

IV. Environmental Impact Analysis

F. Greenhouse Gas Emissions

1. Introduction

This section of the Draft EIR provides a discussion of global climate change, existing regulations pertaining to global 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 C 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 the glass allows solar radiation (sunlight) into Earth's atmosphere but prevents radiative heat from escaping, thus warming Earth's atmosphere. Some levels of GHGs keep the average surface temperature of Earth close to a hospitable 60 degrees Fahrenheit. 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, and

¹ USEPA, *Climate Change: Basic Information*, www.epa.gov/climatechange/basics/, accessed April 14, 2017.

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 U.S. 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 April 14, 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), “Global warming poses a serious threat to the economic well-being, public health and natural environment in southern California and beyond. The potential adverse impacts of 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 CO₂ 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.F-1 on page IV.F-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 lifetime⁹ and GWP of selected gases is presented in Table IV.F-2 on page IV.F-5. 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.F-1
Description of Identified GHGs^a**

Greenhouse Gas	General Description
Carbon Dioxide (CO₂)	An odorless, colorless GHG, which has both natural and anthropocentric sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human caused) sources of CO ₂ are burning coal, oil, natural gas, and wood.
Methane (CH₄)	A flammable gas and is the main component of natural gas. When one molecule of CH ₄ is burned in the presence of oxygen, one molecule of CO ₂ and two molecules of water are released. A natural source of CH ₄ is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain CH ₄ , which is extracted for fuel. Other sources are from landfills, fermentation of manure, and cattle.
Nitrous Oxide (N₂O)	A colorless GHG. High concentrations can cause dizziness, euphoria, and sometimes slight hallucinations. N ₂ O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used in rocket engines, race cars, and as an aerosol spray propellant.
Hydrofluorocarbons (HFCs)	Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in CH ₄ or ethane (C ₂ H ₆) with chlorine and/or fluorine atoms. CFCs are 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)	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)	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*; USEPA, *Acute Exposure Guideline Levels (AEGs) for Nitrogen Trifluoride, January 2009*.

**Table IV.F-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

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 April 14, 2017.

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 increase 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;
- Erosion of California's coastlines would increase, as well as sea water intrusion;

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

- 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 the Harvard Medical School, the following are examples of how climate change can affect cardio-respiratory disease: (1) pollen is increased by higher levels of atmospheric 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.

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

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.*

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 GHGs 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 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 Title 40 of the Code of Federal Regulations (CFR), 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

(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.

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 Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews, Final Rule*.

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 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:

- 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

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.*

- 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:

- 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.

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.

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.

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) Assembly Bill 32 (California Global Warming Solutions Act of 2006)

Assembly Bill 32 (AB 32) (also known as the California Global Warming Solutions Act of 2006) 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 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

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.

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.

(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:

- 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

²¹ CARB, *Climate Change Scoping Plan: A Framework for Change*, December 2008.

²² CARB, *Climate Change Scoping Plan*, December 2008.

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

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. CARB originally defined the "business-as-usual" or 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 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* was approved on August 24, 2011 (*Supplemental FED*). The *Supplemental FED* indicated that 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*.

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

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}

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 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.” The First 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.²⁹

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.*

²⁹ CARB, *First Update to the Climate Change Scoping Plan*, May 2014, p. 34.

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.”³⁰ 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 First 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.”³¹ 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 comments were due April 10, 2017, and public board hearings were set through April 2017.³² However, at the time of the preparation of this Draft EIR, the final Proposed 2017 Update has not been released for CARB approval.

The Proposed 2017 Update builds upon the successful framework established by the initial Scoping Plan and the 2014 Update by outlining priorities and recommendations

³⁰ CARB, *First Update to the Climate Change Scoping Plan*, May 2014, p. 6.

³¹ CARB, *First Update to the Climate Change Scoping Plan*, May 2014, p. 32.

³² 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 20, 2017.

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.³³

(d) Senate Bill 32

Senate Bill 32 (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 CARB to ensure that Statewide GHG emissions 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

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 GHGs, criteria pollutants, and toxic air contaminants for each facility that reports to CARB and air districts. In addition, AB 197 adds two Members of the Legislature to CARB 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 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.³⁴

(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

³³ CARB, *2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target*, January 20, 2017.

³⁴ CARB, *Frequently Asked Questions, 2030 Carbon Target and Adaptation*.

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 2020.³⁵

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 MTCO₂e 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 First Update:

The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced.

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

³⁵ *With continuation of the Cap-and-Trade Program, the State can achieve a 40-percent reduction target by 2030.*

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.³⁶ [...]

[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.³⁷

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 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.³⁸

³⁶ CARB, *First Update to the Climate Change Scoping Plan*, May 2014, p. 88.

³⁷ CARB, *First Update to the Climate Change Scoping Plan*, May 2014, pp. 86–87.

³⁸ Center for Climate and Energy Solutions, *California Cap-and-Trade*, www.c2es.org/us-states-regions/key-legislation/california-cap-trade, accessed April 14, 2017.

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) Senate Bill 1078 (California Renewables Portfolio Standard)

Senate Bill 1078 (SB 1078), which is also known as the California Renewables Portfolio Standard (RPS) program, requires that 20 percent of the available energy supplies are 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. These levels of reduction are consistent with Pasadena Water and Power's (PWP) commitment to achieve 40 percent renewables by 2020.

(ii) Senate Bill 350

Senate Bill 350 (SB 350), signed October 7, 2015, is the Clean Energy and Pollution Reduction Act of 2015. 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.³⁹

³⁹ *Senate Bill 350 (2015–2016 Reg, Session) Stats 2015, ch. 547.*

(iii) Senate Bill 1368

Senate Bill 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 2016.⁴⁰ 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 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 2020 model year.⁴¹ CARB 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.

⁴⁰ CARB, *Clean Car Standards—Pavley, Assembly Bill 1493*, www.arb.ca.gov/cc/ccms/ccms.htm, last reviewed January 11, 2017.

⁴¹ 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.

(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 2015–2025. The components of the Advance Clean Car Standards include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.⁴² In March 2017, CARB voted unanimously to continue with the vehicle GHG emission standards and the ZEV program for cars and light trucks sold in California through 2025.⁴³

(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 housing and transportation with the GHG reduction goals outlined in AB 32. Reductions in

⁴² CARB, *California's Advanced Clean Cars Program*, www.arb.ca.gov/msprog/acc/acc.htm, last reviewed by CARB January 18, 2017.

⁴³ CARB, *News Release: CARB finds vehicle standards are achievable and cost-effective*, website: <https://www.arb.ca.gov/newsrel/newsrelease.php?id=908>, accessed April 14, 2017.

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 (Title 24, Part 6)

California's Energy Efficiency Standards for Residential and Nonresidential Buildings, located at Title 24, Part 6 of the California Code of Regulations 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.⁴⁴

The CEC adopted the 2016 Title 24 standards, which became effective on January 1, 2017, and are applicable to the Project. 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

⁴⁴ CEC, 2016 Building Energy Efficiency Standards, www.energy.ca.gov/title24/2016standards/, accessed April 14, 2017.

⁴⁵ CEC, 2016 Building Energy Efficiency Standards, www.energy.ca.gov/title24/2016standards/, accessed April 14, 2017.

(iii) California Green Building Standards (CALGreen Code)

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2017. Most mandatory measure changes in the 2016 CALGreen Code from the previous 2013 CALGreen Code 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 nonresidential 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 on 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.

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.

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.*

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 pursuant to AB 32.

(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

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.

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

(b) Southern California Association of Governments

SCAG recently adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016–2040 RTP/SCS) on April 7, 2016.⁵² 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;

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

⁵² SCAG, *Final 2016–2040 RTP/SCS.*

- Structure the plan on a three-tiered system of centers development;⁵³
- 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 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 states that 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 Areas⁵⁴ (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 2012 and 2040. 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

⁵³ 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.

⁵⁴ Defined by the 2016–2040 RTP/SCS as generally walkable transit villages or corridors that are within 0.5 mile of a well-served transit stop or a transit corridor with 15-minute or less service frequency during peak commute hours

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 2035.⁵⁵ 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 2040.⁵⁶ 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.

(4) Local

The City has taken proactive steps over the past several years to operate as a green and sustainable city. Several of the actions taken by the City include the following.⁵⁷

- Adoption of an Environmental Charter;
- Endorsement of the United Nations Green Cities Declaration and UEA;
- Endorsement of the U.S. Conference of Mayors Climate Protection Agreement;
- Adoption of a Green City Action Plan;
- Adoption of an ordinance creating the Environmental Advisory Commission;
- Adoption of a Green Building Program; and
- Adoption of a resolution in support of Green Cities California.

⁵⁵ SCAG, *Final 2016–2040, RTP/SCS, Executive Summary*, p. 8, April 2016.

⁵⁶ SCAG, *Final Program Environmental Impact Report for 2016–2040, RTP/SCS*, April 2016, Figure 3.8.4-1.

⁵⁷ Website www.cityofpasadena.net/greencity/.

The City is also in the process of preparing a Climate Action Plan. In 2013, the City completed an inventory of GHG emissions and sources, including a 2009 baseline inventory of GHG emissions from municipal operations and communitywide activities, and a “business-as-usual” forecast for the years 2020 and 2035 if the City does not implement any new actions to reduce emissions.⁵⁸

(a) City of Pasadena Green Building Standards

On December 12, 2016, the City Council approved Ordinance No. 7289, which amended Chapter 14 of the Pasadena Municipal Code (PMC) by amending certain provisions to reflect local administrative changes and incorporating by reference portions of the 2016 CALGreen Code. Projects filed on or after January 1, 2017, must comply with various provisions of the 2016 CALGreen Code. The City’s ordinance requires applicable projects to comply with specific provisions to reduce energy consumption.

(b) City of Pasadena Green City Action Plan

The City of Pasadena’s *Green City Action Plan: A Green & Sustainable Community* (2006) (Green City Action Plan) is a City-adopted plan to guide the City in becoming more sustainable. The Green City Action Plan identified a wide range of goals and implementation actions to conserve energy and water, reduce solid waste, address global warming, tailor urban design, protect natural habitats, improve transportation options, and reduce risks to human health. Specific policies that would reduce GHG emissions, either directly or indirectly are listed below. The status of each action (achieved, likely, or undetermined) was reported in the 2010 Green Report and is indicated in parentheses after the action number. “Achieved” means the goal has been met, “likely” means it should be reached by the target year, and “undetermined” means there is data, reports, or parameters to make a determination.

- Action 1 (achieved)—Increase the use of renewable energy to meet 10 percent of the city’s peak electric load within seven years.
- Action 2 (undetermined)—Reduce the city’s peak electric load by 10 percent within seven years through energy efficiency, shifting the timing of energy demands, and conservation methods. Future cost-effective energy efficiency programs include:

⁵⁸ *City of Pasadena, Climate Action Plan, www.cityofpasadena.net/climateactionplan/, accessed March 31, 2017.*

- Conducting a feasibility study for installing devices on municipal and private buildings that reduce the power required to operate equipment and for shifting the equipment usage to off-peak.
- Creating a “time of use” billing rate that offers lower rates for electric usage during off-peak hours than during peak hours. Other possible rates to consider include tiered energy rates.
- Action 3 (likely)—Reduce GHG emission by 25 percent by 2030, and include a system for accounting and auditing these emissions.
- Action 4 (likely)—Achieve zero waste to landfills and incinerators by 2040.
- Action 5 (likely)—Reduce the use of disposable, toxic, or non-renewable product category by at least 50 percent in seven years.
- Action 6 (achieved)—Implement “user-friendly” recycling and composting programs, with the goal of reducing by 25 percent per capita solid waste disposal to landfill and incineration in seven years.
- Action 8 (achieved)—Advance higher density, mixed use, walkable, bikeable and disabled accessible neighborhoods which coordinate land use and transportation with open space systems for recreation and ecological restoration.

(c) City of Pasadena General Plan

The City of Pasadena does not have a General Plan element specific to Global Warming and GHG emissions. However, policies from the Mobility Element of the Pasadena General Plan would serve to reduce GHG emissions.

In addition to the Mobility Element, the Land Use Element of the Pasadena General Plan includes a variety of policies that relate, either directly or indirectly, to GHG emissions. As with the Mobility Element, many of the Land Use Element Policies focus on reducing dependency on the automobile.

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.⁵⁹ 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 2012.⁶⁰ 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.F-3 on page IV.F-30. As shown in Table IV.F-3, 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, 2016.⁶¹

(2) Existing Project Site Emissions

The Project Site (i.e., both the Hillside Campus and South Campus) is currently developed with school uses. The Hillside Campus is an irregularly-shaped 155.95-acre site, approximately 75 percent of which is undeveloped. The developed area within the Hillside Campus consists of two large parking areas, known as the South Lot and North Lot, a guest parking lot, and four existing buildings, including the Ellwood Building, the South Building, the Sinclair Pavilion, and the Annex Building.

The South Campus consists of five rectangular parcels bisected by the Metro Gold Line and totaling 6.68 acres. The parcels along South Raymond Avenue are located west of the Metro Gold Line, and the parcel on the northwestern corner of South Arroyo Parkway and East Glenarm Street is located immediately to the east of the rail line. The parcels are described in Section II, Project Description, of this Draft EIR, as follows:

⁵⁹ CEC, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*, CEC-600-2006-013, October 2006.

⁶⁰ 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.

⁶¹ California Air Resources Board, *Aliso Canyon Natural Gas Leak—Preliminary Estimate of Greenhouse Gas Emissions*, February 13, 2016.

**Table IV.F-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
<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

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

	2006	2007	2008	2009	2010	2011	2012
<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.

^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 CO₂e—(based upon IPCC Second Assessment Report's Global Warming Potentials).

- The parcel located at 870 South Raymond Avenue is the northernmost parcel within the South Campus and is developed with a 35,772-square-foot, two-story building (870 Building) that varies in height up to 39 feet and supports academic uses, as well as 28 parking spaces.

- The parcel at 888 South Raymond Avenue is developed with an 11,775-square-foot, 16-foot-tall, one-story building (888 Building) used for shop space and parking, along with 150 parking spaces.
- The parcel located at 950 South Raymond Avenue is developed with a 95,034-square-foot building (950 Building) comprised of up to three stories and 64 feet in height and used for academic and administrative uses.
- The parcel located at 988 South Raymond Avenue at the northeastern corner of South Raymond Avenue and Glenarm Street is a parking lot with 148 parking spaces.
- The parcel located at 1111 South Arroyo Parkway at the northwestern corner of South Arroyo Parkway and East Glenarm Street, just north of the terminus of SR-110, is developed with a 131,209-square-foot, six-story building (1111 Building) that is up to approximately 96 feet in height and 410 parking spaces (on both the surface lot and subterranean level). The 1111 Building supports academic and administrative uses, as well as office space currently leased by third parties.

Area source emissions are generated by maintenance equipment, landscape equipment, and use of products that contain solvents. Energy source emissions are associated with building natural gas usage and electricity usage at the Project Site. In addition, mobile source emissions from the existing uses are generated by motor vehicle trips to and from the Project Site. Stationary source emissions are generated by the existing emergency generators on the Project Site. Furthermore, solid waste and water/wastewater emissions are generated by the Project's solid waste and water/waste water usage. Table IV.F-4 on page IV.F-33 presents the GHG emissions associated with the existing land uses.

**Table IV.F-4
Existing (2016) Project Site Annual GHG Emissions Summary**

Source	Metric Tons of Carbon Dioxide Equivalent^a (MTCO₂e per Year)
Area	<1
Energy	5,595
Mobile	5,278
Stationary	9
Solid Waste	195
Water/Wastewater Generation	232
Total Emissions	11,310
<p>^a CO₂e was calculated using CalEEMod and the results are provided in Section 2.0 of the Operation CalEEMod output file within Appendix C of this Draft EIR. Source: Eystone Environmental, 2017.</p>	

3. Environmental 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.

⁶² California Climate Action Registry, *General Reporting Protocol Version 3.1, January 2009*, www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009_FINAL.pdf.

⁶³ California Climate Action Registry *General Reporting Protocol, Version 3.1, January 2009*, www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf.

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

- Scope 1: Direct, on-site combustion of fossil fuels (e.g., natural gas, propane, gasoline, and diesel).
- Scope 2: Indirect, off-site 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.⁶⁴

The General Reporting Protocol provides a range of basic calculation 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 a lack of clarity as to whether a project’s GHG

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.*

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 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. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts 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 C of this Draft EIR. The calculations of the emissions generated during Project construction activities reflect the types and quantities of construction equipment that would be used to complete the proposed construction activities.

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

(2) Operation

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

⁶⁷ Website www.caleemod.com.

With regard to area source emissions, the emissions for landscaping equipment are based on the size of the land uses (e.g., square footage or dwelling unit), the GHG emission factors for fuel combustion, and the GWP values for the GHGs emitted.

Emissions of GHGs associated with electricity demand are based on the size of the land uses, the electrical demand factors for the land uses, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. As with electricity, the emissions of GHGs associated with natural gas combustion are based on the size of the land uses, the natural gas combustion factors for the land uses in units of million British thermal units (MMBtu), the GHG emission factors for natural gas combustion, and the GWP values for the GHGs emitted.

Mobile source emission calculations are based on a projection of annual VMT, which is derived from the Transportation Impact Analysis prepared for the Project.⁶⁸ These values account for the daily and seasonal variations in trip frequency and length associated with new student, employee, and visitor trips to and from the Project Site and other activities that generate a vehicle trip.

Stationary source emissions are based on proposed stationary sources (i.e., emergency generators) that would be provided on the Project Site.

The emissions of GHGs associated with solid waste disposal are based on the size of the land uses, the waste disposal rate for the land uses, the waste diversion rate, the GHG emission factors for solid waste decomposition, and the GWP values for the GHGs emitted.

The emissions related to water usage and wastewater generation are based on the size of the land uses; the water demand factors; the electrical intensity factors for water supply, treatment, and distribution and for wastewater treatment; the GHG emission factors for the electricity utility provider; and the GWP values for the GHGs emitted.

The emissions calculations for the Project include credits or reductions for consistency with applicable project design features set forth in this Draft EIR. The analysis of Project GHG emissions at buildout also takes into account actions and mandates expected to be in force in 2020 (e.g., Pavley I Standards, full implementation of California's Statewide Renewables Portfolio Standard beyond current levels of renewable energy, and the California LCFS). In addition, as mobile source GHG emissions are directly dependent

⁶⁸ Pasadena Department of Transportation, *Transportation Impact Analysis - CEQA Evaluation, February 9, 2017*.

on the number of vehicle trips, a decrease in the number of project-generated trips as a result of project features (e.g., close proximity to transit) would provide a proportional reduction in mobile source GHG emissions. Calculation of Project emissions conservatively did 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). Similarly, emissions reductions regarding cap-and-trade were not included in this analysis. By not speculating on potential regulatory conditions, the analysis takes a conservative approach that likely overestimates the Project's GHG emissions at buildout.

(3) Comparison to SCAQMD Screening Criterion

The SCAQMD does not currently have an adopted bright-line quantitative threshold to measure GHG impacts for mixed-use projects. As noted above, however, the SCAQMD identified (in its tiered approach) a screening criterion of 3,000 MTCO₂e per year for commercial/residential projects. If a land use project is below this screening criterion, then it is presumed to have a less-than-significant GHG impact. The screening criterion is not intended to be the sole determination of significance. Accordingly, the analysis below assessed the Project against this screening criterion and also analyzed whether the Project is consistent with applicable regulatory programs designed to reduce GHG. A quantitative comparison of Project emissions is evaluated below against the SCAQMD screening criterion.

(4) Consistency with Applicable Plans and Policies

A consistency analysis is provided below to describe the extent the Project complies with or exceeds performance-based standards included in the regulations outlined in the applicable portions of CARB's *Climate Change Scoping Plan*, SCAG's Regional Transportation Plan/Sustainable Communities Strategy, City's Green City Action Plan, and the City's General Plan Mobility Element policies.⁶⁹

b. Significance Thresholds

Based on Appendix G of the State CEQA Guidelines, the Project would have a significant impact if it would:

⁶⁹ *It should be noted that this section of the Draft EIR complied with California Supreme Court's recommendation in Ctr. for Biological Diversity v. Cal. Dept. of Fish & Wildlife (2015) 62 Cal.4th 204 (Newhall Ranch), and determined significance of GHG impacts by demonstrating the Project's compliance with applicable regulatory plans.*

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

In response to SB 97, Section 15064.4 of the CEQA Guidelines was added to assist lead agencies in determining the significance of the impacts of GHGs. Consistent with developing practice, this section urges lead agencies to quantify GHG emissions of projects where possible and includes language necessary to avoid an implication that a “life-cycle” analysis is required. In addition to quantification, Section 15064.4 recommends consideration of several other qualitative 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).

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

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

As indicated above, the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

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 SCAQMD 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 March 31, 2017.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found 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 problem within the geographic area of the project. To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency.⁷² 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."⁷³ Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with program and/or other regulatory schemes to reduce GHG emissions.⁷⁴

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)(3) 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 GHG 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 compares the Project's GHG emissions against the SCAQMD's draft screening threshold

⁷² 14 CCR § 15064(h)(3).

⁷³ 14 CCR § 15064(h)(3).

⁷⁴ 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)*.

and considers consistency with regulations or requirements adopted by the CARB's *Climate Change Scoping Plan*, and City of Pasadena's Green City Action Plan.

c. Project Design Features

The following project design features are proposed with regard to GHG emissions:

Project Design Feature F-1: The Project will not include the installation of fireplaces within the student housing.

Project Design Feature F-2: The Project will install photovoltaic solar cells and canopies over the existing surface parking stalls in the Hillside Campus and on the roof of the 988 Building.

In addition to the specific project design features provided above, the Project also includes other GHG emission reduction measures (e.g., internal vehicular trip capture and increased non-auto modes) that would also reduce GHG emissions. These project characteristics and GHG emission reductions are discussed further below.

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, excavation, 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;
- Stationary source: emissions associated with stationary equipment (e.g., emergency generators);
- Mobile source: emissions associated with vehicles accessing the project site;
- Solid Waste generation: emissions associated with the decomposition of the waste, which generates methane based on the total amount of degradable organic carbon; and
- Water/Wastewater generation: 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. However, it should be noted that even a very large individual project would not generate enough GHG emissions on its own to significantly influence global climate change. A specific discussion regarding potential GHG emissions associated with the construction and operational phases of the Project is provided below.

(1) Construction Emissions

Construction of the Project would be conducted in two phases. Construction of Phase I is estimated to occur over approximately 24 to 36 months within a four-year period and may be completed as early as 2022. Construction of Phase II is estimated to extend ten years through 2032. The analysis presented below is conservative as it assumes Phase II of construction would be completed in 2024. An earlier completion date generates more emissions as advancements in technology would not be realized. Details of the modeling assumptions and emission factors are provided in Appendix C of this Draft EIR. The calculations of the emissions generated during Project construction activities reflect the number of haul/delivery truck trips, employee trips, and types and quantities of construction equipment that would be used to remove the existing asphalt, excavate for the subterranean parking structures, construct the proposed buildings, and plant new landscaping, within the Project Site.

As presented in Table IV.F-5 on page IV.F-42, construction of the Project is estimated to generate a total of 5,192 MTCO₂e over the course of Project buildout. As recommended by the SCAQMD, the total GHG construction emissions were amortized over a 30-year Project lifetime (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.⁷⁵ Based on this methodology, amortized construction GHG emissions would be 173 MTCO₂e per year. A complete listing of the construction equipment by on- and off-site activities, duration, and emissions estimation model input assumptions used in this analysis is included within the emissions calculation worksheets that are provided in Appendix C of this Draft EIR.

(2) Operational Emissions

(a) Area Source Emissions

Area source emissions were calculated using the CalEEMod emissions inventory model, which includes fireplaces and landscape maintenance equipment. As discussed

⁷⁵ SCAQMD Governing Board Agenda Item 31, December 5, 2008.

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

	MTCO₂e
2019	1,203
2020	602
2021	580
2022	1,589
2023	627
2024	592
Total	5,192
Amortized Over 30 Years	173
<hr/> <i>Source: Eyestone Environmental, 2017.</i>	

above (see Project Design Feature F-1), the proposed student housing would not include fireplaces. Therefore, the reduction in GHG emissions from the omission of fireplaces was factored into the calculation of area source emissions shown in Table IV.F-6 on page IV.F-43. As shown in Table IV.F-6, the Project, at full buildout, is expected to result in a total of 7 MTCO₂e per year from area sources.

(b) Energy Source 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 PWP 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 the operation of appliances that use electricity. CalEEMod calculates energy use from systems covered by Title 24 (e.g., heating,

Table IV.F-6
Annual GHG Emissions Summary (Year 2032)^a
(metric tons of carbon dioxide equivalent [MTCO₂e])

Scope	Baseline	Project	Net (Project – Baseline)
Area	<0	7	7
Energy	3,259	2,822 ^b	(437)
Mobile	3,711	6,472	2,761
Stationary	9	9	0
Solid Waste	195	205	9
Water/Wastewater	129	179	50
Construction	—	173	173
Total Emission	7,303	9,866	2,563

^a CO₂e was calculated using CalEEMod and the results are provided in Section 2.0 of the Operation CalEEMod output file within Appendix C of this Draft EIR.

^b The Project results lower in GHG emissions generated by the energy usage in comparison to the baseline GHG emission as the new buildings proposed on the Project Site would use more efficient lighting and meet Title 24 2016 standards.

Source: Eyestone Environmental, 2017.

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 (e.g., computer), 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.⁷⁶ The data are specific to climate zones; therefore, Zone 11 was selected for the Project Site based on the ZIP Code tool.⁷⁷ 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. New building construction subject to 2016 Title 24 standards are anticipated to be 28 percent more efficient (for electricity) than residential construction built to the 2013 Title 24 standards and 5 percent more efficient (for electricity) for non-residential construction.⁷⁸

⁷⁶ CEC, *Commercial End-Use Survey, March 2006, and California Residential Appliance Saturation Survey, October 2010.*

⁷⁷ CAPCOA, *CalEEMod, User Guide, Appendix F, Climate Zones Lookup, 2013.*

⁷⁸ CEC, *Adoption Hearing, 2016 Building Energy Efficiency Standards.*

Furthermore, under Project Design Feature F-2, the Project will install photovoltaic solar cells and canopies over the existing surface parking stalls in the Hillside Campus. However, electricity GHG emissions reductions from this project design feature were conservatively not included in the electricity analysis since the exact square footage or kW is not available.

As shown in Table IV.F-6 on page IV.F-43, Project GHG emissions, at full buildout, from electricity and natural gas consumption would result in 2,822 MTCO₂e per year.

(c) Mobile Source Emissions

Mobile source operational emissions were calculated based on the Project trip-generation estimates provided for the Project by the Pasadena Department of Transportation.⁷⁹ As discussed in Section IV.L, Traffic, of this Draft EIR, to calculate daily trips, the daily trip rate for ArtCenter uses on the Project Site (i.e., both the Hillside Campus and South Campus) were derived by comparing the average of the Institute of Transportation Engineers' (ITE) *Trip Generation, 9th Edition* weekday A.M. and P.M. peak-hour trips with the ITE daily trip rate for land use code 550 (University/College). Furthermore, the number of student housing units, the number of theater seats, and the amount of building area for the office, retail, and high-turnover restaurant uses on the Project Site were multiplied by the applicable trip-generation rates based on ITE's *Trip Generation, 9th Edition*.

As shown in Table IV.F-6, the Project, at full buildout, is forecasted to result in a total of 6,472 MTCO₂e per year from mobile sources. The trip-reduction measures include internal capture credit and non-auto modes credit. As further discussed in Section IV.L, Traffic, of this Draft EIR, these trip-reduction credits are based on the Project land uses and the location of the Project Site. Specifically, the Metro Gold Line bisects the South Campus with the Fillmore Street Station located 300 feet north of the South Campus. In addition, the Project area is currently served by Pasadena Transit, Metro, and ArtCenter shuttles, which would continue to run between the Hillside Campus and the South Campus, as detailed in Section IV.L, Traffic, of the Draft EIR. Furthermore, the Project would provide short- and long-term bicycle parking spaces, in addition to bicycle-serving amenities, that would further encourage biking. Additionally, the Project design would increase pedestrian accessibility, which would further encourage walkability.

⁷⁹ Pasadena Department of Transportation, *Transportation Impact Analysis - CEQA Evaluation, February 9, 2017*. See Appendix C of this Draft EIR.

(d) Stationary Source Emissions

Emissions related to stationary sources were calculated using the CalEEMod emissions inventory model. It is anticipated the Project would continue to operate four emergency generators, with two on the South Campus and two on the Hillside Campus. As shown in Table IV.F-6 on page IV.F-43, the Project, at full buildout, is forecasted to result in a total of 9 MTCO₂e per year from stationary sources.

(e) 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 the Project 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 , the Project, at full buildout, is forecasted to result in 205 MTCO₂e from solid waste generation. Please refer to Section IV.M.3, Utilities and Service Systems—Solid Waste, of this Draft EIR for additional details on the Project's potential impacts with regard to solid waste generation.

(f) Water Usage and Wastewater Generation Emissions

GHG emissions are related to the energy used to handle 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. Subsequently, energy is used as the wastewater is treated and reused as reclaimed water.

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 factor⁸⁰ to determine the embodied energy necessary to supply potable water. 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 (which includes water delivered by PWP) and GHG intensity factors for PWP were selected in CalEEMod. Please refer to Section IV.M.1, Utilities and Service Systems—Water Supply, and Section IV.M.2, Utilities and Service Systems—Wastewater, of this Draft EIR for additional details on the Project's potential impacts to water supply and wastewater service. The Project would also comply with specific mandatory requirements of CALGreen Code, which

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

requires a 20-percent minimum reduction in water usage and wastewater generation was applied to the Project.

As shown in Table IV.F-6 on page IV.F-43, the Project, at full buildout, is forecasted to result in 179 MTCO₂e per year from water usage and wastewater generation.

(3) Combined Construction and Operational Emissions

The GHG emissions for the Project shown in Table IV.F-6 take into consideration implementation of Project Design Feature F-1, the requirements set forth in the City of Pasadena Building Code, and full implementation of current State mandates. The GHG emissions for the Project in 2032 would equal 173 MTCO₂e per year during construction and 9,693 MTCO₂e per year during operation of the Project with a combined total of 9,866 MTCO₂e per year. When taking into consideration the existing baseline emissions, the net Project emissions would be 2,563 MTCO₂e per year.

e. Analysis of Project Impacts

Impact F-1: The Project would not result in an exceedance of the SCAQMD screening criteria of 3,000 MTCO₂e per year and the Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

(1) SCAQMD Screening Criteria Analysis

As noted above, the SCAQMD identified a screening criterion of 3,000 MTCO₂e per year for commercial/residential projects to determine whether a land use project could presumptively have less-than-significant GHG impacts if it produced less GHG emissions than the screening criteria. As shown in Table IV.F-6, the Project would result in 9,866 MTCO₂e per year for combined construction and operational GHG emissions. When the existing emissions associated with the current operation of ArtCenter of 7,303 MTCO₂e per year are taken into account, as shown in Table IV.F-6, the resulting net Project emissions would be 2,563 MTCO₂e per year. Therefore, the Project would produce less GHG emissions (i.e., 3,000 MTCO₂e per year screening criterion compared to 2,563 MTCO₂e per year net total Project GHG emissions) than the draft SCAQMD screening criterion, and impacts would be less than significant. An analysis of the Project's consistency with applicable plans and policies is also provided below.

Impact F-2: The Project would not conflict with CARB’s *Climate Change Scoping Plan*, the SCAG’s 2016–2040 RTP/SCS, or the City’s Green City Action Plan.

(2) Consistency with Applicable Plans and Policies

Compliance with a GHG emissions reduction plan would result in 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 outlined in CARB’s *Climate Change Scoping Plan*, SCAG’s 2016–2040 RTP/SCS, City’s Green City Action Plan, and City’s General Plan Mobility Element policies. As shown below, 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 the Legislature in the 2006 Global Warming Solutions Act (Assembly Bill 32). 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.

As shown in Table IV.F-6 on page IV.F-43, the Project would result in a net total of 2,563 MTCO₂e annually. The breakdown of emissions by source category shows approximately less than 1 percent from area sources; 29 percent from energy consumption; 66 percent from mobile sources; less than 1 percent from stationary sources; 2 percent from solid waste generation; 2 percent from water supply, treatment, and distribution; and 2 percent from construction activities. Provided in Table IV.F-7 on page IV.F-48 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

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

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

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

**Table IV.F-7
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. Project Design Feature F-1 prohibits the installation of fireplaces within the student housing.
Energy (29 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.	PWP	Consistent. PWP’s commitment to achieve 40 percent renewables by 2020 would exceed the requirement under the RPS program of 33 percent renewables by 2020. In 2016, PWP indicated that 29 percent of its electricity came from renewable resources in Year 2015. ^a As PWP would provide electricity service to the Project Site, the Project would use electricity that is produced consistent with this performance based standard. Electricity GHG emissions provided in Table IV.F-6 on page IV.F-43 assume that PWP would receive at least 50 percent of their electricity from renewable sources by the year 2030, as required below by SB 350.
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 PWP	Consistent. PWP would be required to generate electricity that would increase renewable energy resources to 50 percent by 2030. As PWP would provide electricity service to the Project Site, the Project by 2030 would use electricity consistent with the requirements of SB 350. Project buildout would occur in Year 2032, and, therefore, the estimated GHG emissions from electricity usage provided above include implementation of SB 350 with a compliance date of 2030. As required 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 24 CCR Part 6 (consistency with this regulation is discussed below) and utility-sponsored programs, such as rebates for high-efficiency appliances, heating, ventilation, and air-conditioning (HVAC) systems and insulation. The Project would further support this action/strategy as it would comply

**Table IV.F-7 (Continued)
Consistency Analysis—Climate Change Scoping Plan**

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
		with specific requirements of the Pasadena Green Building Standards. The City’s Green Building Standards requires applicable projects to comply with specific provisions to reduce energy consumption. Furthermore, under Project Design Feature F-2, the Project would install PV cells and canopies over the existing North Lot and South Lot at the Hillside Campus and on the roof of the 988 Building. However, electricity GHG emissions reductions from this project design feature were not included in the electricity analysis.
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.	State, CEC, and PWP	Consistent. PWP meets the requirements of SB 1368. As PWP would provide electricity service to the Project Site, the Project would use electricity that meets the requirements under SB 1368.
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.	State and CEC	Consistent. The Appliance Efficiency Regulations apply 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, the Section IV.M.4 Utilities and Service Systems–Energy, of the Draft EIR, demonstrates that the Project efficiently uses energy and does not result in wasteful energy use.
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. The California Green Building Standards Code (Part 11,	State and CEC	Consistent. Consistent with regulatory requirements, the Project would be required to comply with applicable provisions of the 2016 Pasadena Green Building Standards that in turn requires compliance with mandatory standards included in the California Green Building Standards. Projects subject to 2016 Title 24 standards are 28 percent more efficient (for electricity) than residential construction built to the 2013 Title 24 standards and 5 percent more efficient (for electricity) for non-residential construction. ^c The standards offer builders better windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses. Thus, since the

**Table IV.F-7 (Continued)
Consistency Analysis—Climate Change Scoping Plan**

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
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.		Project is subject to 2016 Title 24 standards, 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.
Energy Independence and Security Act of 2007 (EISA): EISA requires manufacturing for sale within the United States to phase out incandescent light bulbs 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.	Federal/ Manufacturers	Consistent. In compliance with EISA, the proposed improvements under the Project would not use incandescent light bulbs and, thus, reduce energy usage associated with lighting. Electricity GHG emissions provided in Table IV.F-6 on page IV.F-43 accounts 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 or selling general purpose lights that contain certain levels of hazardous substances in the state and requires the establishment of minimum energy efficiency standards for all general service incandescent lamps. 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 <i>Climate Change Scoping Plan</i> , 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 electricity usage by projects under CEQA are covered by the Cap-and-Trade Program. Therefore, GHG emissions associated with the Project's 26,473 megawatts of electricity usage per year presented in

Table IV.F-7 (Continued)
Consistency Analysis—Climate Change Scoping Plan

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
		Table IV.F-6 on page IV.F-43 would be covered by the Cap-and-Trade Program and would be consistent with AB 32 and the <i>Climate Change Scoping Plan</i> .
Mobile (66 percent of project inventory)		
<p>Assembly Bill 1493 (AB 1493) “Pavley 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. 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).</p>	State, CARB	<p>Consistent. The Pavley regulations 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 be reduced from implementation of this regulation because vehicle trips associated with the Project would be affected by AB 1493. Mobile 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.F-6 on page IV.F-43 were calculated using CalEEMod, which incorporates implementation of AB 1493 into mobile source emission factors.</p>
<p>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}</p>	State, CARB	<p>Consistent. GHG emissions related to vehicular travel by the Project would be reduced from implementation of this regulation because fuel used by Project-related vehicles would be compliant with LCFS. Mobile source GHG emissions provided in Table IV.F-6 on page IV.F-43 were calculated using CalEEMod which incorporates implementation of the LCFS into mobile source emission factors.</p>
<p>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</p>	State, CARB	<p>Consistent. Standards under the Advanced Clean Cars Program apply to all passenger and light duty trucks used by students, visitors, employees, and deliveries to the Project. GHG emissions related to vehicular travel by the Project would be reduced from implementation of 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</p>

**Table IV.F-7 (Continued)
Consistency Analysis—Climate Change Scoping Plan**

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.		AB 32. Mobile source GHG emissions provided in Table IV.F-6 on page IV.F-43, 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 (SB) 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 that the region will meet a target, created by CARB, for reducing GHG emissions.	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 college, student housing, theater, office, retail, and high-turnover restaurant uses within a HQT. Therefore, the Project would be consistent with SCAG’s 2016–2040 RTP/SCS as it is located within a HQT. Furthermore, the 2016–2040 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 33-percent (see Appendix C of this Draft EIR), the Project would be consistent with SB 375 and the 2016–2040 RTP/SCS.
Solid Waste (Two percent of project inventory)		
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 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	State	Consistent. GHG emissions related to solid waste generation from the Project would be reduced from implementation of this regulation as it would reduce the overall amount of solid waste disposed of at landfills. The reduction in solid waste would then, in return, reduce the amount of methane released from the decomposing solid waste. Project-related GHG emissions from solid waste generation provided in Table IV.F-6 on page IV.F-43 includes a 50-percent reduction in solid waste generation source emissions per goals of the California Integrated Waste Management Act. ArtCenter would be required to only contract for waste disposal services with a company that recycles solid waste in compliance with AB 341. In addition, the Project would provide recycling bins at appropriate locations to promote recycling of paper, metal, glass and other recyclable material.

Table IV.F-7 (Continued)
Consistency Analysis—Climate Change Scoping Plan

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020, and annually thereafter. ⁿ		
Water (Two percent of project inventory)		
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.	State	Consistent. The Project would be required to comply with applicable provisions of the 2016 Pasadena Green Building Standards, which, in turn, requires compliance with mandatory standards included in the California Green Building Standards (20-percent overall water use reduction). Project-related GHG emissions from water-related sources provided in Table IV.F-6 on page IV.F-43 reflects consistency with this requirement.
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 is 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 convey, treat, and distribute the water; it also reduces emissions from wastewater treatment.	State	Consistent. As discussed above under Title 24, the Project would comply with applicable provisions of the 2016 Pasadena Green Building Standards, which, in turn, requires compliance with mandatory standards included in the California Green Building Standards (20-percent overall water use reduction). Accordingly, the Project would also be consistent with the GHG reductions sought by SB X7-7 related to water conservation and related GHG emissions.
Construction (Two percent of project inventory)		
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.	CARB	Consistent. ArtCenter would use construction contractors that would comply with this regulation.

**Table IV.F-7 (Continued)
Consistency Analysis—Climate Change Scoping Plan**

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
<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.ⁱ</p>	<p>CARB</p>	<p>Consistent. ArtCenter would use construction contractors that would comply with this regulation.</p>
<p>^a California Energy Commission, <i>Utility Annual Power Content Labels for 2015</i>, http://www.energy.ca.gov/pcl/labels/.</p> <p>^b Senate Bill 350 (2015–2016 Reg. Session) Stats 2015, Ch. 547.</p> <p>^c CEC, <i>Adoption Hearing, 2016 Building Energy Efficiency Standards</i>.</p> <p>^d 2007b. Assembly Bill 1109 (2007–2008 Reg. Session) Stats. 2007, Ch. 534.</p> <p>^e CARB, <i>Initial Statement of Reason for Proposed Regulation for The Management of High Global Warming Potential Refrigerant for Stationary Sources</i>, 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 Cal. Pub. Res. Code § 41780(a).</p> <p>^h Cal. Pub. Res. Code § 41780.01(a).</p> <p>ⁱ CARB, <i>Truck and Bus Regulation—On-Road Heavy Duty Diesel Vehicles (In-Use) Regulation</i>, www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm, page last reviewed November 15, 2016.</p> <p>Source: Eyestone Environmental, 2017.</p>		

(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 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 Appendix C of this Draft EIR, the Project results in a VMT reduction of approximately 33 percent in comparison to a standard project⁸⁶ as estimated by CalEEMod and 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. This reduction is attributable to the Project characteristics of being an infill project, which includes on-campus housing and supportive uses, near transit that supports multi-modal transportation options.

The Project would also 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:

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*.

⁸⁶ *A standard project is defined as a generic project with the same overall land uses as the project based on standard Institute of Transportation Engineers trip-generation rates and without incorporation of project-specific characteristics (e.g., proximity to transit and internal trip capture).*

- Compact growth in areas accessible to transit;
- Jobs and housing closer to transit;
- New housing and job growth focused in HQTAs; and
- Biking and walking infrastructure to improve active transportation options and transit access.

While the Project is not a traditional mixed-use development, which is typically encouraged by the 2016–2040 RTP/SCS, the Project includes a mix of uses and would be consistent with the GHG reduction strategies discussed above. The Project represents an infill development within the City of Pasadena that would concentrate new college uses, which include theater, office, retail, and high-turnover restaurant uses for use by faculty and students who would live both off-campus and on-campus in the proposed student housing, 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-served transit stop or a transit corridor with 15-minute or less service frequency during peak commute hours. Faculty and new students would be able to utilize the various transit options in proximity to the Project. The Metro Gold Line bisects the South Campus with the Fillmore Street Station located 300 feet north of the South Campus. In addition, the Project area is currently served by Pasadena Transit, Metro, and ArtCenter shuttles, which would continue to run between the Hillside Campus and the South Campus. Furthermore, the Project would provide short- and long-term bicycle parking spaces, in addition to bicycle-serving amenities, that would further encourage biking. Additionally, the Project design would increase pedestrian accessibility, which would further encourage walkability. Specifically, the South Campus would include a Cycleway, which would be established to create a campus circulation spine for pedestrians, cyclists, and electric carts. The Project would promote a reduction in VMT, as well, with the developed of on-campus student housing, which would reduce the number of students commuting to and from the Project Site. 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 Regional Transportation Plan/Sustainable Communities Strategy, if they are compatible with the general intent of the plans and would not preclude the attainment of their primary goals.

Table IV.F-8 on page IV.F-58 demonstrates the Project's consistency with the Actions and Strategies set forth in the 2016–2040 RTP/SCS.⁸⁷

In sum, while the Project is not a traditional mixed-use development, which is typically encouraged by the 2016–2040 RTP/SCS, the Project's characteristics promote a reduction in VMT and would be consistent with GHG reduction strategies found in the 2016–2040 RTP/SCS, which would further achieve regional GHG reductions from the land use and transportation sectors, as required by SB 375, which, in turn, advances the State's long-term climate policies.⁸⁸ By furthering implementation of SB 375, the Project supports regional land use and transportation GHG reductions consistent with State regulatory requirements.

Therefore, the Project would be consistent with the GHG reduction-related actions and strategies contained in the 2016–2040 RTP/SCS.

(c) City of Pasadena Green City Action Plan

The Project would be consistent with the City of Pasadena's *Green City Action Plan: A Green & Sustainable Community* (Green City Action Plan).⁸⁹ As discussed above, under Section 2.c.(4)b., the Green City Action Plan is a City-adopted plan to guide the City in becoming more sustainable. The Green City Action Plan identified a wide range of goals and implementation actions to conserve energy and water, reduce solid waste, address global warming, tailor urban design, protect natural habitats, improve transportation options, and reduce risks to human health. Table IV.F-9 on page IV.F-68 provides a discussion of the Project's consistency with applicable GHG-reducing actions from the Green City Action Plan. The City adopted the Pasadena Green Building Standards (Chapter 14 of the Pasadena Municipal Code, as amended pursuant to Ordinance No. 7289), which incorporated by reference the mandatory requirements of the 2016 California Green Building Standards Code (discussed above under *Climate Change Scoping Plan*). The Project would comply with performance-based standards included in the Green Building Code (e.g., 2016 Building Energy Efficiency Standards).

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.

⁸⁹ *City of Pasadena, Green City Action Plan: A Green & Sustainable Community, 2006.*

**Table IV.F-8
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. Furthermore, the Project would support this measure by providing on-campus housing and thereby opening up needed housing within the community. The Project would also provide employment opportunities, supportive uses, and amenities that may be available to the community.
Collaborate with local jurisdictions and agencies to acquire a regional fair share housing allocation that reflects existing and future needs.	SCAG Local Jurisdictions HCD	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG, local jurisdiction, and HCD. The Project would not impair SCAG from collaborating with local jurisdictions and agencies to acquire regional fair share housing allocation. While not applicable, the Project would accommodate regional growth projected by SCAG by providing on-campus housing 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.
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. The use of alternative-fueled vehicles by the Project's future students, from the on-campus housing, is market driven and beyond the direct control or influence of ArtCenter. The Project would not impair any jurisdiction's ability to encourage the use of alternative-fueled vehicles and would provide electric recharge stations as required by Section 17.46.310 of the Zoning Code and the Pasadena Green Building Standards.
Continue to support, through Compass Blueprint, planning for new mobility modes such as range-limited Neighborhood Electric Vehicles (NEVs) and other alternative fueled vehicles.	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, as noted above, the Project would not impair any jurisdiction's ability to encourage the use of alternatively-fueled vehicles and would provide electric recharge stations as required by Section 17.46.310 of the Zoning Code and the Pasadena

**Table IV.F-8 (Continued)
Consistency Analysis—RTP/SCS**

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
<p>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.</p>	<p>SCAG State Local Jurisdictions</p>	<p>Green Building Standards.</p> <p>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 short- and long-term bicycle parking spaces for students, employees, and visitors, in addition to bicycle-serving amenities that would further encourage biking. The Project would also incorporate measures to reduce air emissions and GHGs, minimize hazards, and ensure water quality (see Section IV.B, Air Quality; Section IV.G, Hazards and Hazardous Materials, and Section IV.H, Hydrology, Water Quality, and Groundwater). Furthermore, the Project design would increase pedestrian accessibility, which would further encourage walkability. In particular, the Main Quad on the South Campus would include pedestrian paths, planted areas, seating areas, dining areas, and assembly areas, which could be used to host movie nights and “Concerts in the Park.” The Main Quad would also include a Cycleway, which would create a campus circulation spine for pedestrians, cyclists, and electric carts. Furthermore, the South Campus would also include the North Quad, which would provide a diversity of outdoor spaces for social interaction and relaxation. Amenities would include study tables, fitness areas, community gardens, dining terraces, lounging decks, and table games. A portion of the North Quad would be accessible to the community and may evolve into an outdoor sculpture garden or a community garden, with informal spaces for students to make and display their artistic projects.</p>
<p>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.</p>	<p>Local Jurisdictions SCAG</p>	<p>Consistent. As previously discussed, the Project would encourage healthy lifestyles through the provision of short- and long-term bicycle parking spaces, in addition to bicycle-serving amenities that would further encourage biking. In addition, the Project design would increase pedestrian accessibility, which would further encourage walkability. In particular, the Main Quad on the South Campus would include pedestrian paths, planted areas, seating areas, dining areas, and assembly areas, which could be used to host movie nights and “Concerts in the Park.” The Main Quad would also include a Cycleway, which would create a campus circulation spine for</p>

Table IV.F-8 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
		pedestrians, cyclists, and electric carts. Furthermore, the South Campus would also include the North Quad, which would provide a diversity of outdoor spaces for social interaction and relaxation. Amenities would include study tables, fitness areas, community gardens, dining terraces, lounging decks, and table games. A portion of the North Quad would be accessible to the community and may evolve into an outdoor sculpture garden or a community garden, with informal spaces for students to make and display their artistic projects.
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 encourage a complete community by developing new college, student housing, theater, office, retail, and high-turnover restaurant uses within the City of Pasadena in proximity to residential, commercial, and neighborhood services.
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. The Project would not impair the City's, or CTC's ability to pursue joint development opportunities. The Project would accommodate regional growth projected by SCAG 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.
Consider developing healthy community or active design guidelines that promote physical activity and improved health.	Local Jurisdictions	Not Applicable. While this action/strategy is not directly applicable, the Project, as discussed above, would encourage healthy lifestyles through the provision of short- and long-term bicycle parking spaces, in addition to bicycle-serving amenities, that would further encourage biking. In addition, the Project design would increase pedestrian accessibility, which would further encourage walkability. In particular, the Main Quad on the South Campus would include pedestrian paths, planted areas, seating areas, dining areas, and assembly areas, which could be used to host movie nights and "Concerts in the Park." The Main Quad would also include a Cycleway, which would create a campus circulation spine for pedestrians, cyclists, and electric carts. Furthermore, the South Campus would also include the North Quad, which would provide a diversity of outdoor spaces for

Table IV.F-8 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
		social interaction and relaxation. Amenities would include study tables, fitness areas, community gardens, dining terraces, lounging decks, and table games. A portion of the North Quad would be accessible to the community and may evolve into an outdoor sculpture garden or a community garden, with informal spaces for students to make and display their artistic projects.
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 development. Furthermore, while the Hillside Campus would be developed in an area where natural habitats and other biological resources are found, the Project would implement mitigation measures which would reduce the Project's impact to these resources 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. 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. 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 Main Quad on the South Campus would include pedestrian paths, planted areas, seating areas, dining areas, and assembly areas, which could be used to host movie nights and “Concerts in the Park.” The Main Quad would also include a Cycleway, which would create a campus circulation spine for pedestrians, cyclists, and electric carts. Furthermore, the South Campus would also include the North Quad, which would provide a diversity of outdoor spaces for social interaction and relaxation. Amenities would include study tables, fitness areas, community gardens, dining terraces, lounging decks, and table games. A portion of the North Quad would be accessible to the community and

Table IV.F-8 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
		may evolve into an outdoor sculpture garden or a community garden, with informal spaces for students to make and display their artistic projects.
Transportation Network Actions and Strategies		
Perform and support studies with the goal of identifying innovative transportation strategies that enhance mobility and air quality, and determine practical steps to pursue such strategies, while engaging local communities in planning efforts.	SCAG CTCs	Not Applicable. The responsible parties identified in the 2016–2040 RTP/SCS for implementation of this action/strategy are SCAG and CTCs. The Project would not impair the ability of SCAG and CTCs to perform and support various studies to identify innovative transportation strategies. Furthermore, by combining college, student housing, theater, office, retail, and high-turnover restaurant uses on-site, the Project would serve to reduce vehicle trips and, thus, VMT, thereby contributing to a reduction in air pollutant emissions.
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. Moreover, the Project would be required to comply with the City’s Transit Demand Management (TDM) Ordinance, which would encourage transit use. Furthermore, the Project would continue to run ArtCenter shuttles between the Hillside Campus and the South Campus.
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. 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. In addition, the Project would benefit from this action/strategy as the Project is located within a TOD/HQTA. Furthermore, the Project would continue to run ArtCenter shuttles between the Hillside Campus and the South Campus.
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 safety.	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. Moreover, as discussed above, the South Campus would include a Cycleway, which would create a campus circulation spine for pedestrians, cyclists, and electric carts. The Project would include bicycle safety design, pedestrian safety design, and ADA design, in support of this action/strategy.

**Table IV.F-8 (Continued)
Consistency Analysis—RTP/SCS**

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
<p>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.</p>	<p>SCAG CTCs Local Jurisdictions</p>	<p>Consistent. As discussed above, the Project is an infill development, consisting of college, student housing, theater, office, retail, and high-turnover restaurant uses and in proximity to residential, commercial, and neighborhood services. The Project includes student housing to serve the needs of the Project’s proposed college uses. Furthermore, in support of this action/strategy, the Project would provide a variety of open space and recreational amenities. In particular, the Main Quad on the South Campus would include pedestrian paths, planted areas, seating areas, dining areas, and assembly areas, which could be used to host movie nights and “Concerts in the Park.” The Main Quad would also include a Cycleway, which would create a campus circulation spine for pedestrians, cyclists, and electric carts. Furthermore, the South Campus would also include the North Quad, which would provide a diversity of outdoor spaces for social interaction and relaxation. Amenities would include study tables, fitness areas, community gardens, dining terraces, lounging decks, and table games. A portion of the North Quad would be accessible to the community and may evolve into an outdoor sculpture garden or a community garden, with informal spaces for students to make and display their artistic projects.</p>
<p>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.</p>	<p>SCAG CTCs Local Jurisdictions</p>	<p>Consistent. The Project is a bicycle-friendly development and would provide a distribution of various uses throughout the Project Site that would encourage students and employees to walk to the various complementary uses on-site. The design of the Project would enhance the urban appeal and walkability of the Project vicinity. In particular, the Main Quad on the South Campus would include pedestrian paths, planted areas, seating areas, dining areas, and assembly areas, which could be used to host movie nights and “Concerts in the Park.” The Main Quad would also include a Cycleway, which would create a campus circulation spine for pedestrians, cyclists, and electric carts. Furthermore, the South Campus would also include the North Quad, which would provide a diversity of outdoor spaces for social interaction and relaxation. Amenities would include study tables, fitness areas, community gardens, dining terraces, lounging decks, and table games. A portion of the North Quad would be accessible to the community and may evolve into an outdoor sculpture garden or a community garden, with informal spaces for students to make and</p>

Table IV.F-8 (Continued)
Consistency Analysis—RTP/SCS

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
		display their artistic projects. The Project Site is also located in a HQTAs as designated by the 2016–2040 RTP/SCS. The Project would also provide bicycle parking spaces in accordance with the City’s requirements for Project students, employees, and visitors. By combining these uses, the Project would serve to reduce vehicle trips and, thus, VMT, thereby contributing to a reduction in air pollutant and GHG emissions. Moreover, the Project is well-served by transit and would be required to comply with the City’s TDM Ordinance, by implementing a TDM program plan that would encourage transit use.
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	Not Applicable. While this action/strategy is not directly applicable to the Project, the Project’s student housing would be located within walking distance of existing and proposed college, theater, office, retail, and high-turnover restaurant uses, thus reducing the number of vehicle trips. The Project Site is also located in a HQTAs as designated by the 2016–2040 RTP/SCS. Moreover, the Project is well-served by transit and would be required to comply with the City’s TDM Ordinance, by implementing a TDM program plan that would encourage transit use.
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	Not Applicable. The Project would not impair the ability of SCAG, the CTCs, or the City to provide such a network of local community circulators that serve new TOD, HQTAs, and neighborhood commercial centers. Moreover, as discussed above, the Project’s student housing would be located within walking distance of existing and proposed college, theater, office, retail, and high-turnover restaurant uses and local and regional transit, including Pasadena Transit, Metro, and ArtCenter shuttles, which would continue to run between the Hillside Campus and the South Campus.
Similar to SCAG’s partnership with 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.	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 SCAG’s or the CTCs’ 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	Not Applicable. The Project would not impair the CTCs’ or the City’s ability to develop first-mile/last-mile strategies. In support of this action/strategy, the Project’s student housing would be located within proximity to transit, which is served by Pasadena Transit, Metro, and ArtCenter shuttles, which would continue to run between the Hillside Campus and the South Campus. Moreover, the Project would be

**Table IV.F-8 (Continued)
Consistency Analysis—RTP/SCS**

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
		required to comply with the City’s TDM Ordinance, by implementing a TDM program plan that would encourage transit use. The Project would provide electric recharge stations as required by Section 17.46.310 of the Zoning Code and the Pasadena Green Building Standards.
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 students, employees, and visitors. Moreover, the Project would be required to comply with the City’s TDM Ordinance, by implementing a TDM program, which may include, but not be limited to, the following strategies: bikeway linkages to established routes, transit pass and vanpool fare subsidies, and reduced-parking fees for non-solo drivers, among others. Furthermore, the Project would continue to run ArtCenter shuttles between the Hillside Campus and the South Campus.
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, in support of this action/strategy, the Project includes a TDM program plan that includes promotion and support of transit and rideshare. As shown in Appendix C of this Draft EIR, the Project’s GHG emissions from mobile sources would represent a reduction of approximately 33 percent in comparison to a standard project with similar land use characteristics within the Air Basin.
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 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.	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. In particular, the Main Quad on the South Campus would include pedestrian paths, planted areas, seating areas, dining areas, and assembly areas, which could be used to host movie nights and “Concerts in the Park.” The Main Quad would also include a Cycleway, which would create a campus circulation spine for pedestrians, cyclists, and electric carts. Furthermore, the South Campus would also include the North Quad, which would provide a diversity of outdoor spaces for social interaction and relaxation. Amenities would include study tables, fitness areas, community gardens, dining terraces, lounging decks, and table games. A portion of the North Quad would be accessible to the community and may evolve into an outdoor sculpture garden or a

**Table IV.F-8 (Continued)
Consistency Analysis—RTP/SCS**

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
		community garden, with informal spaces for students to make and display their artistic projects. Additionally, the Project includes short- and long-term bicycle parking spaces, for students, employees, and visitors. In addition, the Project would provide electric recharge stations as required by Section 17.46.310 of the Zoning Code and the Pasadena Green Building Standards.
Support work-based programs that encourage emission reduction strategies and incentivize active transportation commuting or ride-share modes.	SCAG Local Jurisdictions	Consistent. While the land uses proposed as part of the Project would not include any work-based programs, as part of the TDM program plan, the Project would include programs that encourage emission reduction strategies, such as transit pass and vanpool fare subsidies.
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. 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 short- and long-term bicycle parking spaces for residents, employees, and visitors. In addition, the Project would provide a variety of open space areas within the Project Site. Specifically, the Main Quad on the South Campus would include pedestrian paths, planted areas, seating areas, dining areas, and assembly areas, which could be used to host movie nights and "Concerts in the Park." The Main Quad would also include a Cycleway, which would create a campus circulation spine for pedestrians, cyclists, and electric carts. Furthermore, the South Campus would also include the North Quad, which would provide a diversity of outdoor spaces for social interaction and relaxation. Amenities would include study tables, fitness areas, community gardens, dining terraces, lounging decks, and table games. A portion of the North Quad would be accessible to the community and may evolve into an outdoor sculpture garden or a community garden, with informal spaces for students to make and display their artistic projects. The Project also includes implementation of a TDM program plan which would include incentives for using alternative travel modes and bicycle amenities. Furthermore, the Project would provide electric recharge stations as required by Section 17.46.310 of the Zoning Code and the Pasadena Green Building Standards.

**Table IV.F-8 (Continued)
Consistency Analysis—RTP/SCS**

Actions and Strategies	Responsible Party(ies)	Consistency Analysis ^a
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 CTCs ability to encourage the development of telecommuting programs by employers. Furthermore, as part of the TDM program plan, the Project would include programs that encourage emission reduction strategies such as transit pass and vanpool fare subsidies.
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 short- and long-term bicycle parking spaces for students, employees, and visitors. Furthermore, the Project would provide electric recharge stations as required by Section 17.46.310 of the Zoning Code and the Pasadena Green Building Standards.
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	Not Applicable. 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 would implement a TDM program plan that would encourage transit use.
<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 Los Angeles) 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>		

**Table IV.F-9
Consistency with Applicable GHG Emissions Goals and Actions of Green City Action Plan**

Action		Undetermined, Likely, Achieved ^a	Consistency Analysis
Action 1	Increase the use of renewable energy to meet 10 percent of the city's peak electric load within seven years.	Achieved	Not Applicable. While this action primarily applies to the City and has been determined as achieved, the Project would support this action by implementing Project Design Feature F-2, which states that the Project would install PV cells and canopies over the North Lot and South Lot at the Hillside Campus and on the roof of the 988 Building.
Action 2	Reduce the City's peak electric load by 10 percent within seven years through energy efficiency, shifting the timing of energy demands, and conservation methods. Future cost-effective energy efficiency programs include: <ul style="list-style-type: none"> • Conducting a feasibility study for installing devices on municipal and private buildings that reduce the power required to operate equipment and for shifting the usage to off-peak. • Creating a "time use" billing rate that offer lower rates for electric usage during off-peak hours than during peak hours. Other possible rates to considering include tiered energy rates. 	Undetermined	Not Applicable. While this action primarily applies to the City, the Project would support this action by implementing Project Design Feature F-2, which states that the Project would install PV cells and canopies over the North Lot and South Lot at the Hillside Campus and on the roof of the 988 Building.
Action 3	Reduce GHG emission by 25 percent by 2030, and include a system for accounting and auditing these emissions.	Likely	Not Applicable. While this action primarily applies to the City, as shown in Appendix C of this Draft EIR, the Project's GHG emissions would represent a reduction of approximately 33 percent in comparison to a standard project with similar land use characteristics within the air basin.
Action 4	Achieve zero waste to landfills and incinerators by 2040.	Likely	Not Applicable. While this action primarily applies to the City, the Project would support this action by complying with the goals of the California Integrated Waste Management Act to reduce waste to landfills by 50 percent by 2020. Furthermore, ArtCenter shall only contract for waste disposal services with a company that recycles solid waste in compliance with AB 341. In addition, the Project would provide recycling bins

Table IV.F-9 (Continued)
Consistency with Applicable GHG Emissions Goals and Actions of Green City Action Plan

	Action	Undetermined, Likely, Achieved^a	Consistency Analysis
			at appropriate locations to promote recycling of paper, metal, glass and other recyclable material.
Action 8	Advance higher density, mixed use, walkable, bikeable and disabled accessible neighborhoods which coordinate land use and transportation with open space systems for recreation and ecological restoration.	Achieved	Consistent. While this action primarily applies to the City and has been determined as achieved, the Project represents an infill development within the City of Pasadena that would concentrate new college, student housing, theater, office, retail, and high-turnover restaurant uses within a HQTAs, 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-served transit stop or a transit corridor. The Metro Gold Line bisects the South Campus with the Fillmore Street Station located 300 feet north of the South Campus. In addition, the Project area is currently served by Pasadena Transit, Metro, and ArtCenter shuttles, which would continue to run between the Hillside Campus and the South Campus. Furthermore, the Project would provide short- and long-term bicycle parking spaces, in addition to bicycle-serving amenities, that would further encourage biking. Furthermore, the Project design would increase pedestrian accessibility, which would further encourage walkability, particularly on the South Campus.

^a The status of each action (achieved, likely, or undetermined) was reported in the 2010 Green Report. Source: Eyestone Environmental, 2017.

(d) City of Pasadena General Plan Mobility Element Policies

The City of Pasadena does not have a General Plan element specific to GHG emissions. However, policies from the Mobility Element of the Pasadena General Plan would also reduce GHG emissions or would have the secondary effect of reducing GHG emissions.

As discussed in detail above and in Section IV.L, Traffic, of this Draft EIR, the Project would reduce GHG emissions in the Pasadena region with implementation of project design features that would reduce VT, reduce VMT, and encourage use of alternative modes of transportation. Several objectives of the Project include expanding existing sustainable policies, programs, and facilities; lessening the dependence on vehicle; and creating a pedestrian-oriented environment defined by a hierarchy of spaces and pathways. As discussed above, the Metro Gold Line Fillmore Station is located 300 feet north of the South Campus. In addition, the Project area is currently served by Pasadena Transit, Metro, and ArtCenter shuttles, which would continue to run between the Hillside Campus and the South Campus. Furthermore, the Project would provide short-term and long-term bicycle parking spaces in addition to bicycle-serving amenities that would further encourage biking. Additionally, the project design features would increase pedestrian accessibility, which would further encourage walkability. These project design features contribute to meeting the Project's objectives. Based upon this evaluation, it is concluded that the Project would be consistent with policies pertaining to GHG emissions as set forth in the Mobility Element of the Pasadena General Plan. Thus, the Project meets or exceeds all applicable policies of the Pasadena General Plan that address GHG issues.

(e) Conclusion

In summary, the regulatory compliance analysis provided above demonstrates that the Project complies with or exceeds the regulations and GHG reduction actions/strategies outlined in CARB's *Climate Change Scoping Plan*, SCAG's 2016–2040 RTP/SCS, City's Green City Action Plan, and City's General Plan Mobility Element policies.

More than 95 percent of the Project's GHG emissions are due to energy use, mobile sources, and water-related source categories. The numerous regulatory programs that ensure energy efficiency of buildings and the increasing decarbonization of power production would reduce the Project's energy related emissions. The numerous regulatory programs that improve the fuel efficiency of vehicles would help reduce the Project's mobile related emissions. The numerous water efficiency measures would help reduce the Project's water-related emissions.

In addition, all of these emission source categories are covered by the California Cap-and-Trade program. As discussed above, the Cap-and-Trade Program has been designed to provide a firm cap, ensuring that the 2020 Statewide emission limit would not be exceeded. Thus, for the emission sources covered by the Cap-and-Trade Program, which are nearly all of the sources associated with land use development projects, compliance with 2020 goals is assured by the Cap-and-Trade Program.

The Project is consistent with the approach outlined in 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.

As part of SCAG's 2016–2040 RTP/SCS, a reduction in VMT within the region is a key component to achieving the 2020 and 2035 GHG emission reduction targets established by CARB. As shown in Appendix C of this Draft EIR, the Project results in a VMT reduction of approximately 33 percent in comparison to a standard project as estimated by CalEEMod and 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 and would be consistent with the 2016–2040 RTP/SCS.

The Project also would comply with the City of Pasadena's Green 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. The Project's compliance with regulatory measures and project design features provided above and throughout the Draft EIR would advance these objectives.

(3) Post-2030 Analysis

Recent studies show that the State's existing and proposed regulatory framework will put the State on a pathway to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050 if additional appropriate reduction measures are adopted.⁹⁰ Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrate that various combinations of policies could allow the Statewide emissions level to remain very low through 2050. Subsequent to the findings of these studies, SB 32 was passed on September 8, 2016, which would require 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

⁹⁰ *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.*

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.

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 to reduce regional emissions from the land use and transportation sector. Specifically, the 2016–2040 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. By meeting and exceeding the SB 375 targets for 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.

While the Project is not a traditional mixed-use development, which is typically encouraged by the 2016–2040 RTP/SCS, the Project's characteristics and mix of uses promote a reduction in VMT and would be consistent with GHG reduction strategies found in the 2016–2040 RTP/SCS, which would further achieve regional GHG reductions from the land use and transportation sectors, as required by SB 375, which, in turn, advances the State's long-term climate policies. By furthering implementation of SB 375, the Project supports regional land use and transportation GHG reductions consistent with State climate targets beyond 2020.

Thus, given the Project's consistency with State, SCAG, and City of Pasadena 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 related to GHG emissions are less than significant.

4. Cumulative Impacts

Although the Project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. The resultant consequences of that climate change can cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to State or global GHG emissions and, consequently, it would, in isolation, have no significant direct impact

on climate change. The State has mandated a goal of reducing Statewide emissions to 1990 levels by 2020, even though Statewide population and commerce is predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce Statewide GHG emissions. However, currently there are no applicable adopted CARB or SCAQMD significance thresholds or specific reduction targets, and no approved policy or guidance to assist in determining impact significance at the project or cumulative levels. Additionally, there is currently no generally accepted methodology to determine whether GHG emissions associated with a specific project represents new emissions or existing, displaced emissions.

As discussed above, the Project would be consistent with State, SCAG, and City of Pasadena GHG emission reduction goals and objectives, and 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 the Project's consistency with State, County, and City GHG reduction goals and objectives, the contribution to the cumulative impact of global climate change would be less than significant.

5. Mitigation Measures

As part of the Project, ArtCenter would incorporate project design features to further support and promote environmental sustainability. The Project also would comply with applicable regulatory requirements, including the provisions set forth in the 2016 CALGreen Code that have been incorporated into the City of Pasadena Green Building Standards.

Project-level and cumulative impacts with regard to GHG emissions would be less than significant. Therefore, no mitigation measures are required.

6. Level of Significance After Mitigation

Project-level and cumulative impacts with regard to GHG emissions would be less than significant without mitigation.