

IV. Environmental Impact Analysis

E. 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 these GHGs. Calculation worksheets, assumptions, and model outputs used in the analysis are contained in Appendix B to this Draft EIR.

2. Environmental Setting

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

Earth's natural warming process is known as the "greenhouse effect." It is called the greenhouse effect because Earth and the atmosphere surrounding it are similar to a greenhouse with glass panes in that solar radiation (sunlight) can pass into Earth's atmosphere but radiative heat is prevented from escaping, thus warming Earth's atmosphere. Some levels of GHGs keep the average surface temperature of Earth close to a hospitable 60 degrees Fahrenheit. However, it is believed that excessive concentrations of anthropogenic GHGs in the atmosphere can result in increased global mean temperatures, with associated adverse climatic and ecological consequences.¹

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

¹ USEPA, *Climate Change: Basic Information*, www.epa.gov/climatechange/basics/, accessed January 25, 2017.

and the decomposition of solid waste. Scientists refer to the global warming context of the past century as the “enhanced greenhouse effect” to distinguish it from the natural greenhouse effect.²

Global GHG emissions due to human activities have grown since pre-industrial times. as reported by the United States Environmental Protection Agency (USEPA), global carbon emissions from fossil fuels increased by over 16 times between 1900 and 2008 and by about 1.5 times between 1990 and 2008. In addition, in the Global Carbon Budget 2014 report, published in September 2014, atmospheric carbon dioxide (CO₂) concentrations in 2013 were found to be 43 percent above the concentration at the start of the Industrial Revolution, and the present concentration is the highest during at least the last 800,000 years.³ Global increases in CO₂ concentrations are due primarily to fossil fuel use, with land use change providing another significant but smaller contribution. With regard to emissions of non-CO₂ GHG, these have also increased significantly since 1990.⁴ In particular, studies have concluded that it is very likely that the observed increase in methane (CH₄) concentration is predominantly due to agriculture and fossil fuel use.⁵

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

² Center for Climate and Energy Solutions, *Climate Change 101: Understanding and Responding to Global Climate Change*.

³ C. Le Quéré, et al., *Global Carbon Budget 2014*, (*Earth System Science Data*, 2015, doi:10.5194/essd-7-47-2015).

⁴ USEPA, *Global Greenhouse Gas Emissions Data*, www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data, accessed January 25, 2017.

⁵ USEPA, *Atmospheric Concentrations of Greenhouse Gas*, updated June 2015.

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

With regard to the adverse effects of global warming, as reported by the Southern California Association of Governments (SCAG), “[g]lobal warming poses a serious threat to the economic well-being, public health and natural environment in southern California and beyond. The potential adverse impacts of global warming include, among others, a reduction in the quantity and quality of water supply, a rise in sea level, damage to marine and other ecosystems, and an increase in the incidences of infectious diseases. Over the past few decades, energy intensity of the national and state economy has been declining due to the shift to a more service-oriented economy. California ranked fifth lowest among the states in CO₂ emissions from fossil fuel consumption per unit of Gross State Product. However, in terms of total CO₂ emissions, California is second only to Texas in the nation and is the 12th largest source of climate change emissions in the world, exceeding most nations. The SCAG region, with close to half of the State’s population and economic activities, is also a major contributor to the global warming problem.”⁷

a. GHG Background

GHGs include CO₂, CH₄, nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).⁸ Carbon dioxide is the most abundant GHG. 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. Forest fires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions. A general description of the GHGs is provided in Table IV.E-1 on page IV.E-4.

Global Warming Potentials (GWPs) are one type of simplified index based upon radiative properties used to estimate the potential future impacts of emissions of different gases upon the climate system. GWP is based on a number of factors, including the radiative efficiency (heat-absorbing ability) of each gas relative to that of CO₂, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of CO₂. The larger the GWP, the more that a given gas warms the Earth compared to CO₂ over that time period. A summary of the atmospheric lifetime and GWP of selected gases is presented in Table IV.E-2 on page IV.E-5.⁹ As indicated below, GWPs range from 1 to 22,800.

⁷ SCAG, *The State of the Region—Measuring Regional Progress, December 2006*, p. 121.

⁸ As defined by California Assembly Bill (AB) 32 and Senate Bill (SB) 104.

⁹ Atmospheric lifetime is defined as the time required to turn over the global Atmospheric burden. Source: Intergovernmental Panel on Climate Change, *IPCC Third Assessment Report: Climate Change 2001 (TAR), Chapter 4: Atmospheric Chemistry and Greenhouse Gases, 2001*, p. 247.

**Table IV.E-1
Description of Identified Greenhouse Gases^a**

Greenhouse Gas	General Description
Carbon Dioxide (CO₂)	CO ₂ is an odorless, colorless GHG, which has both natural and anthropogenic 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)	CH ₄ is a flammable gas and the main component of natural gas. When one molecule of CH ₄ is burned in the presence of oxygen, one molecule of CO ₂ and two molecules of water are released. A natural source of CH ₄ is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain CH ₄ , which is extracted for fuel. Other sources are from landfills, fermentation of manure, and cattle.
Nitrous Oxide (N₂O)	N ₂ O is 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 non-toxic, non-flammable, insoluble, and chemically unreactive in the troposphere (the level of air at Earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. Because they destroy stratospheric ozone, the production of CFCs was stopped as required by the Montreal Protocol in 1987. HFCs are synthetic man-made chemicals that are used as a substitute for CFCs as refrigerants. HFCs deplete stratospheric ozone, but to a much lesser extent than CFCs.
Perfluorocarbons (PFCs)	PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane and hexafluoroethane. The two main sources of PFCs are primary aluminum production and semi-conductor manufacturing.
Sulfur Hexafluoride (SF₆)	SF ₆ is an inorganic, odorless, colorless, non-toxic, and non-flammable gas. SF ₆ is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.
Nitrogen Trifluoride (NF₃)	NF ₃ is an inorganic, non-toxic, odorless, non-flammable gas. NF ₃ is used in the manufacture of semi-conductors, as an oxidizer of high energy fuels, for the preparation of tetrafluorohydrazine, as an etchant gas in the electronic industry, and as a fluorine source in high power chemical lasers.

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

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

**Table IV.E-2
Atmospheric Lifetimes and Global Warming Potentials**

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide (CO ₂)	50–200	1
Methane (CH ₄)	12 (+/-3)	25
Nitrous Oxide (N ₂ O)	114	298
HFC-23: Fluoroform (CHF ₃)	270	14,800
HFC-134a: 1,1,1,2-Tetrafluoroethane (CH ₂ FCF ₃)	14	1,430
HFC-152a: 1,1-Difluoroethane (C ₂ H ₄ F ₂)	1.4	124
PFC-14: Tetrafluoromethane (CF ₄)	50,000	7,390
PFC-116: Hexafluoroethane (C ₂ F ₆)	10,000	12,200
Sulfur Hexafluoride (SF ₆)	3,200	22,800
Nitrogen Trifluoride (NF ₃)	740	17,200
<p><i>Source: IPCC, Climate Change 2007: Working Group I: The Physical Science Basis, Direct Global Warming Potentials, www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html, accessed January 30, 2017.</i></p>		

b. Projected Impacts of Global Warming in California

According to the 2006 California Climate Action Team (CAT) Report, temperature increases arising from increased GHG emissions potentially could result in a variety of impacts to the people, economy, and environment of California associated with a projected increases in extreme conditions, with the severity of the impacts depending upon actual future emissions of GHGs and associated warming. If emissions from GHGs are not reduced substantially, the warming increase could have the following consequences in California:¹⁰

- The Sierra snowpack would decline between 70 and 90 percent, threatening California's water supply;
- Attainment of air quality standards would be impeded by increasing emissions, accelerating chemical processes, and raising inversion temperatures during stagnation episodes;

¹⁰ CalEPA, *Climate Action Team Report to Governor Schwarzenegger and the Legislature, March 2006, p. 11.*

- Erosion of California’s coastlines would increase, as well as sea water intrusion;
- Pest infestation and vulnerability to fires of the State’s forests would increase; and
- Rising temperatures would increase power demand, especially in the summer season.

With regard to public health, as reported by the Center for Health and the Global Environment at Harvard Medical School, the following are examples of how climate change can affect cardio-respiratory disease: (1) pollen is increased by higher levels of atmospheric CO₂; (2) heat waves can result in temperature inversions, leading to trapped masses or unhealthy air contaminants by smog, particulates, and other pollutants; and (3) the incidence of forest fires is increased by drought secondary to climate change and to the lack of spring runoff from reduced winter snows. These fires can create smoke and haze, which can settle over urban populations causing acute and exacerbating chronic respiratory illness.¹¹

c. Regulatory Framework

In response to growing scientific and political concern with global climate change, federal and state entities have adopted a series of laws to reduce emissions of GHGs to the atmosphere.

(1) Federal

(a) *Federal Clean Air Act*

The U.S. Supreme Court ruled in *Massachusetts v. Environmental Protection Agency*, 127 S.Ct. 1438 (2007), that CO₂ and other GHGs are pollutants under the federal Clean Air Act (CAA), which the USEPA must regulate if it determines they pose an endangerment to public health or welfare. The U.S. Supreme 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.

¹¹ Paul R. Epstein, et al., *Urban Indicators of Climate Change, Report from the Center for Health and the Global Environment, (Harvard Medical School and the Boston Public Health Commission, August 2003), unpaginated.*

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. 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 findings were signed by the USEPA Administrator on December 7, 2009. The final findings were published in the Federal Register on December 15, 2009. The final rule was effective on January 14, 2010.¹² While these findings alone do not impose any requirements on industry or other entities, this action is a prerequisite to regulatory actions by the USEPA, including, but not limited to, GHG emissions standards for light-duty vehicles.

On July 20, 2011, the USEPA published its final rule deferring GHG permitting requirements for CO₂ emission from biomass-fired and other biogenic sources until July 21, 2014. Environmental groups have challenged the deferral. In September 2011, USEPA released an “Accounting Framework for Biogenic CO₂ Emissions from Stationary Sources,” which analyzes accounting methodologies and suggests an implementation for biogenic CO₂ emitted from stationary sources.

On April 4, 2012, USEPA published a proposed rule to establish, for the first time, a new source performance standard for GHG emissions. Under the proposed rule, new fossil fuel-fired electric generating units larger than 25 megawatts (MW) are required to limit emissions to 1,000 pounds of CO₂ per MW-hour (CO₂/MWh) on an average annual basis, subject to certain exceptions.

On April 17, 2012, the USEPA issued emission rules for oil production and natural gas production and processing operations, which are required by the CAA under Code of Federal Regulations Title 40, Parts 60 and 63. The final rules include the first federal air standards for natural gas wells that are hydraulically fractured, along with requirements for several other sources of pollution in the oil and gas industry that currently are not regulated at the federal level.¹³

¹² USEPA, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, Final Rule*.

¹³ USEPA, *2012 Final Rules for Oil and Natural Gas Industry, April 17, 2012, www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/2012-final-rules-oil-and-natural-gas-industry, accessed January 25, 2017.*

(b) 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 United States Department of Transportation (USDOT), and the United States Department of Energy (USDOE) to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. 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.

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. The proposed standards are 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 the standards 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.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011 the USEPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO₂ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the USEPA, this regulatory program would reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.¹⁴

(c) Energy Independence and Security Act

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

¹⁴ *The emission reductions attributable to the regulations for medium- and heavy-duty trucks were not included in the Project's emissions inventory due to the difficulty in quantifying the reductions. Excluding these reductions results in a more conservative (i.e., higher) estimate of emissions for the Project.*

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

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of “green jobs.”¹⁵

(2) State

(a) Executive Order S-3-05

Executive Order S-3-05, issued in June 2005, established GHG emissions targets for the State, as well as a process to ensure the targets are met. The order directed the Secretary for the California Environmental Protection Agency (CalEPA) to report every two years on the State’s progress toward meeting the Governor’s GHG emission reduction targets. As a result of this executive order, the California CAT, led by the Secretary of CalEPA, was formed. The CAT is made up of representatives from a number of state agencies and was formed to implement global warming emission reduction programs and to report on the progress made toward meeting statewide targets established under the Executive Order. The CAT reported several recommendations and strategies for reducing GHG emissions and reaching the targets established in the Executive Order.¹⁶ The statewide GHG targets are as follows:

¹⁵ A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.

¹⁶ CAT, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, March 2006.

- By 2010, reduce to 2000 emission levels;¹⁷
- By 2020, reduce to 1990 emission levels; and
- By 2050, reduce to 80 percent below 1990 levels.

However, in adopting the California Global Warming Solutions Act of 2006 (also known as Assembly Bill [AB] 32), discussed below, the Legislature has not yet adopted the 2050 horizon-year goal from Executive Order No. S-3-05.

The CAT stated that smart land use is an umbrella term for strategies that integrate transportation and land-use decisions. Such strategies generally encourage jobs/housing proximity, promote transit-oriented development (TOD), and encourage high-density residential/commercial development along transit corridors. These strategies develop more efficient land-use patterns within each jurisdiction or region to match population increases, workforce, and socioeconomic needs for the full spectrum of the population. “Intelligent transportation systems” is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and the movement of people, goods, and service.¹⁸

(b) California Global Warming Solutions Act of 2006 (AB 32)

The California Global Warming Solutions Act of 2006 (also known as AB 32) commits the State to achieving the following:

- By 2010, reduce to 2000 GHG emission levels;¹⁹ and
- By 2020, reduce to 1990 levels.

To achieve these goals, which are consistent with the California CAT GHG targets for 2010 and 2020, AB 32 mandates that the California Air Resources Board (CARB) establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary sources consistent with the

¹⁷ *The 2010 target to reduce GHG emissions to 2000 levels was not met. Source: Rubin, Thomas A., “Does California Really Need Major Land Use and Transportation Changes to Meet Greenhouse Gas Emissions Targets?,” July 3, 2013.*

¹⁸ *CalEPA, Climate Action Team Report to Governor Schwarzenegger and the Legislature, March 2006, p. 58.*

¹⁹ *The 2010 target to reduce GHG emissions to 2000 levels was not met. Source: Rubin, Thomas A., “Does California Really Need Major Land Use and Transportation Changes to Meet Greenhouse Gas Emissions Targets?,” July 3, 2013.*

CAT strategies, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. In order to achieve the reduction targets, AB 32 requires CARB to adopt rules and regulations in an open public process that achieve the maximum technologically feasible and cost-effective GHG reductions.²⁰

(c) *Climate Change Scoping Plan*

In 2008, CARB approved a *Climate Change Scoping Plan* as required by AB 32.²¹ The *Climate Change Scoping Plan* proposes 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.”²² The *Climate Change Scoping Plan* has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms, such as a cap-and-trade system, and an AB 32 implementation fee to fund the program.

The *Climate Change Scoping Plan* calls for a “coordinated set of solutions” to address all major categories of GHG emissions. Transportation emissions will be addressed through a combination of higher standards for vehicle fuel economy, implementation of the Low Carbon Fuel Standard (LCFS), and greater consideration to reducing trip length and generation through land use planning and transit-oriented development. Buildings, land use, and industrial operations will be encouraged and, sometimes, required to use energy more efficiently. Utility energy supplies will change to include more renewable energy sources through implementation of the Renewables Portfolio Standard.²³ Additionally, the *Climate Change Scoping Plan* emphasizes opportunities for households and businesses to save energy and money through increasing energy efficiency. It indicates that substantial savings of electricity and natural gas will be accomplished through “improving energy efficiency by 25 percent.”

The *Climate Change Scoping Plan* identifies a number of specific issues relevant to the Project, including:

²⁰ CARB’s list of discrete early action measures that could be adopted and implemented before January 1, 2010, was approved on June 21, 2007. The three adopted discrete early action measures are: (1) a low-carbon fuel standard, which reduces carbon intensity in fuels statewide; (2) reduction of refrigerant losses from motor vehicle air conditioning system maintenance; and (3) increased methane capture from landfills, which includes requiring the use of state-of-the-art capture technologies.

²¹ *Climate Change Proposed Scoping Plan* was approved by CARB on December 11, 2008.

²² CARB, *Climate Change Scoping Plan, A Framework for Change*, December 2008.

²³ For a discussion of Renewables Portfolio Standard, refer to subsection 2(f), *California Renewables Portfolio Standard*.

- The potential of using the green building framework as a mechanism, which could enable GHG emissions reductions in other sectors (i.e., electricity, natural gas), noting that:

A Green Building strategy will produce greenhouse gas savings through buildings that exceed minimum energy efficiency standards, decrease consumption of potable water, reduce solid waste during construction and operation, and incorporate sustainable materials. Combined, these measures can also contribute to healthy indoor air quality, protect human health, and minimize impacts to the environment.

- The importance of supporting the Department of Water Resources' work to implement the Governor's objective to reduce per capita water use by 20 percent by 2020. Specific measures to achieve this goal include water use efficiency, water recycling, and reuse of urban runoff. The *Climate Change Scoping Plan* notes that water use requires significant amounts of energy, including approximately one-fifth of statewide electricity.
- Encouraging local governments to set quantifiable emission reduction targets for their jurisdictions and use their influence and authority to encourage reductions in emissions caused by energy use, waste and recycling, water and wastewater systems, transportation, and community design.

Forecasting the amount of emissions that would occur in 2020 if no actions are taken was necessary to assess the scope of the reductions California has to make to return to the 1990 emissions level by 2020 as required by AB 32. The "no implementation of emission reduction measures" (NIERM) scenario is known as "business-as-usual" or BAU. CARB originally defined the BAU scenario as emissions in the absence of any GHG emission reduction measures discussed in the *Climate Change Scoping Plan*. For example, in further explaining CARB's BAU methodology, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards. In the *Climate Change Scoping Plan*, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5 percent from the otherwise projected 2020 emissions level (i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations).²⁴

Subsequent to adoption of the *Climate Change Scoping Plan*, a lawsuit was filed challenging CARB's approval of the *Climate Change Scoping Plan Functional Equivalent*

²⁴ CARB, *Climate Change Scoping Plan: A Framework for Change*, p. 12, December 2008.

Document (FED to the Climate Change Scoping Plan). On May 20, 2011 (Case No. CPF-09-509562), the Court found that the environmental analysis of the alternatives in the *FED to the Climate Change Scoping Plan* was not sufficient under the California Environmental Quality Act (CEQA). CARB staff prepared a revised and expanded environmental analysis of the alternatives, and the *Supplemental FED to the Climate Change Scoping Plan* (Supplemental FED) was approved on August 24, 2011. The Supplemental FED indicated there is the potential for adverse environmental impacts associated with implementation of the various GHG emission reduction measures recommended in the *Climate Change Scoping Plan*.

As part of the Supplemental FED, CARB updated the projected 2020 BAU emissions inventory based on current economic forecasts (i.e., as influenced by the economic downturn) and emission reduction measures already in place, replacing its prior 2020 BAU emissions inventory. CARB staff derived the updated emissions estimates by projecting emissions growth, by sector, from the State's average emissions from 2006 through 2008. Specific emission reduction measures included are the million-solar-roofs program, the AB 1493 (Pavley I) motor vehicle GHG emission standards, and the LCFS.²⁵ In addition, CARB also factored into the 2020 BAU inventory emissions reductions associated with 33-percent Renewable Energy Portfolio Standard (RPS) for electricity generation. Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 percent (down from 28.5 percent) from BAU conditions. When the 2020 emissions level projection also was updated to account for newly implemented regulatory measures discussed above, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the BAU conditions.^{26,27}

More recently, in 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework* (2014 Update).²⁸ The stated purpose of the

²⁵ *Pavley I* are the first GHG standards in the nation for passenger vehicles and took effect for model years starting in 2009 to 2016. *Pavley I* could potentially result in 27.7 million metric tonnes 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.

²⁶ CARB, *Supplement to the AB 32 Scoping Plan FED*, Table 1.2-2.

²⁷ The emissions and reductions estimates found in the *Supplemental FED to the Climate Change Scoping Plan* fully replace the estimates published in the 2008 *Climate Change Scoping Plan*. See CARB, *Resolution 11-27* (Aug. 24, 2011) (setting aside approval of 2008 *Climate Change Scoping Plan* and associated emissions forecasts, and approving the *Supplemental FED*). The estimates in the 2008 document are 596 million metric tons CO₂e under 2020 BAU and a required reduction of 169 million metric tons CO₂e (28.4 percent).

²⁸ *Health & Safety Code §38561(h)* requires CARB to update the *Scoping Plan* every five years.

2014 Update is to “highlight...California’s success to date in reducing its GHG emissions and lay... the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.”²⁹ The 2014 Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32 and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the State realizes the expected benefits of existing policy goals.³⁰

In conjunction with the 2014 Update, CARB identified “six key focus areas comprising major components of the State’s economy to evaluate and describe the larger transformative actions that will be needed to meet the State’s more expansive emission reduction needs by 2050.”³¹ Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and (6) natural and working lands. The 2014 Update identifies key recommended actions for each sector that will facilitate achievement of the 2050 reduction target.

Based on CARB’s research efforts, it has a “strong sense of the mix of technologies needed to reduce emissions through 2050.”³² Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

The 2014 Update discusses new residential and commercial building energy efficiency improvements, specifically identifying progress towards zero net energy buildings as an element of meeting mid-term and long-term GHG reduction goals. The 2014 Update expresses CARB’s commitment to working with the California Public Utilities Commission (CPUC) and California Energy Commission (CEC) to facilitate further achievements in building energy efficiency.

In January 2017, CARB released the *2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California’s 2030 Greenhouse Gas Target* (Proposed 2017 Update) and a Draft Environmental Analysis (Draft EA) for public comment. Public

²⁹ CARB, *First Update to the Climate Change Scoping Plan: Building on the Framework*, May 2014, p. 4.

³⁰ CARB, *First Update to the Climate Change Scoping Plan: Building on the Framework*, May 2014, p. 34.

³¹ CARB, *First Update to the Climate Change Scoping Plan: Building on the Framework*, May 2014, p. 6.

³² CARB, *First Update to the Climate Change Scoping Plan: Building on the Framework*, May 2014, p. 32.

comments are due March 6, 2017 and public board hearings have been set through April 2017.³³

The Proposed 2017 Update builds upon the successful framework established by the initial Scoping Plan and the 2014 Update by outlining priorities and recommendations for the State to achieve a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels consistent with Executive Order B-30-15, which is discussed further below.³⁴

(d) Senate Bill 32

Senate Bill (SB) 32, signed September 8, 2016, updates AB 32 (the Global Warming Solutions Act) to include an emissions reductions goal for the year 2030. Specifically, SB 32 requires the state board to ensure that statewide GHG are reduced to 40 percent below the 1990 level by 2030. The new plan, outlined in SB 32, involves increasing renewable energy use, imposing tighter limits on the carbon content of gasoline and diesel fuel, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries.

(e) Assembly Bill 197

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

(f) Executive Order B-30-15

Executive Order B-30-15, issued in April 2015, established a new statewide policy goal to reduce GHG emissions 40 percent below their 1990 levels by 2030. Reducing GHG emissions by 40 percent below 1990 levels in 2030 and by 80 percent below

³³ CARB, *Notice of Public Board Meetings and Public Comment Period on the Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target*, January 25, 2017.

³⁴ CARB, *2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target*, January 25, 2017.

1990 levels by 2050 (consistent with Executive Order S-3-05) aligns with scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius.³⁵

(g) Cap-and-Trade Program

The *Climate Change Scoping Plan* identifies a cap-and-trade program as one of the strategies for California to reduce GHG emissions. Under cap-and-trade, an overall limit on GHG emissions from capped sectors is established, and facilities subject to the cap will be able to trade permits to emit GHGs within the overall limit. According to CARB, a cap-and-trade program will help put California on the path to meet its goal of reducing GHG emissions to 1990 levels by the year 2020.³⁶

CARB adopted a California Cap-and-Trade Program pursuant to its authority under AB 32. The Cap-and-Trade Program is designed to reduce GHG emissions from major sources, such as refineries and power plants (deemed “covered entities”). Covered entities subject to the Cap-and-Trade Program are sources that emit more than 25,000 metric tons CO₂e (MTCO₂e) per year. Triggering of the 25,000 MTCO₂e per year “inclusion threshold” is measured against a subset of emissions reported and verified under the California Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Mandatory Reporting Rule or MRR).

Under the Cap-and-Trade Program, CARB issues allowances equal to the total amount of allowable emissions over a given compliance period and distributes these to regulated entities. Covered entities are allocated free allowances in whole or in part (if eligible) and may buy allowances at auction, purchase allowances from others, or purchase offset credits. Each covered entity with a compliance obligation is required to surrender an allowance for each metric ton CO₂e of GHG they emit.

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 statewide emission limit will not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are only guaranteed on a cumulative basis. As summarized by CARB in the 2014 Update:

The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at

³⁵ CARB, *2030 Carbon Target and Adaptation*.

³⁶ *With continuation of the Cap-and-Trade Program, the State can achieve a 40-percent reduction target by 2030.*

their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced.

For example, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a commensurate reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate change is a global phenomenon, and the effects of GHG emissions are considered cumulative.

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

The Cap-and-Trade Program establishes an overall limit on GHG emissions from most of the California economy—the “capped sectors.” Within the capped sectors, some of the reductions are being accomplished through direct regulations, such as improved building and appliance efficiency standards, the [Low Carbon Fuel Standard] LCFS, and the 33 percent [Renewables Portfolio Standard] RPS. Whatever additional reductions are needed to bring emissions within the cap is accomplished through price incentives posed by emissions allowance prices. Together, direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap.³⁷ [...]

[T]he Cap-and-Trade Regulation provides assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions.³⁸

Overall, the Cap-and-Trade Program will achieve aggregate, rather than site-specific or project-level, GHG emissions reductions. Also, due to the regulatory framework adopted

³⁷ CARB, *First Update to the Climate Change Scoping Plan: Building on the Framework*, p. 88, May 2014.

³⁸ CARB, *First Update to the Climate Change Scoping Plan: Building on the Framework*, pp. 86-87, May 2014.

by CARB in AB 32, the reductions attributed to the Cap-and-Trade Program can change over time depending on the State's emissions forecasts and the effectiveness of direct regulatory measures.

As of January 1, 2015, the Cap-and-Trade Program covered approximately 85 percent of California's GHG emissions.³⁹

The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period. While the Cap-and-Trade Program technically covered fuel suppliers as early as 2012, they did not have a compliance obligation (i.e., they were not fully regulated) until 2015. Furthermore, the Cap-and-Trade Program also covers the GHG emissions associated with the combustion of transportation fuels in California, whether refined in-state or imported. The point of regulation for transportation fuels is when they are "supplied" (i.e., delivered into commerce). Accordingly, as with stationary source GHG emissions and GHG emissions attributable to electricity use, virtually all, if not all, of GHG emissions from CEQA projects associated with vehicle-miles traveled (VMT) are covered by the Cap-and-Trade Program.

(h) Energy-Related Sources

(i) California Renewables Portfolio Standard

The California Renewables Portfolio Standard (RPS) program (2002, SB 1078) requires 20 percent of available energy supplies to come from renewable energy sources by 2017. In 2006, SB 107 accelerated the 20 percent mandate to 2010. These mandates apply directly to investor-owned utilities. On April 12, 2011, California Governor Jerry Brown signed into law SB 2X, which modified California's RPS program to require that both public and investor-owned utilities in California receive at least 33 percent of their electricity from renewable sources by the year 2020. California SB 2X also requires regulated sellers of electricity to meet an interim milestone of procuring 25 percent of their energy supply from certified renewable resources by 2016.

³⁹ Center for Climate and Energy Solutions, *California CapandTrade*, www.c2es.org/us-states-regions/key-legislation/california-cap-trade, accessed January 25, 2017.

(ii) *Senate Bill 350*

SB 350, signed October 7, 2015, is the Clean Energy and Pollution Reduction Act of 2015. SB 350 is the implementation of some of the goals of Executive Order B-30-15. The objectives of SB 350 are: (1) to increase from 33 percent to 50 percent, the procurement of our electricity from renewable sources; and (2) to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.⁴⁰

(iii) *California Senate Bill 1368 (SB 1368)*

SB 1368, a companion bill to AB 32, requires the CPUC and the CEC to establish GHG emission performance standards for the generation of electricity. These standards will also generally apply to power that is generated outside of California and imported into the State. SB 1368 provides a mechanism for reducing the emissions of electricity providers, thereby assisting CARB to meet its mandate under AB 32. On January 25, 2007, the CPUC adopted an interim GHG Emissions Performance Standard, which is a facility-based emissions standard requiring that all new long-term commitments for baseload generation to serve California consumers be with power plants that have GHG emissions no greater than a combined cycle gas turbine plant. That level is established at 1,100 pounds of CO₂ per MWh. Furthermore, on May 23, 2007, the CEC adopted regulations that establish and implement an identical Emissions Performance Standard of 1,100 pounds of CO₂ per MWh (see CEC Order No. 07-523-7).

(i) *Mobile Sources*

(i) *California Assembly Bill 1493 (Pavley I)*

AB 1493, passed in 2002, requires the development and adoption of regulations to achieve “the maximum feasible reduction of greenhouse gases” emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the State. CARB originally approved regulations to reduce GHGs from passenger vehicles in September 2004, with the regulations to take effect in 2009. On September 24, 2009, CARB adopted amendments to these “Pavley” regulations that reduce GHG emissions in new passenger vehicles from 2009 through 2016.⁴¹ Although setting emission standards on automobiles is solely the responsibility of the USEPA, the federal CAA allows California to set state-specific emission standards on automobiles if the

⁴⁰ *Senate Bill 350 (2015–2016 Reg, Session) Stats 2015, ch. 547.*

⁴¹ *CARB, Clean Car Standards—Pavley, Assembly Bill 1493, www.arb.ca.gov/cc/ccms/ccms.htm, last reviewed, January 11, 2017.*

State first obtains a waiver from the USEPA. The USEPA granted California that waiver on July 1, 2009. A comparison between the AB 1493 standards and the federal CAFE standards was completed by CARB, and the analysis determined that California emission standards are 16 percent more stringent through the 2016 model year and 18 percent more stringent for the 2020 model year.⁴² California is also committed to further strengthening these standards beginning with 2020 model year vehicles to obtain a 45-percent GHG reduction in comparison to the 2009 model year.

(ii) Executive Order S-1-07 (California Low Carbon Fuel Standard)

Executive Order S-1-07, the LCFS (issued on January 18, 2007) requires a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020. Regulatory proceedings and implementation of the LCFS have been directed to CARB. The LCFS has been identified by CARB as a discrete early action item in the adopted *Climate Change Scoping Plan*. CARB expects the LCFS 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. To avoid the potential for double-counting emission reductions associated with AB 1493 (see previous discussion), the *Climate Change Scoping Plan* has modified the aggregate reduction expected from the LCFS to 9.1 percent. In accordance with the *Climate Change Scoping Plan*, this analysis incorporates the modified reduction potential for the LCFS. CARB released a draft version of the LCFS 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 LCFS became effective on the same day.

(iii) Advanced Clean Cars Regulations

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

(iv) California Senate Bill 375

Acknowledging the relationship between land use planning and transportation sector GHG emissions, SB 375 was passed by the State Assembly on August 25, 2008, and signed by the Governor on September 30, 2008. This legislation links regional planning for

⁴² CARB, "Comparison of Greenhouse Gas Reductions for all Fifty United States under CAFE Standards and ARB Regulations Adopted Pursuant to AB 1493," January 23, 2008.

housing and transportation with the GHG reduction goals outlined in AB 32. Reductions in GHG emissions would be achieved by, for example, locating employment opportunities close to transit. Under SB 375, each Metropolitan Planning Organization (MPO) would be required to adopt a Sustainable Community Strategy (SCS) to encourage compact development that reduce passenger VMT and trips so that the region will meet a target, created by CARB, for reducing GHG emissions. If the SCS is unable to achieve the regional GHG emissions reduction targets, then the MPO is required to prepare an alternative planning strategy that shows how the GHG emissions reduction target could be achieved through alternative development patterns, infrastructure, and/or transportation measures.

(j) Building Standards

(i) California Appliance Efficiency Regulations (Title 20, Sections 1601 through 1608)

The 2014 Appliance Efficiency Regulations, adopted by the CEC, include standards for new appliances (e.g., refrigerators) and lighting, if they are sold or offered for sale in California. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

(ii) California Building Energy Efficiency Standards (CCR Title 24, Part 6)

California's Energy Efficiency Standards for Residential and Nonresidential Buildings, found in California Code of Regulations (CCR) Title 24, Part 6 and commonly referred to as Title 24, were established in 1978 in response to a legislative mandate to reduce California's energy consumption. Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.⁴³

An update to Title 24 was adopted by the CEC on April 23, 2008. The 2008 Title 24 standards applied to building permits for which an application was submitted on or after January 1, 2010. The CEC adopted the changes made in 2008 to the Building Energy Efficiency Standards to respond to the mandates of AB 32 and to pursue California energy policy that energy efficiency is the resource of first choice for meeting California's energy needs. The 2016 Title 24 standards are the current standards, which became effective

⁴³ CEC, 2016 Building Energy Efficiency Standards, www.energy.ca.gov/title24/2016standards/, accessed January 25, 2017.

January 1, 2017.⁴⁴ The 2016 standards continue to improve upon the 2013 Title 24 standards for new construction of, and additions and alterations to, residential and non-residential buildings.⁴⁵

(iii) California Green Building Standards (CALGreen Code)

The California Green Building Standards Code (CCR Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2017. The 2016 CALGreen Code includes mandatory measures for non-residential development related to site development; water use; weather resistance and moisture management; construction waste reduction, disposal, and recycling; building maintenance and operation; pollutant control; indoor air quality; environmental comfort; and outdoor air quality. The 2016 CALGreen Code improves upon the 2013 CALGreen Code. Most mandatory measure changes were related to the definitions and to the clarification or addition of referenced manuals, handbooks, and standards. For example, several definitions related to energy that were added or revised affect electric vehicles chargers and charging and hot water recirculation systems. For new multi-family dwelling units, the residential mandatory measures were revised to provide additional electric vehicle charging space requirements, including quantity, location, size, single EV space, multiple EV spaces, and identification.⁴⁶ For non-residential mandatory measures, the table (Table 5.106.5.3.3) identifying the number of required EV charging spaces has been revised in its entirety.⁴⁷

(k) California Senate Bill 97 (SB 97)

On June 19, 2008, the Office of Planning and Research (OPR) released a technical advisory addressing climate change. This guidance document outlines suggested components to CEQA disclosure, including quantification of GHG emissions from a project's construction and operation; determination of significance of the project's impact to climate change; and if the project is found to be significant, the identification of suitable alternatives and mitigation measures.

⁴⁴ CEC, 2016 Building Energy Efficiency Standards, www.energy.ca.gov/title24/2016standards/, accessed January 25, 2017.

⁴⁵ CEC, 2016 Building Energy Efficiency Standards, www.energy.ca.gov/title24/2016standards/, accessed January 25, 2017.

⁴⁶ California Building Standards Commission, 2016 California Green Building Standards Code, California Code of Regulations, Title 24, Part 11, Chapter 4—Residential Mandatory Measures, effective January 1, 2017.

⁴⁷ California Building Standards Commission, 2016 California Green Building Standards Code, California Code of Regulations, Title 24, Part 11, Chapter 5—Nonresidential Mandatory Measures, effective January 1, 2017.

SB 97, passed in August 2007, is designed to work in conjunction with CEQA and AB 32. SB 97 requires OPR to prepare and develop guidelines for the mitigation of GHG emissions or the effects thereof, including, but not limited to, the effects associated with transportation and energy consumption. The Draft Guidelines Amendments for Greenhouse Gas Emissions (Guidelines Amendments) were adopted on December 30, 2009 and address the specific obligations of public agencies when analyzing GHG emissions under CEQA to determine a project's effects on the environment.

However, neither a threshold of significance nor any specific mitigation measures are included or provided in the Guidelines Amendments.⁴⁸ The Guidelines Amendments require a lead agency to make a good-faith effort, based on the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. The Guidelines Amendments give discretion to the lead agency whether to: (1) use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use; or (2) rely on a qualitative analysis or performance-based standards. Furthermore, the Guidelines Amendments identify three factors that should be considered in the evaluation of the significance of GHG emissions:

1. The extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting;
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.⁴⁹

The administrative record for the Guidelines Amendments also clarifies "that the effects of greenhouse gas emissions are cumulative, and should be analyzed in the context of California Environmental Quality Act's requirements for cumulative impact analysis."⁵⁰

The California Natural Resources Agency is required to periodically update the Guidelines Amendments to incorporate new information or criteria established by CARB

⁴⁸ See 14 Cal. Code Regs. §§ 15064.7 (generally giving discretion to lead agencies to develop and publish thresholds of significance for use in the determination of the significance of environmental effects), 15064.4 (giving discretion to lead agencies to determine the significance of impacts from GHGs).

⁴⁹ 14 Cal. Code Regs. § 15064.4(b).

⁵⁰ Letter from Cynthia Bryant, Director of the Governor's Office of Planning and Research to Mike Chrisman, California Secretary for Natural Resources, dated April 13, 2009.

pursuant to AB 32. SB 97 applies retroactively to any environmental impact report (EIR), negative declaration, mitigated negative declaration, or other document required by CEQA, which has not been finalized.

(3) Regional

(a) 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. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the Air Quality Management Plan. 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;
- 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 2008, SCAQMD released draft guidance regarding interim CEQA GHG significance thresholds.⁵¹ Within its October 2008 document, the SCAQMD proposed the use of a percent emission reduction target to determine significance for commercial/residential projects that emit greater than 3,000 MTCO₂e per year. Under this proposal, commercial/residential projects that emit fewer than 3,000 MTCO₂e per year would be assumed to have a less than significant impact on climate change. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for stationary source/industrial projects where the SCAQMD is the lead agency. However, the SCAQMD has yet to adopt a GHG significance threshold for land use

⁵¹ SCAQMD, *Draft Guidance Document—Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008, Attachment E*.

development projects (e.g., residential/commercial projects); therefore, the commercial/residential thresholds were not formally adopted.⁵²

(b) Southern California Association of Governments

SCAG adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016–2040 RTP/SCS) on April 7, 2016.⁵³ The 2016–2040 RTP/SCS reaffirms the land use policies that were incorporated into the 2012–2035 RTP/SCS. These foundational policies, which guided the development of the 2016–2040 RTP/SCS’s strategies for land use, include the following:

- Identify regional strategic areas for infill and investment;
- Structure the plan on a three-tiered system of centers development;⁵⁴
- Develop “Complete Communities”;
- Develop nodes on a corridor;
- Plan for additional housing and jobs near transit;
- Plan for changing demand in types of housing;
- Continue to protect stable, existing single-family areas;
- Ensure adequate access to open space and preservation of habitat; and
- Incorporate local input and feedback on future growth.

The 2016–2040 RTP/SCS recognizes that transportation investments and future land use patterns are inextricably linked, and continued recognition of this close relationship will help the region make choices that sustain existing resources and expand efficiency, mobility, and accessibility for people across the region. In particular, the 2016–2040 RTP/SCS draws a closer connection between where people live and work, and it offers a blueprint for how Southern California can grow more sustainably. The 2016–2040

⁵² SCAQMD, *Greenhouse Gases (GHG) CEQA Significance Thresholds*, www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds, accessed January 30, 2017.

⁵³ SCAG, *Final 2016–2040 RTP/SCS*.

⁵⁴ *Complete language*: “Identify strategic centers based on a three-tiered system of existing, planned and potential relative to transportation infrastructure. This strategy more effectively integrates land use planning and transportation investment.” A more detailed description of these strategies and policies can be found on pp. 90–92 of the SCAG 2008 Regional Transportation Plan, adopted in May 2008.

RTP/SCS also includes strategies focused on compact infill development and economic growth by building the infrastructure the region needs to promote the smooth flow of goods and easier access to jobs, services, educational facilities, healthcare and more.

The 2016–2040 RTP/SCS indicates the SCAG region is home to about 18.3 million people in 2012 and currently includes approximately 5.9 million homes and 7.4 million jobs. By 2040, the integrated growth forecast projects that these figures will increase by 3.8 million people, with nearly 1.5 million more homes and 2.4 million more jobs. High Quality Transit Areas (HQTAs) will account for 3 percent of regional total land but are projected to accommodate 46 percent and 55 percent of future household and employment growth respectively between 2016 and 2040.⁵⁵ The 2016–2040 RTP/SCS overall land use pattern reinforces the trend of focusing new housing and employment in the region’s HQTAs. HQTAs are a cornerstone of land use planning best practice in the SCAG region because they concentrate roadway repair investments, leverage transit and active transportation investments, reduce regional life cycle infrastructure costs, improve accessibility, create local jobs, and have the potential to improve public health and housing affordability.

The 2016–2040 RTP/SCS is expected to reduce per capita transportation emissions by 8 percent by 2020 and 18 percent by 2035. This level of reduction would meet and exceed the region’s GHG targets set by CARB of 8 percent per capita by 2020 and 13 percent per capita by 2035.⁵⁶ Furthermore, although there are no per capita GHG emission reduction targets for passenger vehicles set by CARB for 2040, the 2016–2040 RTP/SCS’s GHG emission reduction trajectory shows that more aggressive GHG emission reductions are projected for 2040.⁵⁷ The 2016–2040 RTP/SCS would result in an estimated 21 percent decrease in per capita GHG emissions by 2040. By meeting and exceeding the SB 375 targets for 2020 and 2035, as well as achieving an approximately 21-percent decrease in per capita GHG emissions by 2040 (an additional 3-percent reduction in the five years between 2035 [18 percent] and 2040 [21 percent]), the 2016–2040 RTP/SCS is expected to fulfill and exceed its portion of SB 375 compliance with respect to meeting the State’s GHG emission reduction goals.

⁵⁵ *Defined by the 2016–2040 RTP/SCS as generally walkable transit villages or corridors that are within 0.5 mile of a well-serviced transit stop or a transit corridor with 15-minute or less service frequency during peak commute hours*

⁵⁶ *SCAG, Final 2016–2040, RTP/SCS, Executive Summary, p. 8, April 2016.*

⁵⁷ *SCAG, Final Program Environmental Impact Report for 2016–2040, RTP/SCS, April 2016, Figure 3.8.4-1.*

(4) Local

(a) 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. 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.

(b) City of Long Beach Sustainable City Action Plan

The City adopted the Long Beach Sustainable City Action Plan (Sustainable City Action Plan) on February 2, 2010. This plan is intended to guide operational, policy and financial decisions to create a more sustainable Long Beach. The Sustainable City Action Plan includes measurable goals and actions that are intended to be challenging, yet realistic. The following goals are applicable to the Project.

- **Buildings & Neighborhoods Initiative 1:** Accelerate the use of green buildings techniques in new development, renovations and retrofits to improve building efficiency and health.

Goal: At least 5 million square feet of privately developed LEED certified (or equivalent) green buildings by 2020.

- **Buildings & Neighborhoods Initiative 3:** Enhance our community to encourage people to get out of their cars and into their neighborhoods.

Goal: By 2020, at least 30 percent of Long Beach residents use alternative transportation to get to work.

- **Energy Initiative 3:** Reduce electricity and natural gas consumption of the Long Beach community.

Goal: By 2020 reduce community electricity use by 15 percent and natural gas use by 10 percent.

- **Transportation Initiative 1:** Reduce emissions and improve air quality by moving toward more fuel efficient and alternative fuel vehicles.

Goal: Reduce vehicle emissions by 30 percent by 2020.

- **Waste Reduction Initiative 1:** Increase diversion by reducing waste and increasing recycling and reuse.

Goal: Annual reduction in average pounds of solid waste generated per person per day.

- **Water Reduction Initiative 1:** Ensure a sustainable water supply through conservation and reduced dependence on imported water.

Goal: Reduce per capita use of potable water, exceeding the State mandate to achieve a demand reduction of 20 percent in per capita water use by the year 2020.

(c) 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.

d. Existing Conditions

(1) Existing Statewide GHG Emissions

GHGs are the result of both natural and human-influenced activities. Regarding human-influenced activities, motor vehicle travel, consumption of fossil fuels for power generation, industrial processes, heating and cooling, landfills, agriculture, and wildfires are the primary sources of GHG emissions. Without human intervention, Earth maintains an approximate balance between the emission of GHGs into the atmosphere and the storage of GHGs in oceans and terrestrial ecosystems. Events and activities, such as the industrial revolution and the increased combustion of fossil fuels (e.g., gasoline, diesel, coal, etc.), have contributed to the rapid increase in atmospheric levels of GHGs over the last 150 years. As reported by the CEC, California contributes 1.4 percent of global and 6.2 percent of national GHG emissions.⁵⁸ California represents approximately 12 percent of the national population. Approximately 80 percent of GHGs in California are CO₂ produced from fossil fuel combustion. The current California GHG inventory compiles statewide anthropogenic GHG emissions and carbon sinks/storage from years 2000 to 2012.⁵⁹ It includes estimates for CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆. The GHG inventory for California for years 2006 through 2012 is presented in Table IV.E-3 on page IV.E-30. As shown therein, the GHG inventory for California in 2012 was 458.7 million MTCO₂e. For comparison purposes, CARB estimates that the natural gas leak at Aliso Canyon released approximately 2.4 million MTCO₂e from November 7, 2015, to February 13, 2016.⁶⁰

⁵⁸ CEC, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*, CEC-600-2006-013, October 2006.

⁵⁹ A carbon inventory identifies and quantifies sources and sinks of greenhouse gases. Sinks are defined as a natural or artificial reservoir that accumulates and stores some carbon-containing chemical compound for an indefinite period.

⁶⁰ California Air Resources Board, *Aliso Canyon Natural Gas Leak—Preliminary Estimate of Greenhouse Gas Emissions*, February 13, 2016.

**Table IV.E-3
California GHG Inventory
(million metric tons CO₂e)**

	2006	2007	2008	2009	2010	2011	2012
Transportation	189.18	189.27	178.02	171.47	170.46	168.13	167.38
<i>On Road</i>	172.37	172.41	163.00	158.46	157.38	154.91	154.06
Passenger Vehicles	131.79	130.80	124.27	122.41	121.39	118.85	118.28
Heavy Duty Trucks	40.58	41.61	38.73	36.04	36.00	36.06	35.78
<i>Ships & Commercial Boats</i>	4.20	4.31	4.04	3.68	3.71	3.72	3.83
<i>Aviation (Intrastate)</i>	4.57	4.98	4.51	4.04	3.85	3.75	3.72
<i>Rail</i>	3.53	3.17	2.38	1.94	2.33	2.49	2.48
<i>Off Road</i>	3.32	3.18	2.82	2.25	2.03	2.13	2.23
<i>Unspecified</i>	1.20	1.22	1.27	1.10	1.16	1.14	1.06
<i>Percent of Total Emissions</i>	39%	39%	37%	37%	38%	37%	36%
Electric Power	104.54	113.94	120.15	101.32	90.30	88.04	95.09
<i>In-State Generation</i>	49.86	54.13	54.32	53.28	46.71	41.18	51.02
Natural Gas	43.07	47.12	48.02	46.08	40.59	35.92	45.77
Other Fuels	5.64	5.86	5.16	5.85	5.02	4.01	4.44
Fugitive and Process Emissions	1.15	1.16	1.14	1.34	1.10	1.25	0.82
<i>Imported Electricity</i>	54.68	59.81	65.82	48.04	43.59	46.86	44.07
<i>Unspecified Imports</i>	27.95	32.73	37.92	14.99	13.45	15.52	17.48
<i>Specified Imports</i>	26.73	27.08	27.90	33.05	30.14	31.34	26.59
<i>Percent of Total Emissions</i>	22%	23%	25%	22%	20%	20%	21%
Commercial and Residential	41.89	42.11	42.44	42.65	43.82	44.32	42.28
<i>Residential Fuel Use</i>	28.58	28.73	29.07	28.69	29.42	29.89	28.09
Natural Gas	26.60	26.73	26.67	26.31	27.04	27.51	25.76
Other Fuels	1.98	2.01	2.40	2.38	2.39	2.38	2.33
<i>Commercial Fuel Use</i>	12.89	12.88	13.00	13.04	13.48	13.65	13.44
Natural Gas	11.62	11.49	11.16	11.02	11.19	11.33	11.24
Other Fuels	1.27	1.40	1.83	2.02	2.29	2.32	2.19
<i>Commercial Cogeneration Heat Output</i>	0.42	0.49	0.37	0.92	0.92	0.78	0.76
<i>Percent of Total Emissions</i>	9%	9%	9%	9%	10%	10%	9%
Industrial	90.28	87.10	87.54	84.95	88.51	88.34	89.16
<i>Refineries</i>	29.65	29.21	28.42	28.34	30.39	30.12	29.88
<i>General Fuel Use</i>	15.96	14.77	16.00	15.56	17.98	19.14	18.87
Natural Gas	12.38	11.56	12.37	11.46	13.46	14.48	14.30
Other Fuels	3.58	3.20	3.63	4.10	4.52	4.66	4.56

Table IV.E-3 (Continued)
California GHG Inventory
(million metric tons CO₂e)

	2006	2007	2008	2009	2010	2011	2012
<i>Oil & Gas Extraction^a</i>	16.94	17.00	18.22	17.12	16.18	16.22	16.86
Fuel Use	15.75	15.78	17.03	15.92	15.01	14.91	15.50
Fugitive Emissions	1.19	1.21	1.20	1.20	1.17	1.31	1.36
<i>Cement Plants</i>	9.74	9.14	8.63	5.72	5.56	6.14	6.92
Clinker Production	5.80	5.55	5.28	3.60	3.46	4.08	4.65
Fuel Use	3.95	3.59	3.34	2.12	2.10	2.06	2.26
<i>Cogeneration Heat Output</i>	12.17	11.16	10.40	12.55	12.60	11.14	10.82
<i>Other Process Emissions</i>	5.83	5.83	5.87	5.65	5.80	5.59	5.82
<i>Percent of Total Emissions</i>	19%	18%	18%	19%	20%	20%	19%
Recycling and Waste	7.80	7.93	8.09	8.23	8.34	8.42	8.49
<i>Landfills^b</i>	7.42	7.53	7.66	7.78	7.86	7.92	7.97
<i>Percent of Total Emissions</i>	2%	2%	2%	2%	2%	2%	2%
High Global Warming Potential	11.08	11.78	12.87	13.99	15.89	17.35	18.41
<i>Ozone Depleting Substance Substitutes</i>	10.41	11.16	12.24	13.49	15.36	16.58	17.73
<i>Electricity Grid SF6 Losses^c</i>	0.28	0.26	0.27	0.26	0.24	0.24	0.23
<i>Semiconductor Manufacturing^b</i>	0.39	0.36	0.36	0.23	0.29	0.53	0.45
<i>Percent of Total Emissions</i>	2%	2%	3%	3%	4%	4%	4%
Agriculture^d	37.75	37.03	37.99	35.84	35.73	36.34	37.86
<i>Livestock</i>	22.22	23.73	24.09	23.88	23.35	23.38	23.92
Enteric Fermentation (Digestive Process)	11.24	11.93	11.89	11.71	11.51	11.49	11.78
Manure Management	10.98	11.80	12.20	12.17	11.84	11.89	12.14
<i>Crop Growing & Harvesting</i>	10.20	9.50	9.98	9.31	9.57	9.30	10.22
Fertilizers	8.01	7.49	8.04	7.32	7.58	7.25	8.16
Soil Preparation and Disturbances	2.12	1.94	1.87	1.92	1.91	1.98	1.98
Crop Residue Burning	0.07	0.07	0.07	0.07	0.08	0.08	0.08
<i>General Fuel Use</i>	5.33	3.80	3.92	2.65	2.81	3.66	3.72
Diesel	3.87	2.68	3.00	1.79	1.99	2.37	2.47
Natural Gas	0.88	0.79	0.75	0.69	0.65	0.66	0.70
Gasoline	0.57	0.32	0.17	0.17	0.17	0.63	0.55
Other Fuels	0.01	0.00	0.00	0.00	0.00	0.00	0.00
<i>Percent of Total Emissions</i>	8%	8%	8%	8%	8%	8%	8%
Total Net Emissions	482.52	489.16	487.10	458.44	453.06	450.94	458.68
^a Reflects emissions from combustion of fuels plus fugitive emissions.							

Table IV.E-3 (Continued)
California GHG Inventory
(million metric tons CO₂e)

	2006	2007	2008	2009	2010	2011	2012
^b These categories are listed in the Industrial sector of ARB's GHG Emission Inventory sectors. ^c This category is listed in the Electric Power sector of ARB's GHG Emission Inventory sectors. ^d Reflects use of updated USEPA models for determining emissions from livestock and fertilizers. Source: California GHG Inventory for 2000–2012—by Category as Defined in the Climate Change Scoping Plan million tonnes of CO ₂ e—(based upon IPCC Second Assessment Report's Global Warming Potentials).							

(2) Existing Project Site Emissions

The Project Site is currently occupied by the two-story, approximately 238,000-square-foot Sea Port Marina Hotel and associated commercial uses and surface parking areas providing a total of 457 parking spaces.⁶¹ Existing on-site operations generate GHG emissions from a variety of sources. Mobile source emissions are generated by motor vehicle trips to and from the Project Site. The consumption of fossil fuels to generate electricity and to provide heating and hot water for the existing uses associated with the Project Site also creates GHG emissions. Other sources at the Project Site associated with embodied energy (e.g., energy used to convey, treat, and distribute water and wastewater) and subsequent generation of GHG emissions include water usage, wastewater generation, and solid waste generation and disposal. Table IV.E-4 on page IV.E-33 presents the GHG emissions associated with the existing land uses.

⁶¹ In accordance with CEQA Guidelines Section 15125(a), existing conditions represents the conditions that existing on-site at the time the Notice of Preparation was issued (i.e., November 17, 2016). Specifically, this includes 170 hotel rooms. All on-site uses have since ceased operations.

**Table IV.E-4
Existing Project Site Annual GHG Emissions Summary**

Scope	Metric Tons of Carbon Dioxide Equivalent
Area	<1
Energy	1,712
Mobile	1,001
Solid Waste	47
Water/Wastewater Generation	26
Total Emissions^a	2,785
<p>^a <i>In accordance with CEQA Guidelines Section 15125(a), existing conditions represents the conditions that existing on-site at the time the Notice of Preparation was issued (i.e., November 17, 2016). Specifically, this includes 170 hotel rooms. All on-site uses have since ceased operations.</i></p> <p><i>Source: Eyestone Environmental, 2017.</i></p>	

3. Project Impacts

a. Methodology

The California Climate Action Registry (Climate Registry) General Reporting Protocol provides basic procedures and guidelines for calculating and reporting GHG emissions from a number of general and industry-specific activities.⁶² The General Reporting Protocol is based on the “Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard” developed by the World Business Council for Sustainable Development and the World Resources Institute through “a multi-stakeholder effort to develop a standardized approach to the voluntary reporting of GHG emissions.”⁶³ Although no numerical thresholds of significance have been developed and no specific protocols are available for land use projects, the General Reporting Protocol provides a basic framework for calculating and reporting GHG emissions from the project. The information provided in this section is consistent with the General Reporting Protocol’s reporting requirements. A detailed discussion of the GHG methodology is included in Appendix B of this Draft EIR.

The General Reporting Protocol recommends the separation of GHG emissions into three categories that reflect different aspects of ownership or control over emissions. They include the following:

⁶² *California Climate Action Registry, General Reporting Protocol Version 3.1, January 2009.*

⁶³ *California Climate Action Registry, General Reporting Protocol Version 3.1, January 2009.*

- Scope 1: Direct, onsite combustion of fossil fuels (e.g., natural gas, propane, gasoline, and diesel).
- Scope 2: Indirect, offsite emissions associated with purchased electricity or purchased steam.
- Scope 3: Indirect emissions associated with other emissions sources, such as third-party vehicles and embodied energy (e.g., energy used to convey, treat, and distribute water and wastewater).⁶⁴

The General Reporting Protocol provides a range of basic calculations methods. However, the General Reporting Protocol calculations are typically designed for existing buildings or facilities. These retrospective calculation methods are not directly applicable to planning and development situations where buildings do not yet exist.

CARB recommends consideration of indirect emissions to provide a more complete picture of the GHG footprint of a facility. Annually reported indirect energy usage aids the conservation awareness of a facility and provides information to CARB to be considered for future strategies.⁶⁵ For example, CARB has proposed requiring the calculation of direct and indirect GHG emissions as part of the AB 32 reporting requirements. Additionally, OPR has noted that lead agencies “should make a good-faith effort, based on available information, to calculate, model, or estimate...GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities.”⁶⁶ Therefore, direct and indirect emissions have been calculated for the Project.

A fundamental difficulty in the analysis of GHG emissions is the global nature of the existing and cumulative future conditions. Changes in GHG emissions can be difficult to attribute to a particular planning program or project because the planning effort or project may cause a shift in the locale for some type of GHG emissions, rather than causing “new” GHG emissions. As a result, there is an inability to conclude whether a project’s GHG emissions represent a net global increase, reduction, or no change in GHGs that would exist if the project were not implemented. The analysis of the Project’s GHG emissions is

⁶⁴ *Embodied energy is a scientific term that refers to the quantity of energy required to manufacture and supply to the point of use a product, material, or service.*

⁶⁵ *CARB, Initial Statement of Reasons for Rulemaking, Proposed Regulation for Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (AB 32), Planning and Technical Support Division Emission Inventory Branch, October 19, 2007.*

⁶⁶ *OPR Technical Advisory, p. 5.*

particularly conservative in that it assumes all of the GHG emissions are new additions to the atmosphere.

The California Emissions Estimator Model (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California, who provided data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) to account for local requirements and conditions. The model is considered by the SCAQMD to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California.⁶⁷

(1) Construction

The Project's construction emissions were calculated using CalEEMod Version 2016.3.1. Details of the modeling assumptions and emission factors are provided in Appendix B of this Draft EIR. CalEEMod calculates emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and construction worker trips. GHG emissions during construction were forecasted based on the proposed construction schedule and applying the mobile-source and fugitive dust emissions factors derived from the SCAQMD recommended CalEEMod. The calculations of the emissions generated during Project construction activities reflect the types and quantities of construction equipment that would be used to remove existing pavement, grade and excavate the Project Site, construct the proposed building and related improvements, and plant new landscaping within the Project Site.

In accordance with the SCAQMD's guidance, GHG emissions from construction were amortized (i.e., averaged annually) over the lifetime of the Project. The SCAQMD defines the lifetime of a project as 30 years.⁶⁸ Therefore, total construction GHG emissions were divided by 30 to determine an annual construction emissions estimate comparable to operational emissions.

⁶⁷ California Air Pollution Control Officers Association, *California Emissions Estimator Model, CalEEMod™*, www.caleemod.com, accessed February 16, 2017.

⁶⁸ SCAQMD, *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans*, 2008.

(2) Operation

Similar to construction, the SCAQMD-recommended CalEEMod is also used to calculate potential GHG emissions generated by new land uses on the Project Site, including area sources, electricity, natural gas, mobile sources, solid waste generation and disposal, and water usage/wastewater generation.

Mobile source emission calculations are based on projection of annual VMT, which is derived from the trip generation numbers included in the Traffic Study prepared for the Project.⁶⁹ These values account for the daily and seasonal variations in trip frequency and length associated with new employee and visitor trips to and from the Project Site and other activities that generate vehicle trips. CalEEMod calculates GHG emissions from all other sources based on the Project's increase in square footage.

(3) No Implementation of Emission Reduction Measures (NIERM) Calculations

This analysis calculates the emissions that would be generated by the Project in the absence of any GHG emission reduction measures (the no implementation of emission reduction measures or "NIERM" calculation) in support of a consistency determination relative to applicable plans and policies.

The NIERM calculation does not consider site-specific conditions, project design features, or prescribed mitigation measures. Mobile source emissions under the NIERM calculation were derived using the ITE trip-generation rate for each proposed land use and did not consider site-specific benefits resulting from the co-location of complementary commercial/retail/restaurant uses in proximity to other existing off-site residential and commercial uses or from proximity to public transportation. In addition, the NIERM calculation conservatively does not include actions and mandates that are not already in place but are expected to be enforced in 2020 (e.g., Pavley II, which could further reduce GHG emissions from use of light-duty vehicles by 2.5 percent).

(4) Consistency with Applicable Plans and Policies

A consistency analysis is provided, which describes the extent to which the Project complies with or exceeds performance-based standards included in the regulations that serve to implement applicable portions of the *Climate Change Scoping Plan*, the Regional

⁶⁹ Linscott, Law, & Greenspan, Engineers, *Traffic Impact Analysis 2nd & PCH Project*, March 2017; see Appendix R of this Draft EIR.

Transportation Plan/Sustainable Communities Strategy, and the Sustainable City Action Plan.

b. Thresholds of Significance

Until the passage of AB 32, CEQA documents generally did not evaluate GHG emissions or impacts on global climate change. Rather, the primary focus of air pollutant analysis in CEQA documents was the emission of criteria pollutants, or those identified in the California and federal CAAs as being of most concern to the public and government agencies (e.g., toxic air contaminants). With the passage of AB 32 and SB 97, CEQA documents now contain a more detailed analysis of GHG emissions.

OPR's recommended amendments to the CEQA Guidelines for GHGs were adopted by the California Natural Resources Agency on December 30, 2009. OPR's recommended amendments to the CEQA Guidelines for GHGs were adopted by the California Natural Resources Agency on December 30, 2009. Analysis of GHG emissions in a CEQA document presents unique challenges to lead agencies. However, such analysis must be consistent with existing CEQA principles, and, therefore, the amendments comprise relatively modest changes to various portions of the existing CEQA Guidelines. The amendments add no additional substantive requirements; rather, the CEQA Guidelines merely assist lead agencies in complying with CEQA's existing requirements. Modifications address those issues where analysis of GHG emissions may differ in some respects from more traditional CEQA analysis. Other modifications clarify existing law that may apply both to an analysis of GHG emissions, as well as more traditional CEQA analyses.

The following two questions relating to the effects of GHGs were added to the CEQA Guidelines, Appendix G (Environmental Checklist).

- Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

CEQA Guidelines Section 15064.4 was adopted to assist lead agencies in determining the significance of the impacts of GHGs. This section recommends that lead agencies to quantify GHG emissions of projects where possible. In addition to quantification, Section 15064.4 recommends consideration of several other factors that may be used in the determination of significance (i.e., extent to which a project may increase or reduce GHG emissions; whether a project exceeds an applicable significance

threshold; and the extent to which a project complies with regulations or requirements adopted to implement a reduction or mitigation of GHGs).

CEQA Guidelines Section 15064.4 does not establish a threshold of significance. Lead agencies have the discretion to establish significance thresholds for their respective jurisdictions in which a lead agency may appropriately look to thresholds developed by other public agencies, or suggested by other experts, such as the California Air Pollution Control Officers Association (CAPCOA), as long as any threshold chosen is supported by substantial evidence (see CEQA Guidelines Section 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130(f)).⁷⁰

Although GHG emissions can be quantified, CARB, SCAQMD, and the City of Long Beach have yet to adopt project-level significance thresholds for GHG emissions that would be applicable to the Project.⁷¹

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be concluded not to be cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative impact within the geographic area of the project.⁷² To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency.⁷³ Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions."⁷⁴ Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than

⁷⁰ See, generally, Section 15130(f); see also Letter from Cynthia Bryant, Director of the Office of Planning and Research to Mike Chrisman, Secretary for Natural Resources, dated April 13, 2009.

⁷¹ The South Coast Air Quality Management District has formed a GHG Significance Threshold Working Group. More information on this Working Group is available at www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds/page/2, accessed January 30, 2017.

⁷² 14 CCR § 15064(h)(3).

⁷³ 14 CCR § 15064(h)(3).

⁷⁴ 14 CCR § 15064(h)(3).

significant for GHG emissions if a project complies with program and/or other regulatory schemes designed to reduce GHG emissions.⁷⁵

In the absence of any adopted, numeric threshold, the significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) by considering whether the Project complies with applicable regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. For this Project, as a land use development project, the most directly applicable adopted regulatory plan to reduce GHG emissions is the 2016–2040 RTP/SCS, which is designed to achieve regional GHG reductions from the land use and transportation sectors as required by SB 375 and the State's long-term climate goals. This analysis also considers consistency with regulations or requirements adopted by the *Climate Change Scoping Plan* and the City of Long Beach's Sustainability City Action Plan.

c. Project Design Features

As discussed in Section II, Project Description, of this Draft EIR, the Project incorporates features to support and promote environmental sustainability. "Green" principles have been incorporated in the Project to comply with the City of Long Beach Green Building Ordinance (Ordinance No. ORD-09-0013) and the sustainability intent of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED[®]) program at the Certified level (or equivalent). These include energy conservation, transportation, waste reduction, and other related measures, as detailed below.

Energy Measures

- Shield exterior fixtures to limit light pollution and glare.

⁷⁵ See, for example, *San Joaquin Valley Air Pollution Control District, CEQA Determinations of Significance for Projects Subject to ARB's GHG Cap-and-Trade Regulation, APR—2030 (June 25, 2014)*, in which the SJVAPCD "determined that GHG emissions increases that are covered under ARB's Cap-and-Trade regulation cannot constitute significant increases under CEQA..." Further, the South Coast Air Quality Management District (SCAQMD) has taken this position in CEQA documents it has produced as a lead agency. The SCAQMD has prepared three Negative Declarations and one Draft Environmental Impact Report that demonstrate the SCAQMD has applied its 10,000 MTCO₂e/yr. significance threshold in such a way that GHG emissions covered by the Cap-and-Trade Program do not constitute emissions that must be measured against the threshold. See: SCAQMD, *Final Negative Declaration for: Ultramar Inc. Wilmington Refinery Cogeneration Project, SCH No. 2012041014 (October 2014)*; SCAQMD, *Final Negative Declaration for Phillips 66 Los Angeles Refinery Carson Plant—Crude Oil Storage Capacity Project, SCH No. 2013091029 (December 2014)*; *Final Mitigated Negative Declaration for Toxic Air Contaminant Reduction for Compliance with SCAQMD Rules 1420.1 and 1402 at the Exide Technologies Facility in Vernon, CA, SCH No. 2014101040 (December 2014)*; and *Draft Environmental Impact Report for the Breitburn Santa Fe Springs Blocks 400/700 Upgrade Project, SCH No. 2014121014 (April 2014)*.

- Commission all building envelope and energy consuming systems to ensure efficient operations and reduce both operational and maintenance costs.
- Meet or exceed Title 24, Part 6, California Energy Code baseline standard requirements for energy efficiency, based on the 2016 Energy Efficiency Standards requirements.

Transportation Measures

- Provide bike parking on-site to reduce vehicle trips.
- Provide preferred parking for clean air, van pools, and fuel efficiency vehicles to encourage clean air vehicle use.
- Provide pre-wiring for electric vehicles in 3 percent of parking spaces on-site.

Construction Materials

- Recycle or otherwise divert from landfills a minimum of 65 percent of construction waste generated on-site.
- Utilize finishing materials such as paints, primers, sealants, and other materials that emit low quantities of volatile organic compounds (VOCs) and/or other air quality pollutants.
- Utilize panelized wood products that have low levels of formaldehyde.
- Utilize carpet and hard flooring that has low VOC content and/or is composed of recycled products.

Indoor Air Quality and Durability

- Weather protect all exterior entrances to improve the long-term durability of buildings.
- Require third-party testing to ensure that energy systems are installed and functioning as intended.
- Ensure tight ductwork in air conditioning systems to improve comfort and reduce energy costs.
- Utilize bathroom fan systems that either operate continuously or have humidistats to automatically remove moisture and minimize mold growth.

Water Measures

- Install water conserving fixtures that reduce water use by at least 20 percent.
- Install weather-based irrigation controllers.

d. Project Emissions

The Project would result in direct and indirect GHG emissions generated by different types of emissions sources, including:

- Construction: emissions associated with demolition of the existing buildings parking areas, shoring, grading, and construction-related equipment and vehicular activity;
- Area source: emissions associated with landscape equipment;
- Energy source (building operations): emissions associated with space heating and cooling, water heating, energy consumption, and lighting;
- Mobile source: emissions associated with vehicles accessing the project site;
- Solid Waste: emissions associated with the decomposition of the waste, which generates methane based on the total amount of degradable organic carbon; and
- Water/Wastewater: emissions associated with energy used to pump, convey, deliver, and treat water.

The Project would generate an incremental contribution to and cumulative increase in sources of GHGs. A specific discussion regarding potential GHG emissions associated with the construction and operational phases of the Project is provided below.

(1) Construction

Project construction is anticipated to be completed in 2019. A summary of construction details (e.g., schedule, equipment mix, and vehicular trips) and CalEEMod modeling input assumptions and output files are provided in Appendix B of this Draft EIR. The emissions of GHGs associated with construction of the Project were calculated for each year of construction activity. A summary of GHG emissions for each year of construction is presented in Table IV.E-5 on page IV.E-42.

**Table IV.E-5
Combined Construction-Related Emissions
(MTCO₂e)**

Year	MTCO ₂ e ^a
2017	371
2018	2,438
2019	88
Total	2,897
Amortized Over 30 Years	97
<p>^a CO₂e was calculated using CalEEMod and the results are provided in Section 2.0 of the Construction CalEEMod output file within Appendix B of this Draft EIR.</p> <p>Source: Eyestone Environmental, 2017.</p>	

As presented in Table IV.E-5, construction of the Project is estimated to generate a total of 2,897 MTCO₂e. As recommended by the SCAQMD, the total GHG construction emissions were amortized over the 30-year lifetime of the Project (i.e., total construction GHG emissions were divided by 30 to determine an annual construction emissions estimate that can be added to the Project's operational emissions) in order to determine the Project's annual GHG emissions inventory.⁷⁶

(2) Operation

(a) Area Source Emissions

Project area source emissions (i.e., direct sources of GHG emissions located at the project site with the exception of building operations) and to a lesser extent existing site conditions would be limited to combustion emissions from landscape maintenance equipment. These GHG emissions were calculated using the CalEEMod emissions inventory model based on the type of land use and acreage. As shown in Table IV.E-6 on page IV.E-43, landscape maintenance activities do not represent a substantial source of GHG emissions, and all analyzed conditions (e.g., Future No Project) are expected to result in less than 1 metric ton of CO₂e per year from area sources. The Project would not incorporate any specific project design features that would reduce the use of landscape maintenance equipment. As such, the Project would not result in a reduction in GHG emissions (for area source emissions) in comparison to NIERM.

⁷⁶ SCAQMD Governing Board Agenda Item 31, December 5, 2008.

**Table IV.E-6
Area (Landscaping) Source Emissions**

Source	Total CO ₂ e (mtons/year) ^a
Future No Project	<1
NIERM	<1
Project	<1
<p>^a CO₂e was calculated using CalEEMod and the results are provided in Section 6.0 of the corresponding CalEEMod output files within Appendix B of this Draft EIR. Source: Eyestone Environmental, 2017.</p>	

(b) Electricity and Natural Gas Generation Emissions

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 emissions in an indirect manner.

Electricity and natural gas emissions were 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 (SCE) 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 in 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.

CalEEMod electricity and natural gas usage rates are based on the CEC-sponsored California Commercial End-Use Survey (CEUS) and California Residential Appliance Saturation Survey (RASS) studies.⁷⁷ The data are specific for climate zones; therefore,

⁷⁷ CEC, *Commercial End-Use Survey, March 2006, and California Residential Appliance Saturation Survey, October 2010.*

Zone 11 was selected for the Project Site based on the zip code tool. Since these studies are based on older buildings, adjustments have been made to account for changes to Title 24 building codes but do not reflect 2016 Title 24 standards. For the Project scenario, an adjustment was made to account for the 2016 Title 24 standards. As discussed above, the 2016 Title 24 standards are applicable to the Project as the Project would be built after January 1, 2017, after the 2016 Title 24 standards went into effect. Since the NIERM scenario reflects the standards that were in effect under the *Climate Change Scoping Plan* prepared in 2006 (Title 24, 2005 Building Energy Efficiency Standards), CalEEMod also provides the ability to select electricity and usage rates that would reflect previous versions of Title 24.

As shown in Table IV.E-7 on page IV.E-45, Project GHG emissions from electricity consumption would result in 1,735 MTCO_{2e} per year as compared to 2,255 MTCO_{2e} per year under the NIERM scenario. This would represent a reduction of approximately 23 percent in comparison to the NIERM scenario. This reduction from NIERM is attributable to compliance with mandatory requirements for achieving LEED® Certification (or equivalent). Furthermore, electricity from lighting also would be reduced consistent with the Energy Independence and Security Act, which requires approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs.

As shown in Table IV.E-8 on page IV.E-46, Project GHG emissions from natural gas consumption would result in 1,040 MTCO_{2e} per year as compared to 1,099 MTCO_{2e} per year under the NIERM scenario. This would represent a reduction of approximately 5 percent in comparison to the NIERM scenario. This reduction from NIERM is also attributable to compliance with mandatory requirements for achieving LEED® Certification (or equivalent).

(c) Mobile Source Emissions

Mobile-source emissions were calculated using the SCAQMD-recommended CalEEMod emissions inventory model. CalEEMod calculates the emissions associated with on-road mobile sources associated with employees, visitors, and delivery vehicles visiting the Project Site based on the number of daily trips generated and VMT.

Mobile source operational emissions were calculated based on the project trip-generation estimates provided for the Project by Linscott Law & Greenspan.⁷⁸ As discussed in Section IV.K, Traffic and Access, of this Draft EIR, to calculate daily trips, the

⁷⁸ Linscott, Law, & Greenspan, Engineers, *Traffic Impact Analysis 2nd & PCH Project*, March 2017; see Appendix R of this Draft EIR.

**Table IV.E-7
Electricity Emissions^a**

Scenario	Electricity Usage (MWh/Year)	Total MTCO ₂ e (per year)
No Project	3,670	1,173
NIERM ^b	7,053	2,255
Project ^c	5,426	1,735

MWh = megawatt hour

^a *Energy calculation worksheets are provided in Appendix U. CO₂e was calculated using CalEEMod, and the results are provided in Section 2.0 of the Operation CalEEMod output file within Appendix B of this Draft EIR.*

^b *The NIERM scenario assumed consistency with the 2008 Scoping Plan in which electricity demand would comply with the 2005 Title 24 Building Standards Code.*

^c *The Project scenario assumed that electricity demand would comply with the 2016 Title 24 Building Standards Code. CalEEMod default values only account for compliance with 2013 Title 24. Therefore, electricity usage was reduced as follows: 2016 Standards reduce Title 24 electricity requirements by 5 percent for non-residential (2016 Building Energy Efficiency Standards—Adoption Hearing Presentation).*

Source: Eystone Environmental, 2017.

amount of building area for the commercial and retail uses were multiplied by the applicable trip-generation rates based on the Institute of Transportation Engineers' (ITE) *Trip Generation, 9th Edition*.

CalEEMod calculates VMT based on the type of land use, trip purpose, trip type percentages for each land use subtype in the project (primary, diverted, and pass-by). The model assumes that diverted trips are 25 percent of the primary trip lengths and pass-by trips are assumed to be 0.1 mile in length and are a result of no diversion from the primary route. The Los Angeles County urban primary trip distance was selected for this analysis.

Public transit in the Project area is provided by Metro, Orange County Transportation Authority, and Long Beach Transit. Long Beach Transit operates 10 bus lines in the study area and also provides free Passport shuttle service connecting visitors to and around Downtown Long Beach attractions and destinations. The Orange County Transportation Authority provides three bus lines in the study area. The Metro Blue Line 1st Street Station is located approximately 5 miles east of the Project Site. Refer to Section IV.K, Traffic and Access, of this Draft EIR for more details regarding trip reduction measures. The Project also reflects characteristics that reduce trips and VMT as compared to standard ITE trip generation rates. More specifically, the Project characteristics listed below are consistent with the CAPCOA guidance document, *Quantifying Greenhouse Gas Mitigation Measures*, which provides emission reduction

**Table IV.E-8
Natural Gas Emissions^a**

Scenario	Natural Gas Usage (kBtu/Year)	Total MTCO ₂ e (per year)
No Project	12,076	648
NIERM ^b	20,469	1,099
Project ^c	19,376	1,040

kBtu = British thermal units

^a Energy calculation worksheets are provided in Appendix U. CO₂e was calculated using CalEEMod, and the results are provided in Section 2.0 of the Operation CalEEMod output file within Appendix B of this Draft EIR.

^b The NIERM scenario assumed consistency with the 2008 Scoping Plan in which natural gas usage would comply with the 2005 Title 24 Building Standards Code.

^c The Project scenario assumed that natural gas usage would comply with the 2016 Title 24 Building Standards Code in which no substantial reductions in natural gas usage would occur in comparison to the 2013 Title 24 requirements.

Source: Eyestone Environmental, 2017.

values for recommended mitigation measures and serves to reduce vehicle trips and VMT. These characteristics thus would result in a reduction in the Project's VMT and associated GHG emissions.⁷⁹ Measures applicable to the Project include the following:

- Increase Diversity of Urban and Suburban Developments (Mixed-Uses) (LUT-3):** The Project would introduce new uses on the Project Site, including new commercial/retail/restaurant uses. The Project would co-locate complementary commercial/retail/restaurant uses in proximity to other existing off-site residential and commercial uses. The increases in land use diversity and the specific mix of uses on the Project Site would reduce vehicle trips and VMT by encouraging walking and non-automotive forms of transportation (i.e., walking and biking), which would result in corresponding reductions in transportation-related emissions. (Note: This measure results in a 15.5-percent reduction in VMT.)
- Increase Destination Accessibility (LUT-4):** The Project Site is located within 5 miles of Downtown Long Beach and the Port of Long Beach, both of which are primary job centers and are easily accessible by public transportation. Access to multiple destinations in proximity to the Project Site would reduce vehicle trips and VMT compared to the statewide average; encourage walking and

⁷⁹ California Air Pollution Control Officers Association, *Quantifying Greenhouse Gas Mitigation Measures*, 2010, pp. 162–189.

non-automotive forms of transportation; and would result in corresponding reductions in transportation-related emissions as a result of the Project. (Note: This measure results in a 9.3-percent reduction in VMT.)

- **Provide Pedestrian Network Improvements (SDT-1):** Project design would provide pedestrian access that minimizes barriers and links the Project Site with the existing street network to encourage people to walk instead of drive. The Project would provide direct access to the existing off-site pedestrian network to encourage and increase pedestrian activities in the area, which would further reduce VMT and associated transportation-related emissions. (Note: This measure results in a 0.6-percent reduction in VMT.)

CalEEMod calculates VMT based on the type of land use, trip purpose, trip type percentages for each land use subtype in the project (primary, diverted, and pass-by). As shown in Table IV.E-9 on page IV.E-48, the Project GHG emissions from mobile sources would result in a total 10,609 MTCO₂e per year as compared to 14,222 MTCO₂e per year for a standard project with similar land use characteristics within the air basin. This would represent a reduction of approximately 25 percent in comparison to the NIERM scenario. This reduction from the NIERM scenario is attributable to the Project characteristics described above.

(d) Solid Waste Generation Emissions

Emissions related to solid waste were calculated using the CalEEMod emissions inventory model, which multiplies an estimate of the waste generated by applicable emissions factors provided in Section 2.4 of USEPA's AP-42, Compilation of Air Pollutant Emission Factors. CalEEMod solid waste generation rates for each applicable land use were selected for this analysis. As shown in Table IV.E-10 on page IV.E-49, the Project and NIERM scenario are both expected to result in a total of 476 MTCO₂e per year from solid waste.

(e) Water Usage and Wastewater Generation Emissions

GHG emissions are related to the energy used to convey, treat, and distribute water and wastewater. Thus, these emissions are generally indirect emissions from the production of electricity to power these systems. Three processes are necessary to supply potable water; these include: (1) supply and conveyance of the water from the source; (2) treatment of the water to potable standards; and (3) distribution of the water to individual users. After use, energy is used as the wastewater is treated and reused as reclaimed water.

**Table IV.E-9
Mobile Source Emissions**

Scenario	Daily Weekday Trips^a	Annual VMT^b	Total MTCO₂e^c (per year)
No Project	957	1,991,580	1,031
NIERM	17,915	29,383,773	14,222
Project	17,915	21,065,774	10,609

^a Average daily trips are based on the Project's trip-generation estimates in the Traffic Study (see Appendix R of this Draft EIR). Please note that the rate does not include the reduction from pass-by trips included in the Traffic Study since CalEEMod calculates the reduction in those trips internally.

^b VMT was calculated using CalEEMod and the results are provided in Section 2.0 of the Operation CalEEMod output file within Appendix B of this Draft EIR.

^c The reduction from the NIERM scenario is attributable to vehicular trip reduction measures provided in CAPCOA guidelines.

Source: Eyestone Environmental, 2017.

Emissions related to water usage and wastewater generation were calculated using the CalEEMod emissions inventory model, which multiplies an estimate of the water usage by the applicable energy intensity factor to determine the embodied energy necessary to supply potable water.⁸⁰ GHG emissions are then calculated based on the amount of electricity consumed multiplied by the GHG intensity factors for the utility provider. In this case, embodied energy for Southern California supplied water and GHG intensity factors for SCE were selected in CalEEMod.

As shown in Table IV.E-11 on page IV.E-50, the Project is expected to result in 174 MTCO₂e as compared to 226 MTCO₂e per year under the NIERM scenario per year from water usage and wastewater generation, which would represent a reduction of approximately 23 percent in comparison to the NIERM scenario. This reduction from NIERM is attributable to compliance with mandatory requirements for achieving LEED® Certification (or equivalent). Also refer to Section IV.L.1, Utilities and Service Systems—Water Supply and Infrastructure, of this Draft EIR for discussion of specific water usage reduction measures applicable to the Project.

⁸⁰ The intensity factor reflects the average pounds of CO₂e per megawatt generated by a utility company.

**Table IV.E-10
Solid Waste Generation Emissions**

	Tons/Year	Total MTCO ₂ e ^a (per year)
No Project	93	47
NIERM	946	476
Project	946	476

^a CO₂e was calculated using CalEEMod and the results are provided in Section 2.0 of the Operation CalEEMod output file within Appendix B of this Draft EIR.
Source: Eyestone Environmental, 2017.

(3) Combined Construction and Operational Impacts

As shown in Table IV.E-12 on page IV.E-51, when taking into consideration implementation of project design features provided throughout this Draft EIR, including the requirements set forth in the City of Long Beach Green Building Ordinance and the full implementation of current state mandates, the GHG emissions for the Project in 2019 would equal 97 MTCO₂e per year during construction and 14,033 MTCO₂e per year during operation of the Project with a combined total of 14,130 MTCO₂e per year.

Furthermore, the Project would be designed in accordance with applicable regulatory requirements and the project design features included throughout this Draft EIR that would reduce emissions through reduced energy consumption and be consistent with goals provided in the City's General Plan Air Quality Element and the City's Sustainable City Action Plan. Specifically, the Project would comply with the 2016 Title 24 standard requirements for energy efficiency, and new buildings and infrastructure would be designed to achieve the standards of the Certified Rating under LEED[®] (or equivalent).

(4) NIERM Calculation

Table IV.E-12 calculates the GHG emissions that would occur under the NIERM scenario, which highlights the GHG emissions reductions achieved by regulatory requirements and design features. As shown in Table IV.E-12, the Project would result in a decrease in GHG emissions that represents an approximate 23-percent reduction from the NIERM scenario. The Project includes project design features and is subject to all applicable regulatory requirements that would reduce the Project's GHG emissions profile and would represent improvements vis-à-vis the NIERM scenario. These reductions in GHG emissions reflect the measures set forth in the applicable GHG reduction plans and policies and demonstrate the efficacy of these measures.

**Table IV.E-11
Water Usage/Wastewater Generation Emissions^a**

	Indoor (gallons/year)	Outdoor (gallons/year)	Total MTCO₂e (per year)
No Project	4,300,000	500,000	26
NIERM	36,540,000	6,790,000	226
Project	29,230,000	3,390,000	174
<p>^a CO₂e was calculated using CalEEMod and the results are provided in Section 2.0 of the Operation CalEEMod output file within Appendix B of this Draft EIR. Source: Eyestone Environmental, 2017.</p>			

(5) Consistency with Applicable Plans and Policies

As described above, compliance with a GHG emissions reduction plan renders a less-than-significant impact. The following section describes the extent the Project complies with or exceeds the performance-based standards included in the regulations that serve to implement the *Climate Change Scoping Plan*, the Regional Transportation Plan/Sustainable Communities Strategy, and the Sustainable City Action Plan. As shown herein, the Project would be consistent with the applicable GHG reduction plans and policies.

(a) *Climate Change Scoping Plan*

The goal to reduce GHG emissions to 1990 levels by 2020 (Executive Order S-3-05) was codified by AB 32, and in 2008, CARB approved a *Climate Change Scoping Plan* as required by AB 32.⁸¹ The *Climate Change Scoping Plan* proposes 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.”⁸² The *Climate Change Scoping Plan* has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 implementation fee to fund the program. The following discussion demonstrates how the pertinent reduction actions relate to and reduce project-related GHG emissions.

⁸¹ *Climate Change Proposed Scoping Plan was approved by CARB on December 11, 2008.*

⁸² *Climate Change Scoping Plan, CARB, December 2008.*

Table IV.E-12
Annual GHG Emissions Summary (Year 2019)^a
(metric tons of carbon dioxide equivalent [MTCO₂e])

Scope	No Project	“NIERM” Scenario	Project	Project’s Reduction from the “NIERM” Scenario ^b
Area	<1	<1	<1	N/A
Energy	1,712	3,354	2,775	17%
Mobile	939	14,222	10,609	25%
Solid Waste	47	476	476	0%
Water/Wastewater	26	226	174	23%
Construction	0	97	97	0%
Total Emissions	2,723	18,375	14,130	23%

^a CO₂e was calculated using CalEEMod and the results are provided in Section 2.0 of the Operation CalEEMod output file within Appendix B of this Draft EIR. Total emissions for the “NIERM” Scenario and the Project reflect emission from operation of the proposed buildings less existing uses to be removed.

^b The total break from NIERM percent reduction represents the average reduction applied to the total emissions generated by the Project in comparison to the NIERM scenario.

Source: Eyestone Environmental, 2017.

As shown in Table IV.E-12, the Project would result in 14,130 MTCO₂e annually. The breakdown of emissions by source category shows approximately less than 1 percent from area sources; 20 percent from energy consumption; 76 percent from mobile sources; 3 percent from solid waste generation; 1 percent from water supply, treatment, and distribution; and 1 percent from construction activities. Provided in Table IV.E-13 on page IV.E-52 is an evaluation of applicable reduction actions/strategies by emissions source category to determine how the Project’s design features comply with or exceed the reduction actions/strategies outlined in the *Climate Change Scoping Plan*.⁸³

(b) 2016–2040 RTP/SCS

As discussed above, the SCAG region was home to about 18.3 million people in 2012 and currently includes approximately 5.9 million homes and 7.4 million jobs. By 2040, the integrated growth forecast projects that these figures will increase by 3.8 million people, with nearly 1.5 million more homes and 2.4 million more jobs. The 2016–2040

⁸³ An evaluation of stationary sources is not necessary as the stationary sources emissions will be created by emergency generators which would only be used in an emergency.

**Table IV.E-13
Consistency Analysis—Climate Change Scoping Plan**

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
Area (Less than 1 percent of project inventory)		
SCAQMD Rule 445 (Wood Burning Devices): Requires use of natural gas to power all cooking stoves and fireplaces.	SCAQMD	Consistent. The Project does not include any residential uses, and no wood burning cooking stoves or fireplaces are proposed with the Project.
Energy (20 percent of project inventory)		
California Renewables Portfolio Standard (RPS) program: Senate Bill 2X modified California’s RPS program to require that both public and investor-owned utilities in California receive at least 33 percent of their electricity from renewable sources by the year 2020. California Senate Bill 2X also requires regulated sellers of electricity to meet an interim milestone of procuring 25 percent of their energy supply from certified renewable resources by 2016.	SCE	Consistent. According to the 2015 Power Content Label, SCE indicated that 25 percent of its electricity came from renewable resources in Year 2015. ^a As SCE would provide electricity service to the Project Site, the Project would use electricity that is produced consistent with this performance-based standard.
Senate Bill 350 (SB 350): The Clean Energy and Pollution Reduction Act of 2015 increases the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by 2030 and also requires the State Energy Resources Conservation and Development Commission to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation. ^b	State Energy Resources Conservation and Development Commission and SCE	Consistent. SCE would be required to meet this performance based standard. As SCE would provide electricity service to the Project Site, the Project, by 2030, would use electricity consistent with this performance-based standard. Project buildout would occur in Year 2019, and, therefore, the estimated GHG emissions from electricity usage provided above conservatively do not include implementation of SB 350 with a compliance date of 2030. Electricity GHG emissions presented in Table IV.E-7 on page IV.E-45 would be further reduced by 15 percent by Year 2030 as the electricity provided to the Project Site would meet the requirements under SB 350. Doubling of the energy efficiency savings from final end uses of retail customers by 2030 would primarily rely on the existing suite of building energy efficiency standards under the CCR Title 24, Part 6 (consistency with this regulation is discussed below) and utility-sponsored programs such as rebates for high-efficiency appliances, HVAC systems, and

**Table IV.E-13 (Continued)
Consistency Analysis—Climate Change Scoping Plan**

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
		insulation.
<p>Senate Bill 1368 (SB 1368): GHG Emissions Standard for Baseload Generation prohibits any retail seller of electricity in California from entering into a long-term financial commitment for baseload generation if the GHG emissions are higher than those from a combined-cycle natural gas power plant.</p>	State and SCE	<p>Consistent. SCE would be required to meet this performance-based standard. As SCE would provide electricity service to the Project Site, the Project would use electricity consistent with this performance-based standard.</p>
<p>California Code of Regulations (CCR), Title 20: The 2012 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>Consistent. This performance standard applies to new appliances and lighting that are sold or offered for sale in California. The Project would include new appliances and lighting that comply with this energy efficiency standard. In addition, Section IV.L.2, Utilities and Service Systems—Energy, of this Draft EIR demonstrates that the Project efficiently uses energy and does not result in wasteful energy use.</p>
<p>CCR, Title 24, Building Standards Code: The 2013 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. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods.</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>Consistent. Consistent with regulatory requirements, the Project shall comply with applicable provisions of the California Green Building Standards. The 2016 Title 24 standards offer builders better windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses. Thus, the Project has incorporated energy efficiency standards that are more effective than the measures identified in the <i>Climate Action Scoping Plan</i> to reduce GHG emissions.</p>
<p>Energy Independence and Security Act of 2007 (EISA): EISA requires manufacturing for sale within the Untitled States to phase out incandescent light bulbs</p>	Federal/ Manufacturers	<p>Consistent. EISA would serve to reduce the use of incandescent light bulbs for the Project and, thus, reduce energy usage associated with lighting. Electricity GHG emissions provided in Table IV.E-7 on</p>

**Table IV.E-13 (Continued)
Consistency Analysis—Climate Change Scoping Plan**

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
between 2012 and 2014 resulting in approximately 25 percent greater efficiency for light bulbs and requires approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020.		page IV.E-45 conservatively account for a 25-percent reduction in lighting electricity consumption with implementation of this regulation.
Assembly Bill 1109 (AB 1109): The Lighting Efficiency and Toxic Reduction Act prohibits a person from manufacturing for sale in the State requires the establishment of minimum energy efficiency standards for all general purpose lights. The standards are structured to reduce average statewide electrical energy consumption by not less than 50 percent from the 2007 levels for indoor residential lighting and not less than 25 percent from the 2007 levels for indoor commercial and outdoor lighting by 2018. ^d	State/ Manufacturers	Consistent. As with the EISA, discussed above, the Project would meet the requirements under AB 1109 because it incorporates energy efficient lighting and electricity consumption that complies with local and state green building programs.
Cap-and-Trade Program: The program establishes an overall limit on GHG emissions from capped sectors (e.g., electricity generation, petroleum refining, and cement production). Facilities subject to the cap are able to trade permits to emit GHGs within the overall limit.	State	Consistent. As required by AB 32 and the Climate Change Scoping Plan, the Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. Therefore, GHG emissions associated with the Project's 5,426 MWh of electricity usage per year presented in Table IV.E-7 on page IV.E-45 would be covered by the Cap-and-Trade Program and would be consistent with AB and the Climate Change Scoping Plan.
Mobile (75 percent of project inventory)		
Assembly Bill 1493 (AB 1493) "Pavely Standards": AB 1493 requires the development and adoption of regulations to achieve "the maximum feasible reduction of greenhouse gases" emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the State.	State, CARB	Consistent. The Pavley Standards reduced GHG emissions from California passenger vehicles by about 22 percent in 2012 and are expected to reduce GHG emissions by about 30 percent in 2016, all while improving fuel efficiency. GHG emissions related to vehicular travel by the Project would benefit from this regulation because vehicle trips associated with the Project would be affected by AB 1493. Mobile

Table IV.E-13 (Continued)
Consistency Analysis—Climate Change Scoping Plan

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
In compliance with AB 1493, CARB adopted regulations to reduce GHG emissions from non-commercial passenger vehicles and light duty trucks of model year 2009 through 2016. Model years 2017 through 2025 are addressed by California's Advanced Clean Cars program (discussed below).		source emissions generated by the Project would be reduced with implementation of AB 1493 consistent with reduction of GHG emissions under AB 32. Mobile source GHG emissions provided in Table IV.E-9 on page IV.E-48 were calculated using CalEEMod which includes implementation of AB 1493 into mobile source emission factors.
Executive Order S-01-07: The Low Carbon Fuel Standard (LCFS) requires a 10-percent or greater reduction by 2020 in the average fuel carbon intensity for transportation fuels in California regulated by CARB. CARB identified the LCFS as a Discrete Early Action item under AB 32, and the final resolution (09-31) was issued on April 23, 2009 (CARB 2009). ^{e,f}	State, CARB	Consistent. GHG emissions related to vehicular travel by the Project would benefit from this regulation because fuel used by Project-related vehicles would be compliant with LCFS. Mobile source GHG emissions provided in Table IV.E-9 on page IV.E-48 were calculated using CalEEMod which includes implementation of the LCFS into mobile source emission factors.
Advanced Clean Cars Program: In 2012, CARB approved the Advanced Clean Cars Program, a new emissions-control program for model year 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles. By 2025, when the rules will be fully implemented, the new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.	State, CARB	Not applicable. Although this is not applicable to the Project since it is a statewide program, standards under the Advanced Clean Cars Program will apply to all passenger and light duty trucks used by customers, employees, and deliveries to the Project. GHG emissions related to vehicular travel by the Project would benefit from this regulation and mobile source emissions generated by the Project would be reduced with implementation of standards under the Advanced Clean Cars Program consistent with reduction of GHG emissions under AB 32. Mobile source GHG emissions provided in Table IV.E-9 on page IV.E-48, conservatively do not include this additional 34-percent reduction in mobile source emissions as the CalEEMod model does not yet account for this regulation.
Senate Bill 375: SB 375 requires integration of planning processes for transportation, land-use and housing. Under SB 375, each Metropolitan Planning Organization would be required to adopt a Sustainable Community Strategy (SCS) to encourage compact development that reduces passenger vehicle miles traveled and trips so	State, CARB Regional, SCAG	Consistent. SB 375 requires SCAG to direct the development of the SCS for the region, which is discussed further below. The Project represents an infill development within an existing urbanized area that would concentrate new retail and restaurant uses within a HQTAs. Therefore, the Project would be consistent with SCAG's 2016–2040 RTP/SCS as it is located within a HQTAs. Furthermore, the 2016–2040

**Table IV.E-13 (Continued)
Consistency Analysis—Climate Change Scoping Plan**

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
that the region will meet a target, created by CARB, for reducing GHG emissions.		RTP/SCS would result in an estimated 18-percent decrease in per capita GHG emissions by 2035 and 21-percent decrease in per capita GHG emissions by 2040. As project-related transportation emissions are reduced by approximately 25 percent (see Table IV.E-9 on page IV.E-48), therefore the Project would be consistent with SB 375 and the 2016–2040 RTP/SCS.
Solid Waste (Three percent of project inventory)		
<p>California Integrated Waste Management Act of 1989 and Assembly Bill 341: The California Integrated Waste Management Act of 1989 requires each jurisdiction’s source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; and (2) diversion of 50 percent of all solid waste on and after January 1, 2000, through source reduction, recycling, and composting facilities.⁹</p> <p>AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the State that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020, and annually thereafter.^h</p>	State	<p>Consistent. GHG emissions related to solid waste generation from the Project would benefit from this regulation as it would decrease the overall amount of solid waste disposed of at landfills. The decrease in solid waste would then in return decrease the amount of methane released from the decomposing solid waste. As discussed in the Initial Study prepared for the Project, which is included in Appendix A of this Draft EIR, Project construction materials would be recycled in accordance with the City’s Construction and Demolition Program, which requires a minimum construction waste reduction of approximately 60 percent. During operation, the Project would provide a designated recycling area to facilitate recycling.</p>
Water (One percent of project inventory)		
<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>Consistent. The Project would incorporate features to meet the sustainability intent of LEED® Certification (or equivalent) (e.g., 20-percent overall water use reduction). Project-related GHG emissions from water-related sources, provided in Table IV.E-11 on page IV.E-50, incorporates the water conservation features discussed further in Section IV.L.1, Utilities and Service Systems—Water Supply and</p>

Table IV.E-13 (Continued)
Consistency Analysis—Climate Change Scoping Plan

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
		Infrastructure, of this Draft EIR. As the Project would have an overall water use reduction of 20 percent, the Project would meet the requirements of the California Green Building Standards.
<p>Senate Bill X7-7: The Water Conservation Act of 2009 sets an overall goal of reducing per-capita urban water use by 20 percent by December 31, 2020. The State is required to make incremental progress toward this goal by reducing per-capita water use by at least 10 percent by December 31, 2015. This in an implementing measure of the Water Sector of the AB 32 Scoping Plan. Reduction in water consumption directly reduces the energy necessary and the associated emissions to convene, treat, and distribute the water; it also reduces emissions from wastewater treatment.</p>	State	<p>Consistent. As discussed above under Title 24, the Project would meet this performance based standard. In addition, Section IV.L.1, Utilities and Service Systems—Water Supply and Infrastructure, of this Draft EIR discusses various water conservation features such as the use of drought-tolerant landscaping and use of water-efficient plumbing fixtures. The Project thereby includes measures consistent with the GHG reductions sought by SB X7-7 related to water conservation and related GHG emissions.</p>
<p>Construction (One percent of project inventory)</p>		
<p>CARB In-Use Off-Road Regulation: CARB’s in-use off-road diesel vehicle regulation (“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>	CARB	<p>Consistent. The Project Applicant would use construction contractors that would comply with this regulation.</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.</p>	CARB	<p>Consistent. The Project Applicant would use construction contractors that would comply with this regulation.</p>
<p>^a California Energy Commission, Utility Annual Power Content Labels for 2015, www.energy.ca.gov/pcl/labels/, accessed January 30, 2017.</p>		

Table IV.E-13 (Continued)
Consistency Analysis—Climate Change Scoping Plan

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
<p>^b Senate Bill 350 (2015–2016 Reg. Session) Stats 2015, Ch. 547.</p> <p>^c CEC, Energy Commission Approves More Efficient Buildings for California’s Future, News Release, May 31, 2012.</p> <p>^d 2007b. Assembly Bill 1109 (2007–2008 Reg. Session) Stats. 2007, Ch. 534.</p> <p>^e CARB, Initial Statement of Reason for Proposed Regulation for The Management of High Global Warming Potential Refrigerant for Stationary Sources, October 23, 2009.</p> <p>^f Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the “lifecycle” of a transportation fuel.</p> <p>^g California Public Resources Code Section 41780(a).</p> <p>^h California Public Resources Code Section 41780.01(a).</p> <p>Source: Eyestone Environmental, 2017.</p>		

RTP/SCS is the region's transportation and sustainability investment strategy for protecting and enhancing the region's quality of life and economic prosperity through this period. The 2016–2040 RTP/SCS implementation is expected to result in regional benefits to mobility, economy, health and sustainability. The 2016–2040 RTP/SCS is also expected to help California reach its GHG reduction goals, with reductions in per capita transportation emissions of 9 percent by 2020 and 16 percent by 2035.⁸⁴ Furthermore, although there are no per capita GHG emission reduction targets for passenger vehicles set by CARB for 2040, the 2016–2040 RTP/SCS GHG emission reduction trajectory shows that more aggressive GHG emission reductions are projected for 2040.⁸⁵ The 2016–2040 RTP/SCS would result in an estimated 8-percent decrease in per capita GHG emissions by 2020, 18-percent decrease in per capita GHG emissions by 2035, and 21-percent decrease in per capita GHG emissions by 2040. By meeting and exceeding the SB 375 targets for 2020 and 2035, as well as achieving an approximately 21-percent decrease in per capita GHG emissions by 2040 (an additional 3-percent reduction in the five years between 2035 [18 percent] and 2040 [21 percent]), the 2016–2040 RTP/SCS is expected to fulfill and exceed its portion of SB 375 compliance with respect to meeting the State's GHG emission reduction goals. As shown in Table IV.E-9 on page IV.E-48, the Project results in a VMT reduction of approximately 28 percent in comparison to the NIERM scenario and a 25-percent reduction in GHG emissions from mobile sources and would be consistent with the reduction in transportation emission per capita provided in the 2016–2040 RTP/SCS. The Project also would be consistent with the following key GHG reduction strategies in SCAG's 2016–2040 RTP/SCS, which are based on changing the region's land use and travel patterns:

- Compact growth in areas accessible to transit;
- Jobs closer to transit;
- New job growth focused in High Quality Transit Areas (HQTA); and
- Biking and walking infrastructure to improve active transportation options, transit access.

The Project represents an infill development that would revitalize the existing site of the SeaPort Marina Hotel by replacing this use with a commercial use within a HQTA, which is defined by the 2016–2040 RTP/SCS as generally walkable transit villages or corridors that are within 0.5 mile of a well-serviced transit stop or a transit corridor with 15-minute or less service frequency during peak commute hours (see Section IV.H, Land Use, of this Draft

⁸⁴ CARB, *Regional Greenhouse Gas Emission Reduction Targets Pursuant to SB 375, Resolution 10-31*.

⁸⁵ SCAG, *Final 2016–2040, RTP/SCS, April 2016, p. 153*.

EIR for further discussion). Please refer to Exhibit 5.1 of the 2016–2040 RTP/SCS.⁸⁶ As previously discussed, public transit in the Project area is provided by Metro, Orange County Transportation Authority, and Long Beach Transit. The Long Beach Transit operates 10 bus lines in the study area and also provides free Passport shuttle service connecting visitors to and around Downtown Long Beach attractions and destinations. The Orange County Transportation Authority provides three bus lines in the study area. The Metro Blue Line 1st Street Station is located approximately 5 miles east of the Project Site. Refer to Section IV.K, Traffic and Access, of this Draft EIR for more details regarding trip reduction measures. Pursuant to Project Design Feature K-1, the Project also would incorporate characteristics that reduce trips and VMT as compared to standard ITE trip generation rates. In addition, the Project would provide bicycle parking for Project employees and visitors, along with convenient access to public transit and opportunities for walking and biking, all of which would facilitate a reduction in VMT and related vehicular GHG emissions. These and other measures would further promote a reduction in VMT and subsequent reduction in GHG emissions, which would be consistent with the goals of SCAG’s 2016–2040 RTP/SCS.

At the regional level, the 2016–2040 RTP/SCS is an applicable plan adopted for the purpose of reducing GHGs. In order to assess the Project’s potential to conflict with the 2016–2040 RTP/SCS, this section also analyzes the Project’s land use assumptions for consistency with those utilized by SCAG in its Sustainable Communities Strategy. Generally, projects are considered consistent with the provisions and general policies of applicable City and regional land use plans and regulations, such as SCAG’s RTP/SCS, if they are compatible with the general intent of the plans and would not preclude the attainment of their primary goals. Table IV.E-14 on page IV.E-61 demonstrates the Project’s consistency with the Actions and Strategies set forth in the 2016–2040 RTP/SCS.⁸⁷ Therefore, the Project would be consistent with the GHG reduction-related actions and strategies contained in the 2016–2040 RTP/SCS.

In sum, the Project is the type of land use development that is encouraged by the RTP/SCS to reduce VMT and expand multi-modal transportation options in order for the region to achieve the GHG reductions from the land use and transportation sectors required by SB 375, which, in turn, advances the State’s long-term climate policies.⁸⁸ By

⁸⁶ *Southern California Association of Governments, Final 2016–2040, RTP/SCS, April 2016, p. 77.*

⁸⁷ *As discussed in the 2016–2040 RTP/SCS, the actions and strategies included in the 2016–2040 RTP/SCS remain unchanged from those adopted in the 2012–2035 RTP/SCS.*

⁸⁸ *As discussed above, SB 375 legislation links regional planning for housing and transportation with the GHG reduction goals outlined in AB 32.*

**Table IV.E-14
Consistency Analysis—RTP/SCS**

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
Land Use Actions and Strategies		
Coordinate ongoing visioning efforts to build consensus on growth issues among local governments and stakeholders.	SCAG	Not Applicable. The responsible party identified in the 2016–2040 RTP/SCS for implementation of this action/strategy is SCAG. Nonetheless, the City, which is the lead agency for the Project, regularly coordinates with SCAG on regional growth issues.
Provide incentives and technical assistance to local governments to encourage projects and programs that balance the needs of the region.	SCAG	Not Applicable. The responsible party identified in the 2016–2040 RTP/SCS for implementation of this action/strategy is SCAG. Nonetheless, the City, which is the lead agency for the Project, regularly coordinates with SCAG on its advancement of projects and programs that meet regional needs.
Collaborate with local jurisdictions and agencies to acquire a regional fair share housing allocation that reflects existing and future needs.	SCAG Local Jurisdictions HCD	Consistent. The Project would not impair SCAG, the City, or HCD's ability to acquire a regional fair share housing allocation that reflects existing and future needs.
Expand Compass Blueprint program to support member cities in the development of bicycle, pedestrian, Safe Routes to Schools, Safe Routes to Transit, and ADA Transition plans.	SCAG State	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and the State of California. The Project would not impair SCAG or the State's expansion of the Compass Blueprint program. Moreover, the network of streets surrounding the Project Site provides sidewalks connected to transit stops to promote alternative transportation and ensure safe routes for bicycles and pedestrians.
Continue to support, through Compass Blueprint, local jurisdictions and sub-regional COGs adopting neighborhood-oriented development, suburban villages, and revitalized main streets as livability strategies in areas not served by high-quality transit.	SCAG State Local Jurisdictions COGs	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG, the State, local jurisdictions, and COGs. Nevertheless, the Project area is well-served by high-quality transit and is designated as a HQT. The Project would not impair the City from adopting neighborhood-oriented development, revitalized main streets as livability strategies in areas not served by high-quality transit.
Encourage the use of range-limited battery electric and other alternative fueled vehicles through policies and programs, such as, but not limited to, neighborhood oriented development, complete streets, and Electric (and other alternative fuel) Vehicle Supply Equipment in public parking lots.	Local Jurisdictions COGs SCAG CTCs	Consistent. While the use of alternatively-fueled vehicles by the Project's future employees and visitors is market driven and beyond the direct control or influence of the Project Applicant, the Project would not impair the City's or SCAG's ability to encourage the use of alternatively-fueled vehicles through various policies and programs.
Continue to support, through Compass Blueprint, planning for new mobility modes such as range-limited	SCAG State	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and the State.

Table IV.E-14 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
Neighborhood Electric Vehicles (NEVs) and other alternative fueled vehicles.		However, as noted above, the Project would not impair any jurisdiction's ability to encourage the use of alternatively-fueled vehicles.
Collaborate with the region's public health professionals to enhance how SCAG addresses public health issues in its regional planning, programming, and project development activities.	SCAG State Local Jurisdictions	Consistent. The Project would not impair the City's, SCAG's, or the State's ability to collaborate with the region's public health professionals regarding the integration of public health issues in regional planning. Additionally, the Project would encourage healthy lifestyles through the provision of bicycle parking spaces on-site in compliance with the requirements of the LBMC. Moreover, the Project would incorporate measures to reduce air emissions and greenhouse gases, minimize hazards, and ensure water quality (see Section IV.B, Air Quality; Section IV.F, Hazards and Hazardous Materials; and IV.G, Hydrology and Water Quality).
Support projects, programs, and policies that support active and healthy community environments that encourage safe walking, bicycling, and physical activity by children, including, but not limited to development of complete streets, school siting policies, joint use agreements, and bicycle and pedestrian safety education.	Local Jurisdictions SCAG	Consistent. As previously discussed, the Project would encourage healthy lifestyles through the provision of bicycle parking on-site in compliance with LBMC requirements. Additionally, the Project would promote walking by improving sidewalks and the streetscape in the Project vicinity. The Project would substantially enhance the pedestrian realm with new lighting, landscaping, and sidewalks that are compliant with ADA requirements.
Seek partnerships with state, regional, and local agencies to acquire funding sources for innovative planning projects.	Local Jurisdictions SCAG State	Not Applicable. The Project would not impair the City's, SCAG's or the State's ability to seek partnerships in furtherance of funding acquisition.
Update local zoning codes, General Plans, and other regulatory policies to accelerate adoption of land use strategies included in the 2012–2035 RTP/SCS Plan Alternative, or that have been formally adopted by any subregional COG that is consistent with regional goals.	Local Jurisdictions	Not Applicable. While this action/strategy is not directly applicable, the Project would support this action/strategy via consistency with SCAG's 2016–2040 RTP/SCS Plan, as demonstrated above. Specifically, as discussed in Section IV.H, Land Use, of the Draft EIR, the Project would be consistent with the goals and policies in the Regional Comprehensive Plan, including goals and policies related to land use and housing, water, energy, air quality, solid waste, and transportation.
Update local zoning codes, General Plans, and other regulatory policies to promote a more balanced mix of residential, commercial, industrial, recreational and institutional uses located to provide options and to contribute to the resiliency and vitality	Local Jurisdictions	Consistent. While this action/strategy is not directly applicable, the Project would support this action/strategy by creating a development that offers employment and other community-serving activities and opportunities that will contribute to the resiliency and vitality of neighborhoods.

Table IV.E-14 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
of neighborhoods and districts.		
Support projects, programs, policies and regulations that encourage the development of complete communities, which includes a diversity of housing choices and educational opportunities, jobs for a variety of skills and education, recreation and culture, and a full-range of shopping, entertainment and services all within a relatively short distance.	Local Jurisdictions SCAG	Consistent. The Project would create an infill development in proximity to destinations and other neighborhood services. Commercial uses are located in the immediate vicinity of the Project Site, including restaurants, retail, entertainment, and residential uses, along Pacific Coast Highway. The Project Site would also include retail and restaurant uses.
Pursue joint development opportunities to encourage the development of housing and mixed-use projects around existing and planned rail stations or along high-frequency bus corridors, in transit-oriented development areas, and in neighborhood-serving commercial areas.	Local Jurisdictions CTCs	Not Applicable. While this action/strategy is not directly applicable, the Project would not impair the City's or CTC's ability to pursue joint development opportunities. Moreover, the Project would accommodate regional growth projected by SCAG in the Los Angeles County subregion within an infill site that is adjacent to existing, approved, and planned infrastructure, urban services, transportation corridors, transit facilities, and major employment centers in furtherance of SB 375 policies.
Working with local jurisdictions, identify resources that can be used for employing strategies to maintain and assist in the development of affordable housing.	SCAG Local Jurisdictions	Not Applicable. While this action/strategy is not directly applicable, the Project would not impair the City's or SCAG's ability to identify resources that can be used for employing strategies to maintain and assist in the development of affordable housing.
Consider developing healthy community or active design guidelines that promote physical activity and improved health.	Local Jurisdictions	Consistent. As discussed above, the Project would encourage healthy lifestyles through the provision of bicycle parking spaces on-site in compliance with the requirements of the LBMC. Additionally, the Project would promote a pedestrian-friendly community by providing landscaped pedestrian pathways around the perimeter of the Project Site, and landscaped pedestrian-oriented open space areas such as plaza and paseos within the interior of the Project Site. Landscaped pedestrian walkways both within and along the perimeter of the Project Site would facilitate pedestrian access throughout the Project Site, as well as between adjacent uses. Landscaped pedestrian-oriented open space areas would include pedestrian seating, enhanced paving, planters, and accent trees.
Support projects, programs, policies, and regulations to protect resources areas, such as natural habitats and farmland, from future development.	Local Jurisdictions SCAG	Consistent. The Project would not impair the City's or SCAG's ability to support projects, programs, policies, and regulations to protect resources areas, such as natural habitats and farmland, from future

Table IV.E-14 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
		development. Furthermore, the Project is not located in an area that would impact such resource areas.
Create incentives for local jurisdictions and agencies that support land use policies and housing options that achieve the goals of SB 375.	State SCAG	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and the State. However, the Project would be consistent with the goals of SB 375, including the goal to reduce VMT and the corresponding emission of GHGs, as demonstrated by this policy-level analysis.
Continue partnership with regional agencies to increase availability of state funding for integrated land use and transportation projects in the region.	State SCAG	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and the State. However, the Project would not impair the ability of SCAG and the State to increase the availability of funding for integrated land use and transportation projects in the region.
Engage in a strategic planning process to determine the critical components and implementation steps for identifying and addressing open space resources, including increasing and preserving park space, specifically in park-poor communities.	Local Jurisdictions SCAG	Not Applicable. While this action/strategy is not directly applicable, the Project would not impair the ability of the City and SCAG to engage in strategic planning processes to address recreational/park shortages in existing communities. Moreover, the Project would include approximately 146,797 square feet of open space.
Identify and map regional priority conservation areas for potential inclusion in future plans.	SCAG	Not Applicable. The responsible party identified in the 2016–2040 RTP/SCS for implementation of this action/strategy is SCAG. However, the Project would not impair SCAG's ability to identify and map regional priority conservation areas for potential inclusion in future plans.
Engage with various partners, including CTCs and local agencies, to determine priority conservation areas and develop an implementable plan.	SCAG CTCs	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and CTCs. However, the Project would not impair the ability of SCAG and CTCs to engage with various partners on issues pertaining to conservation areas.
Develop regional mitigation policies or approaches for the 2016 RTP.	SCAG CTCs	Not Applicable. SCAG and CTCs are the responsible parties for developing regional mitigation policies or approaches for the 2016 RTP. SCAG adopted the 2016–2040 RTP/SCS on April 7, 2016.
Transportation Network Actions and Strategies		
Perform and support studies with the goal of identifying innovative transportation strategies that enhance mobility and air quality, and	SCAG CTCs	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and CTCs. However, the Project would not impair the ability of SCAG and

Table IV.E-14 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
determine practical steps to pursue such strategies, while engaging local communities in planning efforts.		CTCs to perform and support various studies to identify innovative transportation strategies. The Project would also incorporate measures to reduce air emissions (see Section IV.B, Air Quality, of this Draft EIR).
Cooperate with stakeholders, particularly county transportation commissions and Caltrans, to identify new funding sources and/or increased funding levels for the preservation and maintenance of the existing transportation network.	SCAG CTCs Local Jurisdictions	Not Applicable. While the Project would not impair the ability of SCAG, the CTCs, or the City to cooperate with stakeholders to identify new funding sources and/or increase funding levels, the Project would support this action/strategy by providing an on-site circulation network to improve local access, with appropriate design considerations to ensure travel safety and reliability.
Expand the use of transit modes in our subregions such as BRT, rail, limited-stop service, and point-to-point express services utilizing the HOV and HOT lane networks.	SCAG CTCs Local Jurisdictions	Not Applicable. The Project would not impair the ability of SCAG, the CTCs, or the City to expand and extend the use of other transit modes to the Project Site. However, the Project is well-served by transit and in accordance with Project Design Feature K-8 set forth in Section IV.K, Traffic and Access, of this Draft EIR, the Project would implement a TDM Program that will encourage transit use. Specific TDM measures include bulletin boards/kiosks with bus schedules, ridesharing, bike routes, and carpool/vanpool opportunities, carpool/vanpool parking and bicycle parking.
Encourage transit providers to increase frequency and span of service in TOD/HQTA and along targeted corridors where cost-effective and where there is latent demand for transit usage.	SCAG CTCs	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and CTCs. However, the Project would not impair the ability of SCAG and CTCs to encourage transit providers to increase the frequency and span of service in the Project area, which is considered a HQTA. Furthermore, the Project would benefit from this action/strategy as the Project is located within a HQTA.
Encourage regional and local transit providers to develop rail interface services at Metrolink, Amtrak, and high-speed rail stations.	SCAG CTCs Local Jurisdictions	Not Applicable. While this action/strategy is not necessarily applicable on a project-specific basis, the Project would not impair the ability of SCAG, CTC, or the City to encourage rail interface services.
Expand the Toolbox Tuesdays program to include bicycle safety design, pedestrian safety design, ADA design, training on how to use available resources that expand understanding of where collisions are happening, and information on available grant opportunities to improve bicycle and pedestrian	SCAG State	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and the State. However, the Project would support this action/strategy by providing safe areas to bike and walk.

Table IV.E-14 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
safety.		
Prioritize transportation investments to support compact infill development that includes a mix of land uses, housing options, and open/park space, where appropriate, to maximize the benefits for existing communities, especially vulnerable populations, and to minimize any negative impacts.	SCAG CTCs Local Jurisdictions	Consistent. The Project is an infill development consisting retail and restaurant uses in close proximity to jobs, destinations, and other neighborhood services. In addition, the Project would include a number of open space areas and recreational amenities. Open space areas include landscaped pedestrian pathways around the Project Site perimeter and pedestrian-oriented open space areas such as the plaza and paseos within the Project Site interior.
Explore and implement innovative strategies and projects that enhance mobility and air quality, including those that increase the walkability of communities and accessibility to transit via non-auto modes, including walking, bicycling, and neighborhood electric vehicles (NEVs) or other alternative fueled vehicles.	SCAG CTCs Local Jurisdictions	Consistent. The Project is a bicycle-friendly, commercial development that would promote a pedestrian-friendly community by connecting the surrounding community to the Project and result in an improved and aesthetically appealing streetscape that would promote pedestrian activity. The Project Site is also located in a HQTAs as designated by the 2016–2040 RTP/SCS. The Project would provide bicycle parking spaces for Project visitors and employees in accordance with LBMC requirement. By combining these features, the Project would serve to reduce vehicle trips and thus VMT, thereby contributing to a reduction in air pollutant emissions.
Collaborate with local jurisdictions to plan and develop residential and employment development around current and planned transit stations and neighborhood commercial centers.	SCAG CTCs Local Jurisdictions	Consistent. While this action/strategy is not directly applicable to the project, the Project is located in proximity to public transit opportunities, including Metro bus lines. The availability and accessibility of public transit in the Project area is evidenced by the Project Site's location within a designated HQTAs. Moreover, the Project is well-served by transit and pursuant to Project Design Feature K-8, would implement a TDM Program that would encourage transit use. Specific TDM measures include bulletin boards/kiosks with bus schedules, ridesharing, bike routes, and carpool/vanpool opportunities, carpool/vanpool parking and bicycle parking.
Collaborate with local jurisdictions to provide a network of local community circulators that serve new TOD, HQTAs, and neighborhood commercial centers providing an incentive for residents and employees to make trips on transit.	SCAG CTCs Local Jurisdictions	Consistent. The Project would not impair the ability of SCAG, CTC, or the City to provide a network of local community circulators that serve new TOD, HQTAs, and neighborhood commercial centers. Moreover, as discussed above, the Project is located in proximity to public transit opportunities including Metro bus lines. The availability and accessibility of public transit in the Project area is evidenced by the Project Site's location within a designated HQTAs.
Similar to SCAG's partnership with	SCAG	Not Applicable. The responsible parties identified

Table IV.E-14 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
the City of Los Angeles and LACMTA, offer to all County Transportation Commissions a mutually funded, joint first-mile/last-mile study for each region.	CTCs	in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and CTC. However, the Project would not impair SCAG's or the CTC's ability to offer the mutually-funded first-mile/last-mile study for each of the CTC regions.
Develop first-mile/last-mile strategies on a local level to provide an incentive for making trips by transit, bicycling, walking, or neighborhood electric vehicle or other ZEV options.	CTCs Local Jurisdictions	Consistent. The Project would not impair the CTC's or the City's ability to develop first-mile/last-mile strategies. In support of this action/strategy, the Project is located in proximity to public transit opportunities, including Metro bus lines. In addition, the Project would provide bicycle parking spaces for visitors and employees in compliance with the requirements of the LBMC.
Encourage transit fare discounts and local vendor product and service discounts for residents and employees of TOD/HQTAs or for a jurisdiction's local residents in general who have fare media.	Local Jurisdictions	Consistent. The Project would not impair the City's ability to encourage transit fare discounts and local vendor product and service discounts for residents and employees of TOD/HQTAs. Moreover, as shown in Table IV.E-9 on page IV.E-48, the Project's GHG emissions from mobile sources would represent a reduction of approximately 25 percent in comparison to the NIERM scenario.
Work with transit properties and local jurisdictions to identify and remove barriers to maintaining on-time performance.	SCAG CTCs Local Jurisdictions	Not Applicable. While this action/strategy is not directly applicable, the Project would not impair the SCAG's, CTCs', or the City's ability to work with transit properties to remove barriers to maintain on-time performance.
Develop policies and prioritize funding for strategies and projects that enhance mobility and air quality.	State	Not Applicable. The responsible party identified in the 2016–2040 RTP/SCS for implementation of this action/strategy is the State. However, the Project would not impair the State's ability to develop and prioritize funding for strategies and projects that enhance mobility and air quality.
Work with the California High-Speed Rail Authority and local jurisdictions to plan and develop optimal levels of retail, residential, and employment development that fully take advantage of new travel markets and rail travelers.	State	Not Applicable. The responsible party identified in the 2016–2040 RTP/SCS for implementation of this action/strategy is the State. However, the Project would not impair the State from working with the California High-Speed Rail Authority and local jurisdictions to plan and develop optimal levels of retail, residential, and employment development.
Work with state lenders to provide funding for increased transit service in TOD/HQTA in support of reaching SB 375 goals.	SCAG State	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and the State. However, the Project would not impair SCAG or the State from working with state lenders to provide funding for increased transit services in TOD/HQTA.
Continue to work with neighboring Metropolitan Planning Organizations	SCAG	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of

Table IV.E-14 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis^a
to provide alternative modes for interregional travel, including Amtrak and other passenger rail services and an enhanced bikeway network, such as on river trails.	State	this action/strategy are SCAG and the State. However, the Project would not impair the collaboration of SCAG, the State, and MPOs to provide alternative modes for interregional travel.
Encourage the development of new, short haul, cost-effective transit services such as DASH and demand responsive transit (DRT) in order to both serve and encourage development of compact neighborhood centers.	CTCs Municipal Transit Operators	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are CTC and Municipal Transit Operators. However, the Project would not impair the development of new, short haul, cost-effective transit services such as DASH and demand responsive transit (DRT).
Work with the state legislature to seek funding for Complete Streets planning and implementation in support of reaching SB 375 goals.	SCAG State	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and the State. The Project would not impair the state legislature to seek funding for Complete Streets planning and implementation in support of reaching SB 375 goals.
Continue to support the California Interregional Blueprint as a plan that links statewide transportation goals and regional transportation and land use goals to produce a unified transportation strategy.	SCAG State	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and the State. Nonetheless, as previously discussed, the Project would address land use and transportation concerns via development of a pedestrian friendly commercial building in proximity to the regional roadway network. Furthermore, the Project is located in a HQT.
Transportation Demand Management (TDM) Actions and Strategies		
Examine major projects and strategies that reduce congestion and emissions and optimize the productivity and overall performance of the transportation system.	SCAG	Not Applicable. The responsible party identified in the 2016–2040 RTP/SCS for implementation of this action/strategy is SCAG. However, as shown in Table IV.E-9 on page IV.E-48, the Project GHG emissions from mobile sources would represent a reduction of approximately 25 percent in comparison to the NIERM scenario.
Develop comprehensive regional active transportation network along with supportive tools and resources that can help jurisdictions plan and prioritize new active transportation projects in their cities.	SCAG CTCs Local Jurisdictions	Not Applicable. While this action/strategy is not directly applicable, the Project would not impair SCAG's, CTC's, or the City's ability to develop a comprehensive regional active transportation.
Encourage the implementation of a Complete Streets policy that meets the needs of all users of the streets, roads and highways—including bicyclists, children, persons with disabilities, motorists, neighborhood	Local Jurisdictions COGs SCAG CTCs	Consistent. In support of AB 1358, the design of the Project would enhance the urban appeal and walkability of the Project vicinity. The Project would promote a pedestrian-friendly community by providing landscaped pedestrian pathways around the perimeter of the Project Site, and landscaped

**Table IV.E-14 (Continued)
Consistency Analysis—RTP/SCS**

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
electric vehicle (NEVs) users, movers of commercial goods, pedestrians, users of public transportation and seniors—for safe and convenient travel in a manner that is suitable to the suburban and urban contexts within the region.		pedestrian-oriented open space areas such as a plaza and paseos within the interior of the Project Site. Landscaped pedestrian walkways both within and along the perimeter of the Project Site would facilitate pedestrian access throughout the Project Site, as well as between adjacent uses. Landscaped pedestrian-oriented open space areas would include pedestrian seating, enhanced paving, planters, and accent trees.
Support work-based programs that encourage emission reduction strategies and incentivize active transportation commuting or ride-share modes.	SCAG Local Jurisdictions	Consistent. The Project would not impair the City's or SCAG's ability to support work-based programs that encourage emission reduction strategies and incentivize active transportation community or ride share-modes. Moreover, as shown in Table IV.E-9 on page IV.E-48, the Project GHG emissions from mobile sources would represent a reduction of approximately 25 percent in comparison to the NIERM scenario.
Develop infrastructure plans and educational programs to promote active transportation options and other alternative fueled vehicles, such as neighborhood electric vehicles (NEVs), and consider collaboration with local public health departments, walking/biking coalitions, and/or Safe Routes to School initiatives, which may already have components of such educational programs in place.	Local Jurisdictions	Not Applicable. While this action/strategy is not directly applicable, the Project would not impair the City's ability to develop infrastructure plans and education programs to promote active transportation options and other alternative fueled vehicles. Moreover, the Project includes bicycle parking spaces on-site in compliance with LBMC requirements.
Encourage the development of telecommuting programs by employers through review and revision of policies that may discourage alternative work options.	Local Jurisdictions CTCs	Consistent. The Project would not impair the City's or CTC's ability to encourage the development of telecommuting programs by employers through review and revision of policies.
Emphasize active transportation and alternative fueled vehicle projects as part of complying with the Complete Streets Act (AB 1358).	State SCAG Local Jurisdictions	Consistent. The Project would not impair the City's ability to develop infrastructure plans and education programs to promote active transportation options and other alternative fueled vehicles. Moreover, the Project includes bicycle parking spaces on-site in compliance with LBMC requirements.
Transportation System Management (TSM) Actions and Strategies		
Work with relevant state and local transportation authorities to increase the efficiency of the existing transportation system.	SCAG Local Jurisdictions State	Consistent. The Project would not impair the ability of SCAG, the City, or the State to work with relevant transportation authorities to increase the efficiency of the existing transportation system. Moreover, the Project is well-served by transit and pursuant to Project Design Feature K-8, would implement a TDM

Table IV.E-14 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
		program that would encourage transit use. Specific TDM measures include bulletin boards/kiosks with bus schedules, ridesharing, bike routes, and carpool/vanpool opportunities, carpool/vanpool parking and bicycle parking.
Collaborate with local jurisdictions and subregional COGs to develop regional policies regarding TSM.	SCAG COGs Local Jurisdictions	Consistent. The Project would not impair the ability of SCAG, the COGs, or the City to collaborate on the development of regional TSM policies. All Project transportation-related improvements would be developed in consultation with transit service providers, as appropriate, and constructed in compliance with their respective standards.
Contribute to and utilize regional data sources to ensure efficient integration of the transportation system.	SCAG CTCs	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and CTCs. However, as discussed in Section IV.K, Traffic and Access, of this Draft EIR, the Project’s traffic analysis is based on consultation with the City of Long Beach and includes anticipated growth in the Project area. In addition, SCAG’s regional data, including population and employment forecasts are used where appropriate throughout this Draft EIR.
Provide training opportunities for local jurisdictions on TSM strategies, such as Intelligent Transportation Systems (ITS).	SCAG Local Jurisdictions	Not Applicable. While this action/strategy is not directly applicable, the Project would not impair the ability of SCAG or the City to provide TSM strategy training.
Collaborate with local jurisdictions and subregional COGs to continually update the ITS inventory.	SCAG COGs Local Jurisdictions	Not Applicable. While this action/strategy is not directly applicable, the Project would not impair the ability of SCAG, the COGs, or the City to collaborate on updates to the ITS inventory. See the discussion directly above regarding the Project’s support of transportation system management strategies.
Collaborate with CTCs to regularly update the county and regional ITS architecture.	SCAG CTCs Local Jurisdictions	Not Applicable. While this action/strategy is not directly applicable, the Project would not impair the ability of SCAG, the CTCs, or the City to collaborate on updates to the ITS architecture. See the discussion above regarding the Project’s support of transportation system management strategies.
Collaborate with the state and federal Government and subregional COGs to examine potential innovative TDM/TSM strategies.	SCAG State COGs	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG, the State, and the COGs. However, the Project would not impair the collaboration of the state and federal government and subregional COGs to examine potential innovative TDM/TSM strategies.

Table IV.E-14 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
Clean Vehicle Technology Actions and Strategies		
Develop a Regional PEV Readiness Plan with a focus on charge port infrastructure plans to support and promote the introduction of electric and other alternative fuel vehicles in Southern California.	SCAG	Not Applicable. The responsible party identified in the 2016–2040 RTP/SCS for implementation of this action/strategy is SCAG. However, the Project would not impair the development of a regional PEV Readiness Plan.
Support subregional strategies to develop infrastructure and supportive land uses to accelerate fleet conversion to electric or other near zero-emission technologies. The activities committed in the two subregions (Western Riverside COG and South Bay Cities COG) are put forward as best practices that others can adopt in the future. (See Appendix: Vehicle Technology, for more information.)	SCAG Local Jurisdictions	Not Applicable. While the acceleration of fleet conversion by the Project's future employees and guests is market driven and beyond the direct control or influence of the Project Applicant, the Project would not impair the City's or SCAG's ability to support subregional strategies in furtherance of that conversion.
<p>SCAG = Southern California Association of Governments HCD = California Department of Housing and Community Development COG = subregional council of governments CTCs = county transportation commissions TOD = transit-oriented development HQTA = High Quality Transit Area</p> <p>^a "Not Applicable" actions/strategies are those that are not identified for implementation by Local Jurisdictions. The Project's consistency with any actions/strategies identified for implementation by the Local Jurisdictions (i.e., the City of Long Beach) is assessed above.</p> <p>Source: SCAG 2012–2035 RTP/SCS, Chapter 4: Sustainable Communities Strategy, Tables 4.3 through 4.7; April 2012.</p>		

furthering implementation of SB 375, the Project supports regional land use and transportation GHG reductions consistent with state regulatory requirements.

(c) Sustainable City Action Plan

The Project would be consistent with the City of Long Beach Sustainable City Action Plan. The plan is intended to guide operational, policy and financial decisions to create a more sustainable Long Beach. The Sustainable City Action Plan includes measurable goals and actions that are intended to be challenging, yet realistic.

Table IV.E-15 on page IV.E-73 provides a discussion of the Project's consistency with applicable GHG-reducing actions from the Sustainable City Action Plan. As discussed below, the Project is consistent with the applicable goals and actions of the Sustainable City Action Plan.

(d) Conclusion

In summary, the regulatory compliance analysis provided above demonstrates that the Project's design, sustainability, site, and land use characteristics comply with or exceed the regulations and reduction actions/strategies applicable to the Project. By furthering implementation of SB 375, the Project supports regional land use and transportation GHG reductions consistent with state regulatory requirements for 2020 and 2035. The Project is also consistent with regulations and requirements of the City of Long Beach Sustainable City Action Plan. For these reasons, the Project's GHG emissions are considered less than significant.

(6) Post-2020 Analysis

Recent studies show that the State's existing and proposed regulatory framework put the State on a pathway to reduce its GHG emissions level to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050 if additional appropriate reduction measures are adopted.⁸⁹ Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies could allow the State to meet the 2050 target. Subsequent to the findings of these studies, SB 32 was passed on September 8, 2016, which requires the state board to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. As discussed above, the new plan outlined in SB 32 involves increasing renewable energy use, imposing tighter limits on the carbon

⁸⁹ *Energy and Environmental Economics (E3). "Summary of the California State Agencies' PATHWAYS Project: Long-term Greenhouse Gas Reduction Scenarios" (April 2015); Greenblatt, Jeffrey, Energy Policy, "Modeling California Impacts on Greenhouse Gas Emissions" (Vol. 78, pp. 158–172). The California Air Resources Board, California Energy Commission, California Public Utilities Commission, and the California Independent System Operator engaged E3 to evaluate the feasibility and cost of a range of potential 2030 targets along the way to the state's goal of reducing GHG emissions to 80 percent below 1990 levels by 2050. With input from the agencies, E3 developed scenarios that explore the potential pace at which emission reductions can be achieved, as well as the mix of technologies and practices deployed. E3 conducted the analysis using its California PATHWAYS model. Enhanced specifically for this study, the model encompasses the entire California economy with detailed representations of the buildings, industry, transportation and electricity sectors.*

Table IV.E-15
Consistency with Applicable GHG Emissions Goals and Actions of the Sustainable City Action Plan

Action	Goal	Consistency Analysis
Focus Area: Buildings & Neighborhoods		
Initiative 1	Accelerate the use of green building techniques in new development, renovations, and retrofits to improve building efficiency and health.	At least 5 million square feet of privately developed LEED® certified (or equivalent) green buildings by 2020.
		Consistent. Development of the Project would support this goal by meeting the intent of the U.S. Green Building Council's LEED® program at the Certified level (or equivalent). Sustainability features would include energy conservation, water conservation, and waste reduction features.
Initiative 3	Reduce electricity and natural gas consumption of the Long Beach community.	By 2020 reduce community electricity use by 15 percent and natural gas by 10 percent.
		Consistent. As shown in Table IV.E-12 on page IV.E-51, the Project would have a combined electricity and natural gas reduction of 17 percent due to consistency with mandatory requirements for achieving LEED® Certification (or equivalent).
Focus Area: Transportation		
Initiative 1	Reduce emissions and improve air quality by moving toward more fuel efficient and alternative fuel vehicles.	Reduce vehicle emissions by 30 percent by 2020.
		Consistent. As discussed above in Table IV.E-13 on page IV.E-52, several regulations from the Climate Change Scoping Plan would serve to reduce vehicle emissions. Specifically, with implementation of the Advanced Clean Cars Program, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions. Furthermore, the Project characteristics described above reduce VMT by 28 percent, which results in a by 25 percent reduction in emissions, as shown in Table IV.E-12 on page IV.E-51.
Focus Area: Waste Reduction		
Initiative 1	Increase diversion by reducing waste and increasing recycling and reuse.	Annual reduction in average pounds of solid waste generated per person per day.
		Consistent. The Project would comply with this action by providing clearly marked, source-sorted receptacles to facilitate recycling, as detailed in the Initial Study, provided in Appendix A of this Draft EIR.
Focus Area: Water Reduction		
Initiative 1	Ensure a sustainable water supply through conservation and reduced dependence on imported water.	Reduce per capita use of potable water, exceeding the state mandate to achieve a demand reduction of 20 percent in per capita water use by the year 2020.
		Consistent. As shown in Table IV.E-11 on page IV.E-50, the Project would have an indoor and outdoor water use reduction of 23 percent, which would exceed the state mandate to achieve a demand reduction of 20 percent.
<hr/> <p><i>Source: Eyestone Environmental, 2017.</i></p>		

content of gasoline and diesel fuel, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries.

As discussed above, SCAG's RTP/SCS establishes a regulatory framework for achieving GHG reductions from the land use and transportation sectors pursuant to SB 375 and the State's long term climate policies. The RTP/SCS ensures VMT reductions and other measures that to reduce regional emissions from the land use and transportation sector. Specifically, the 2016–2040 RTP/SCS would result in an estimated 8 percent decrease in per capita GHG emissions by 2020, 18-percent decrease in per capita GHG emissions by 2035, and 21-percent decrease in per capita GHG emissions by 2040. By meeting and exceeding the SB 375 targets for 2020 and 2035, as well as achieving an approximately 21-percent decrease in per capita GHG emissions by 2040 (an additional 3-percent reduction in the five years between 2035 [18 percent] and 2040 [21 percent]), the 2016–2040 RTP/SCS is expected to fulfill and exceed its portion of SB 375 compliance with respect to meeting the State's GHG emission reduction goals.

The Project is the type of land use development that is encouraged by the RTP/SCS to reduce VMT and expand multi-modal transportation options in order for the region to achieve the GHG reductions from the land use and transportation sectors required by SB 375, which, in turn, advances the State's long-term climate policies. By furthering implementation of SB 375, the Project would support regional land use and transportation GHG reductions consistent with state climate targets for 2020 and beyond 2020.

Thus, given the Project's consistency with state, SCAG, and City of Long Beach GHG emission reduction goals and objectives, the Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. In the absence of adopted standards and established significance thresholds, and given this consistency, it is concluded that the Project's impacts are not cumulatively considerable.

4. Cumulative Impacts

As explained above, the analysis of a project's GHG emissions is inherently cumulative in nature because climate change is a global problem and the emissions from any single project are typically negligible. Accordingly, the analysis above takes into account the potential for the Project to contribute to the cumulative impact of global climate change. Table IV.E-12 on page IV.E-51, illustrates that implementation of the Project's design, sustainability, site, and land use characteristics, combined with compliance with regulatory requirements, including state mandates, would contribute to GHG reductions.

The analysis shows that the Project is consistent with RTP/SCS regulatory requirements to reduce regional GHG emissions from the land use and transportation sectors by 2020 and 2035. The Project is also consistent with CARB's *Climate Change Scoping Plan*, particularly its emphasis on the identification of emission reduction opportunities that promote economic growth while achieving greater energy efficiency and accelerating the transition to a low-carbon economy. In addition, the Project would comply with the Sustainable City Action Plan, which emphasizes improving energy conservation and energy efficiency, increasing renewable energy generation, and changing transportation and land use patterns to reduce auto dependence. Furthermore, the Project's net GHG emissions are below the 2008 draft screening level from the SCAQMD. For these reasons, the Project's cumulative contribution to global climate change would be less than significant.

5. Mitigation Measures

With implementation of the Project's design, sustainability, site, and land use characteristics, combined with compliance with regulatory requirements, including those discussed above, impacts related to GHG emissions would be less than significant.

6. Level of Significance After Mitigation

Project impacts related to GHG emissions would be less than significant.