutants which may affect wildlife. In addition to developing residential uses, the proposed Project would include 5 acres of public open space.</p>

Goals and Policies	Consistency Analysis
<p>Guiding Principle 2: Place high priority for transportation funding in the region on projects and programs that improve mobility, accessibility, reliability and safety, and that preserve the existing transportation system.</p>	<p>No Conflict. This policy is directed towards SCAG in allocating transportation system funding. However, the proposed Project would contribute to a safe, well maintained, and efficient multimodal transportation system. As discussed in the Traffic Impact Analysis (Appendix IV.L.1), the proposed Project would not result in significant transportation impacts.</p>
<p>Guiding Principle 3: Assure that land use and growth strategies recognize local input, promote sustainable transportation options, and support equitable and adaptable communities.</p>	<p>No Conflict. This Goal is directed towards SCAG and the City and does not apply it to individual development projects. However, as stated above, the Project Site is located in an urbanized area in the City and is located near a major transit stop.</p>
<p>Guiding Principle 4: Encourage RTP/SCS investments in strategies that collectively result in reduced non-recurrent congestion and demand for single occupancy vehicle use, by leveraging new transportation technologies and expanding travel choices.</p>	<p>No Conflict. This policy relates to SCAG goals in supporting investments and strategies to reduce congestion and the use of single occupancy vehicles. However, the proposed Project would support the policy as it is located near a major transit stop.</p>
<p>Core Vision Topic 1: Sustainable Development Through our continuing efforts to better align transportation investments and land use decisions, we strive to improve mobility and reduce greenhouse gases by bringing housing, jobs and transit closer together.</p>	<p>No Conflict. The proposed Project would comply with the California Green Building Standards Code (CALGreen), and would incorporate eco-friendly building materials, systems and high-performance building envelopment. Moreover, the proposed Project falls under Section 21.45.400.C.1.a of the LBMC which requires new residential or mixed use buildings of fifty (50) dwelling units and fifty thousand (50,000) gross square feet or more to meet the intent of LEED at the certified level.</p> <p>The proposed Project would place new residential units near a major transit stop. The location of the proposed Project promotes the use of a variety of transportation options, which includes walking and the use of public transportation. As mentioned previously, the proposed Project would include bike parking consistent with the City’s Bicycle Master Plan.</p>
<p>Core Vision Topic 4: Transit Backbone Expanding the transit network and fostering development in transit-oriented communities is central to the region’s plan for meeting mobility and sustainability goals while continuing to grow the regional economy.</p>	<p>No Conflict. This core vision topic is directed towards SCAG goals for the region and is not directly applicable to individual residential development projects. However, as stated above, the proposed Project would place new residential units near a major transit stop. The location of the proposed Project promotes the use of a variety of transportation options, which includes walking and the use of public transportation. As mentioned previously, the proposed Project would include pedestrian paths and bike parking consistent with the City’s Bicycle Master Plan</p>
<p>Core Vision Topic 5: Complete Streets Creating “complete streets” that are safe and inviting to all roadway users is critical to increasing mobility</p>	<p>No Conflict. This core vision topic is directed toward SCAG and is not specifically applicable to the Project. Nonetheless, the Project Site’s location near a major transit stop and the availability of bike parking located</p>

Goals and Policies	Consistency Analysis
<p>choices, reducing traffic fatalities and serious injuries and meeting greenhouse gas reduction targets.</p>	<p>on the Project Site would promote a variety of transportation options.</p>
<p>Core Vision Topic 6: Goods Movement The efficient movement of goods is critical to a strong economy and improves quality of life in the SCAG region by providing jobs and access to markets through trade. However, increased volumes of goods moving across the transportation system contribute to greater congestion, safety concerns and harmful emissions. It is critical to integrate land use decisions and technological advancements to minimize environmental and health impacts while fostering continued growth in trade and commerce.</p>	<p>No Conflict. This core vision topic is directed toward SCAG and is not specifically applicable to the Project. Nonetheless, the Project Site’s location near a major transit stop and the availability of bike parking located on the Project Site would promote a variety of transportation options to minimize environmental health impacts while fostering continued economic growth.</p>
<p>Sustainable Community Strategy 1: Focus Growth Near Destinations and Mobility Options</p>	
<p>Sustainable Community Strategy 1a: Emphasize land use patterns that facilitate multimodal access to work, educational and other destinations.</p>	<p>No Conflict. The location of the proposed Project promotes the use of a variety of transportation options, which includes walking and the use of public transportation. As mentioned previously, the proposed Project would include pedestrian paths and bike parking consistent with the City’s Bicycle Master Plan.</p>
<p>Sustainable Community Strategy 1b: Focus on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets</p>	<p>No Conflict. This strategy is directed toward SCAG and is not specifically applicable to the Project. Nonetheless, the proposed Project includes the development 74 detached single-family condominium units, 99 attached townhouse units, and 53 attached condominium units near a major transit stop. Further, the location of the proposed Project promotes the use of a variety of transportation options, which includes walking and the use of public transportation.</p>
<p>Sustainable Community Strategy 1c: Plan for growth near transit investments and support implementation of first/last mile strategies</p>	<p>No Conflict. This strategy is directed toward SCAG and is not specifically applicable to the Project. Nonetheless, the proposed Project includes the development 74 detached single-family condominium units, 99 attached townhouse units, and 53 attached condominium units near a major transit stop. As discussed in the Project’s Initial Study (see Appendix IV.L.1) the proposed Project is expected to result in an increase of approximately 624 residents, based on the City’s average household size as determined by the United States census bureau.</p>
<p>Sustainable Community Strategy 1d: Promote the redevelopment of underperforming retail developments and other outmoded nonresidential uses.</p>	<p>No Conflict. This strategy is directed toward SCAG and is not specifically applicable to the Project. Nonetheless, the proposed Project is an infill residential development that would add housing and increase the utilization of the Project Site, which is currently vacant.</p>
<p>Sustainable Community Strategy 1e: Prioritize infill and redevelopment of underutilized land to accommodate</p>	<p>No Conflict. This strategy is directed towards SCAG and the City and does not apply to individual development projects. Nonetheless, the proposed Project is an infill residential development that would add housing and</p>

Goals and Policies	Consistency Analysis
new growth, increase amenities and connectivity in existing neighborhoods.	increase the utilization of the Project Site, which is currently vacant. As mentioned previously, the proposed Project would include pedestrian paths and bike parking consistent with the City’s Bicycle Master Plan.
Sustainable Community Strategy 1f: Encourage design and transportation options that reduce the reliance on number of solo car trips (this could include mixed uses or locating and orienting close to existing destinations).	No Conflict. The location of the proposed Project promotes the use of a variety of transportation options, which includes walking and the use of public transportation. As mentioned previously, the proposed Project would include pedestrian paths and bike parking consistent with the City’s Bicycle Master Plan. Thus, the proposed Project would reduce VMT and promote alternatives to driving.
Sustainable Community Strategy 2: Promote Diverse Housing Choices	
Sustainable Community Strategy 2a: Preserve and rehabilitate affordable housing and prevent displacement.	No Conflict. Strategy 2a is directed towards SCAG and not does apply to the Project. Nonetheless, the proposed Project will provide a variety of dwelling units including 74 detached single-family condominium units, 99 attached townhouse units, and 53 attached condominium units. Of these, 5percent would be set aside as affordable housing.
Sustainable Community Strategy 2b: Identify funding opportunities for new workforce and affordable housing development.	No Conflict. This strategy is directed towards SCAG in identifying funding opportunities for affordable housing development. Nonetheless, as stated above, the proposed Project is dedicating approximately 5percent of proposed units as affordable housing.
Sustainable Community Strategy 2d: Provide support to local jurisdictions to streamline and lessen barriers to housing development that supports reduction of greenhouse gas emissions.	No Conflict. This strategy is directed towards SCAG and does not apply to individual development projects. Nonetheless, the proposed Project is an infill development located near a major transit stop. The location of the proposed Project promotes the use of a variety of transportation options, which includes walking, biking, and the use of public transportation. As discussed in Section IV.B: Air Quality and Section IV.G: Greenhouse Gas Emissions , operational emissions and greenhouse gas emissions generated by the proposed Project’s construction and operational activities would not exceed the regional thresholds of significance set by the SCAQMD and therefore, the proposed Project would be consistent with this strategy.
Sustainable Community Strategy 3: Leverage Technology Innovations	
Sustainable Community Strategy 3a: Promote low emission technologies such as neighborhood electric vehicles, shared rides hailing, car sharing, bike sharing and scooters by providing supportive and safe infrastructure such as dedicated lanes, charging and parking /drop off space.	No Conflict. This strategy is directed towards SCAG and does not apply to individual development projects. Nonetheless, the Project’s 452 off-street parking garages would allow for electric vehicle (EV) charging.

Goals and Policies	Consistency Analysis
<p>Sustainable Community Strategy 3c: Identify ways to incorporate “micro-power grids” in communities, for example solar energy, hydrogen fuel cell power storage and power generation.</p>	<p>No Conflict. No Conflict. This strategy is directed towards SCAG and does not apply to individual development projects. Nonetheless, the proposed Project would comply with the California Green Building Standards Code (CALGreen), and would incorporate eco-friendly building materials, systems, and features wherever feasible, including Energy Star appliances, water saving/low flow fixtures, non-VOC paints/adhesives, drought tolerant planting, and high-performance building envelopment.</p> <p>Moreover, the proposed Project falls under Section 21.45.400.C.1.a of the LBMC which requires new residential or mixed use buildings of fifty (50) dwelling units and fifty thousand (50,000) gross square feet or more to meet the intent of LEED at the certified level.</p>
<p>Sustainable Community Strategy 4: Support Implementation of Sustainability Policies</p>	
<p>Sustainable Community Strategy 4a: Pursue funding opportunities to support local sustainable development implementation projects that reduce greenhouse gas emissions.</p>	<p>No Conflict. This strategy is directed towards SCAG and does not apply to individual development projects. Nonetheless, the proposed Project is an infill development located near a major transit stop. The location of the proposed Project promotes the use of a variety of transportation options, which includes walking, biking, and the use of public transportation. As discussed in Section IV.B: Air Quality and Section IV.G: Greenhouse Gas Emissions, operational emissions and greenhouse gas emissions generated by the Project’s construction and operational activities would not exceed the regional thresholds of significance set by the SCAQMD and therefore, the proposed Project would be consistent with this strategy.</p>
<p>Sustainable Community Strategy 5: Promote a Green Region</p>	
<p>Sustainable Community Strategy 5b: Support local policies for renewable energy production, reduction of urban heat islands and carbon sequestration.</p>	<p>No Conflict. This strategy is directed towards SCAG and does not apply to individual development projects. Nonetheless, the proposed Project would provide new outdoor open space including 5 acres of public open space which would connect to the pedestrian paths within the residential complex, the adjacent public sidewalks, and the existing Baker Street Park trails.</p>
<p>Sustainable Community Strategy 5d: Promote more resource efficient development focus on conservation, recycling and reclamation.</p>	<p>No Conflict. This strategy is directed towards SCAG and does not apply to individual development projects. Nonetheless, the proposed Project would comply with the California Green Building Standards Code (CALGreen), and would incorporate eco-friendly building materials, systems and high-performance building envelopment. Moreover, the proposed Project falls under Section 21.45.400.C.1.a of the LBMC which requires new residential or mixed use buildings of fifty (50) dwelling units and fifty thousand (50,000) gross square feet or more to meet the intent of LEED at the</p>

Goals and Policies	Consistency Analysis
	certified level. As such, the proposed Project would be consistent with promotion of efficient development and a focus on conservation.
Sustainable Community Strategy 5e: Preserve, enhance, and restore regional wildlife connectivity.	No Conflict. This policy is directed towards SCAG and does not directly apply to the Project. As discussed above, development of the proposed Project would not remove any areas that have significant value as wildlife habitats given the fully graded and disturbed nature of the Project Site.
Sustainable Community Strategy 5f: Reduce consumption of resource areas, including agricultural land.	No Conflict. This policy is directed towards SCAG and does not directly apply to the Project. Nonetheless, development of the proposed Project would not remove any areas that have significant value as agricultural lands given the fully graded and disturbed nature of the Project Site.
Sustainable Community Strategy 5g: Identify ways to improve access to public park space.	No Conflict. This strategy is directed towards SCAG and does not apply to individual development projects. Nonetheless, the proposed Project would provide new outdoor open space including 5 acres of public open space which would connect to the pedestrian paths within the residential complex, the adjacent public sidewalks, and the existing Baker Street Park trails. The looped trail in the proposed open space area would provide parcourse exercise equipment, a look-out point, and a butterfly garden along the route. The center of the looped trail will include a turf area large enough to accommodate a youth soccer field.

Source: SCAG, Connect SoCal, 2020–2045 RTP/SCS, September 2020.

City of Long Beach Sustainable City Action Plan

A discussion of the Project’s consistency with the relevant goals from the Long Beach Sustainable City Action Plan is presented in **Table IV.G-12: Sustainable City Action Plan Project Consistency Analysis** below. As shown in **Table IV.G-12**, the proposed Project would not conflict with the City’s Sustainable City Action Plan.

Table IV.G-12
Sustainable City Action Plan Project Consistency Analysis

Goals	Consistency
Buildings and Neighborhoods	
At least 5 million square feet of privately developed LEED certified (or equivalent) green buildings by 2020	No Conflict. The proposed Project falls under Section 21.45.400.C.1.a of the LBMC which requires new residential or mixed use buildings of fifty (50) dwelling units and fifty thousand (50,000) gross square feet or more to meet the intent of LEED at the certified level. As such, the proposed Project would be consistent with this goal.
Plant at least 10,000 trees in Long Beach by 2020	No Conflict. The proposed Project would provide approximately 9.17 acres of landscaped area and open space, with an estimated 520 trees planted.
50 percent of Long Beach residents work in Long Beach by 2020	No Conflict. The proposed Project will provide a variety of dwelling units for Long Beach residents including 74 detached single-family condominium units, 99 attached townhouse units, and 53 attached condominium units.
Energy	
Reduce community electricity use by 15 percent by 2020	No Conflict. The proposed project would comply with the most recent Title 24 energy efficiency requirements, which would increase energy efficiency. Moreover, the proposed Project falls under Section 21.45.400.C.1.a of the LBMC which requires new residential or mixed use buildings of fifty (50) dwelling units and fifty thousand (50,000) gross square feet or more to meet the intent of LEED at the certified level.
Reduce community natural gas use by 10 percent by 2020	
Facilitate the development of at least 8 Megawatts of solar energy within the community (private rooftops) by 2020.	No Conflict. In accordance with Title 24, the Project's residential uses would be required to be solar ready. Specifically, the proposed development's roofs must be designed with conduit pathways and clear, available space for a solar system regardless of whether or not the building owner expects to purchase a system.
Transportation	
Increase public transit ridership by 25 percent by 2016	No Conflict. The Project Site is located within 0.5-mile of the major transit stop at Wardlow Road and Pacific Place; the LA Metro Blue Line (or A Line) Wardlow station. Moreover, LBT and LA Metro provide public transit services in the vicinity of the Project Site.
Increase bike ridership from 1percent to 10 percent by 2016	
Annual reduction in average pounds of solid waste generated per person per day	No Conflict. In the City, most trash is taken to the Southeast Resource Recovery Center (SERRF) to be incinerated and converted to electricity. Moreover, the City has an extensive recycling program that also helps reduce the amount of trash sent to SERRF and landfills. The proposed Project would participate in City programs intended to continue solid waste diversion.

Source: City of Long Beach, Sustainable City Action Plan, February 2010.

City of Long Beach General Plan

The Air Quality Element of the City of Long Beach General Plan was adopted in 1996 and sets forth the goals, objectives, and policies that guide the City in the implementation of its air quality improvement programs and strategies. While the Air Quality Element does not specifically address climate change, reductions in other pollutants typically lead to a reduction in GHG emissions. This Element acknowledges the interrelationships among transportation and land use planning in meeting the City's goals. The following goals and policies are applicable to the Project.

Goal 7: Reduce emissions through reduced energy consumption.

Policy 7.1: Energy Conservation. Reduce energy consumption through conservation improvements and requirements.

Action 7.1.4: Encourage the incorporation of energy conservation features in the design of all new construction.

Action 7.1.7: Support efforts to reduce GHG emissions that diminish the stratospheric ozone layer.

The proposed Project would be required to comply with the most recent Title 24 standards and the CalGreen Code. In addition to complying with Title 24 and CALGreen, the proposed Project would provide means for indirect energy savings, such as permitting individual solar panels to be applied to the proposed residential uses. This would be installed in compliance with Title 24 Section 110.10, which includes mandatory regulations for solar-ready buildings and would not preclude the use of alternate energy sources. Moreover, consistent with Section 21.45.400 of the LBMC, the proposed Project would be required to meet the LEED® program at the certified level and comply with the City's green building program. Green buildings are designed to meet certain objectives such as protecting occupant health; improving employee productivity; using energy, water, and other resources more efficiently; and reducing the overall impact to the environment.

The Project Site is located within 0.5-mile of the major transit stop at Wardlow Road and Pacific Place; the LA Metro Blue Line (or A Line) Wardlow station. Moreover, LBT and LA Metro provide public transit services in the vicinity of the Project Site. The proposed Project would include 5 acres of public open space that would connect to the pedestrian paths within the residential complex, the adjacent public sidewalks, and the existing Baker Street Park trails. Additionally, the proposed Project would include bike parking consistent with the City's Bicycle Master Plan. The location of the proposed Project encourages a variety of transportation options which would reduce VMTs. As such, the proposed Project would not conflict with the goals and policies in the General Plan's Air Quality Element.

Conclusion

As shown in **Table IV.G-9**, the proposed Project would not exceed SCAQMD's proposed threshold of 3,000 MTCO_{2e} per year threshold for commercial/residential projects. Moreover, as shown in **Table IV.G-10** through **Table IV.G-12**, the proposed Project would not conflict with CARB's Climate Change Scoping Plan, SCAG's 2020-2045 RTP/SCS, the City's Sustainable City Action Plan, or the City's General Plan. As such, impacts would be less than significant.

7. CUMULATIVE IMPACTS

A listing of potential related projects located in the Project vicinity that might be developed or under construction within the same timeframe as the Project is located in **Table III-1: List of Related Projects in Section III: Environmental Setting**.

To achieve Statewide goals, CARB is continuing its ongoing process of updating, establishing, and implementing regulations to reduce Statewide GHG emissions. Currently, no applicable quantitative significance thresholds or specific reduction targets exist to assist in determining significance at the project or cumulative level. Additionally, currently no generally accepted methodology exists to determine whether GHG emissions associated with a specific project represent new emissions or existing and/or displaced emissions. Therefore, consistent with CEQA Guidelines Section 15064h(3), the City as a lead agency, has determined that the proposed Project's contribution to cumulative GHG emissions would be less than significant if the proposed Project is consistent with the applicable regulatory plans and policies to reduce GHG emissions. Accordingly, the analysis above took into account the potential for the proposed Project to contribute to the cumulative impact of global climate change. As stated above, the proposed Project would not result in a potentially significant impact because it would not conflict with CARB's Climate Change Scoping Plan, SCAG's 2020-2045 RTP/SCS, the City's Sustainable City Action Plan, or the City's General Plan. As such, cumulative impacts would be less than significant.

Related projects would generate both construction and operational GHG emissions during the life of each project. Given that the proposed Project would not have a potentially significant impact to GHG emissions, the proposed Project's contribution to cumulative impacts is not considered a significant impact.

8. MITIGATION MEASURES

Impacts related to greenhouse gas emissions are less than significant and no mitigation measures are required.

9. LEVEL OF SIGNIFICANCE AFTER MITIGATION

No mitigation measures are required; impacts related to greenhouse gas emissions would remain less than significant.