
IV. ENVIRONMENTAL IMPACT ANALYSIS

H. GREENHOUSE GAS EMISSIONS

INTRODUCTION

The analysis and information in this section are based primarily on the following report (refer to Appendix IV.H):

- *Greenhouse Gas Analysis, Urban Crossroads, October 30, 2013.*

ENVIRONMENTAL SETTING

Earth's natural warming process is known as the "greenhouse effect." This greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes. The glass allows solar radiation (sunlight) into Earth's atmosphere, but prevents radiative heat from escaping, thus warming Earth's atmosphere. Greenhouse gases (GHGs) keep the average surface temperature of the Earth close to a hospitable 60 degrees Fahrenheit. However, excessive concentrations of GHGs in the atmosphere can result in increased global mean temperatures, with associated adverse climatic and ecological consequences.

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 (during motorized transport, electricity generation, consumption of natural gas, industrial activity, manufacturing, etc.) and deforestation, as well as agricultural activity and the decomposition of solid waste.

Scientists refer to the global warming context of the past century as the "enhanced greenhouse effect" to distinguish it from the natural greenhouse effect.¹ While the increase in temperature is known as "global warming," the resulting change in weather patterns is known as "global climate change." Global climate change is evidenced in changes to wind patterns, storms, precipitation, and air temperature.

GHG Components

The primary GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).² 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.

¹ *Climate Change 101: Understanding and Responding to Global Climate Change, published by the Pew Center on Global Climate Change and the Pew Center on the States.*

² *As defined by California Assembly Bill (AB) 32 and Senate Bill (SB) 104.*

A general description of the GHGs discussed is provided on Table IV.H-1.

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

Greenhouse Gas	General Description
Carbon Dioxide (CO₂)	An odorless, colorless GHG, which has both natural and man-made sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Man-made sources of CO ₂ are burning coal, oil, natural gas, and wood.
Methane	A flammable gas and is the main component of natural gas. When one molecule of methane is burned in the presence of oxygen, one molecule of CO ₂ and two molecules of water are released. There are no ill health effects from methane. A natural source of methane is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain methane, 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. Nitrous oxide 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)	HFCs are synthetic man-made chemicals that are used as a substitute for chlorofluorocarbons (CFCs) for automobile air conditioners and refrigerants. CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs 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.
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 the 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 semiconductor manufacture.
Sulfur Hexafluoride (SF₆)	An inorganic, odorless, colorless, non-toxic, and nonflammable gas. SF ₆ is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.
<i>Source: Association of Environment Professionals, Alternative Approaches to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents, Final, June 29, 2007.</i>	

Global Warming Potential

Global Warming Potential (GWP) is one type of simplified indices based on radiative properties that can be used to estimate the potential future impacts of emissions of different gases upon the climate system in a relative sense. 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. A summary of the atmospheric lifetime and GWP of selected gases is presented on Table IV.H-2. As indicated, GWP ranges from 1 to 23,900.

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

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide	50 – 200	1
Methane	12 (+/-3)	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC: Tetrafluoromethane (CF ₄)	50,000	6,500
PFC: Hexafluoroethane (C ₂ F ₆)	10,000	9,200
Sulfur Hexafluoride (SF ₆)	3,200	23,900

Source: IPCC, 2006.

Potential 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 an anticipated 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 significantly, the warming increase could have the following consequences in California:³

- The Sierra snowpack would decline between 70 and 90 percent, threatening California's water supply;

³ California Environmental Protection Agency, *Climate Action Team Report to Governor Schwarzenegger and the Legislature, March 2006, p. 11.*

- 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 and sea water intrusion would increase;
- 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.

California-Specific Adaptation Strategies

Because climate change is already affecting California and current emissions will continue to drive climate change in the coming decades, regardless of any mitigation measures that may be adopted, the necessity of adaptation to the impacts of climate change is recognized by the State of California. The 2009 California Climate Adaptation Strategy Discussion Draft begins what will be an ongoing process of adaptation, as directed by Executive Order S-13-08. The goals of the strategy are to analyze risks and vulnerabilities and identify strategies to reduce the risks. Once the strategies are identified and prioritized, government resources would be identified. Finally, the strategy includes identifying research needs and educating the public.

Climate change risks are evaluated using two distinct approaches: (1) projecting the amount of climate change that may occur using computer-based global climate models, and (2) assessing the natural or human system's ability to cope with and adapt to change by examining past experience with climate variability and extrapolating this to understand how the systems may respond to the additional impact of climate change. The major anticipated climate changes expected in California include increases in temperature, decreases in precipitation, particularly as snowfall, and increases in sea level, as discussed above. These gradual changes will also lead to an increasing number of extreme events, such as heat waves, wildfires, droughts, and floods. This would impact public health, ocean and coast resources, water supply, agriculture, biodiversity, and transportation and energy infrastructure.

Key preliminary adaptation recommendations included in the strategy are as follows:

- Appointment of a Climate Adaptation Advisory Panel;
- Improved water management in anticipation of reduced water supplies, including a 20 percent reduction in per capita water use by 2020;
- Consideration of project alternatives that avoid significant new development in areas that cannot be adequately protected from flooding due to climate change;
- Preparation of agency-specific adaptation plans, guidance or criteria by September 2010;
- Consideration of climate change impacts for all significant state projects;
- Assessment of climate change impacts on emergency preparedness;

- Identification of key habitats and development of plans to minimize adverse effects from climate change;
- Development of guidance by the California Department of Public Health by September 2010 for use by local health departments to assess adaptation strategies;
- Amendment of Plans to assess climate change impacts and develop local risk reduction strategies by communities with General Plans and Local Coastal Plans; and
- Inclusion of climate change impact information into fire program planning by state firefighting agencies.

Existing State-wide Greenhouse Gas Emissions

In December 2006, the California Energy Commission (CEC) published the Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. This report indicates that California emitted between 425 and 468 million metric tons of greenhouse gases in 1990. California has the second lowest per capita rate of CO₂ emissions in the nation, with only the District of Columbia being lower. Between 1990 and 2000, California's population grew by approximately 13.8 percent (or 4.1 million) people and during the 1990 to 2003 period, California's gross state product grew by 83 percent (in dollars, not adjusted for inflation). However, California's GHG emissions were calculated to have grown by only 12 percent over the same period. The report concluded that California's ability to slow the rate of growth of GHG emissions was largely due to the success of its energy efficiency, renewable energy programs, and commitment to clean air and clean energy. The state's programs and commitments were calculated to have lowered its GHG emissions rate of growth by more than half of what it would have been otherwise.

Existing Project Site Emissions

The Project site is currently unoccupied, and no GHG emissions are generated at the site.

REGULATORY SETTING

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

International

Kyoto Protocol

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United

Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling greenhouse gas emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The Plan currently consists of more than 50 voluntary programs for member nations to adopt.

The Kyoto protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. Some have estimated that if the commitments outlined in the Kyoto protocol are met, global GHG emissions could be reduced an estimated five percent from 1990 levels during the first commitment period of 2008-2012. Notably, while the United States is a signatory to the Kyoto protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol's commitments. In December 2009, international leaders from 192 nations met in Copenhagen to address the future of international climate change commitments post-Kyoto.

The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions. The targets amount to an average of five percent reduction levels against 1990 levels over the five-year period 2008-2012. The major distinction between the Protocol and the Convention is that while the Convention encouraged industrialized countries to stabilize GHG emissions, the Protocol commits them to do so. Recognizing that developed countries are principally responsible for the current high levels of GHG emissions in the atmosphere as a result of more than 150 years of industrial activity, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

Negotiations after Kyoto have continued in an attempt to address the period after the first "commitment period" of the Kyoto Protocol, which concluded at the end of 2012. In Durban, South Africa, in 2011, parties to the protocol agreed in principle to negotiate a new comprehensive and legally binding climate agreement by 2015 to enter into force for all parties from 2020. However, significant divisions remain in determining the parameters of any such new protocol, including its enforcement mechanisms and the degree to which developing economies will begin to be subject to binding emissions targets.

The Western Regional Climate Action Initiative (WCI)

The Western Regional Climate Action Initiative (WCI) is a partnership among seven states, including California, and four Canadian provinces to implement a regional, economy-wide cap-and-trade system to reduce global warming pollution. The WCI will cap GHG emissions from the region's electricity, industrial, and transportation sectors with the goal to reduce the heat trapping emissions that cause global warming to 15 percent below 2005 levels by 2020. When the WCI adopted this goal in 2007, it estimated that this would require 2007 levels to be reduced worldwide between 50 percent and 85 percent by 2050. California is working closely with the other states and provinces to design a regional GHG reduction program that includes a cap-and-trade approach. The California Air Resources Board's (CARB) planned cap and-trade program, discussed below, is also intended to link California and the other member states and provinces.

National

United States Environmental Protection Agency

In the past, the United States Environmental Protection Agency (USEPA) has not regulated GHGs under the Clean Air Act, because the USEPA asserted that the Clean Air Act did not authorize the agency to issue mandatory regulations to address global climate change. However, in 2007 the U.S. Supreme Court held that the USEPA must consider regulation of motor-vehicle GHG emissions.⁴ The Court ruled that GHGs fit within the Clean Air Act's definition of a pollutant and that the USEPA did not have a valid rationale for not regulating GHGs. In December 2009, the USEPA issued an endangerment finding for GHGs under the Clean Air Act. This was the first step in regulating GHGs under the provisions of the Clean Air Act. In addition, on September 15, 2009, the National Highway Traffic Safety Administration and USEPA announced a proposed joint rule that would explicitly tie fuel economy to GHG emissions reductions requirements. The proposed new Corporate Average Fuel Economy (CAFE) Standards would cover automobiles for model years 2012 through 2016 and would require passenger cars and light trucks to meet a combined, per-mile, CO₂ emissions level. It is estimated that by 2016, this GHG emissions limit could equate to an overall light-duty vehicle fleet average fuel economy of as much as 35.5 miles per gallon.

Vehicle Standards

Other regulations have been adopted to address vehicle standards including the USEPA and NHTSA joint rulemaking for vehicle standards:

- On March 30, 2009, the NHTSA issued a final rule for model year 2011.⁵
- On May 7, 2010, the USEPA and the NHTSA issued a final rule regulating fuel efficiency and GHG pollution from motor vehicles for cars and light-duty trucks for model years 2012–2016.⁶
- On August 9, 2011, USEPA and NHTSA issued a Supplemental Notice of Intent announcing plans to propose stringent, coordinated federal greenhouse gas and fuel economy standards for model year 2017-2025 light-duty vehicles.⁷

⁴ *Massachusetts v. Environmental Protection Agency et al.* (127 S. Ct. 1438 (2007))

⁵ *NHSTA. 2009. Average Fuel Economy Standards Passenger Cars and Light Trucks Model Year 2011, Final Rule.* 75 Fed. Reg. 25324.

⁶ *USEPA. 2010. Light Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, Final Rule.* 75 Fed. Reg. 25324.

- NHSTA intends to set standards for model years 2022-2025 in a future rulemaking.⁸
- In addition to the regulations applicable to cars and light-duty trucks, on August 9, 2011, the USEPA and the NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks, which applies to vehicles from model year 2014–2018.⁹

Energy Independence and Security Act

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was adopted.¹⁰ Among other key measures, the Act would do the following, which would aid in the reduction of national GHG emissions, both mobile and non-mobile:

- 1) Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- 2) Prescribe or revise 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.
- 3) While superseded by NHTSA and USEPA actions described above, EISA also set miles per gallon targets for cars and light trucks and directed the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.

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

⁷ Available: <http://www.gpo.gov/fdsys/pkg/FR-2011-08-09/pdf/2011-19905.pdf>. Accessed November 2011.

⁸ NHSTA. 2012. 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards. 77 Fed. Reg. 62624.

⁹ USEPA Office of Transportation and Air Quality. 2011. EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium-and Heavy-Duty Vehicles. Available: <http://www.epa.gov/otaq/climate/documents/420f11031.pdf>. Accessed November 2011.

¹⁰ EISA. 2007. Pub.L. 110-140. 110th U.S Congress. Washington D.C. (January 4).

State

California Global Warming Solutions Act

In response to growing scientific and political concern with global climate change, California has adopted a series of laws to reduce emissions of GHGs to the atmosphere from commercial and private activities within the State. In September 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493, requiring 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. On June 5, 2005, then-Governor Arnold Schwarzenegger signed Executive Order S-3-05 setting the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. In response to the Executive Order, the Secretary of Cal/EPA created the Climate Action Team (CAT), which subsequently published the Climate Action Team Report in March 2006 (2006 CAT Report). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce climate change GHG emissions.

In September 2006, the California Global Warming Solutions Act of 2006, also known as AB 32, was enacted by the California legislature. AB 32 focuses on reducing GHG emissions in California, and requires CARB, the state agency charged with regulating statewide air quality, to adopt new rules and regulations that would achieve greenhouse gas emissions equivalent to statewide levels in 1990 by 2020. To achieve this goal, AB 32 mandates that CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary sources, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. As the intent of AB 32 is to limit 2020 emissions to the equivalent of those from 1990, and the present year (2014) is beyond the midpoint of this timeframe, the regulations would affect many existing sources of greenhouse and not just new general development projects.

As a central requirement of AB 32, the CARB was assigned the task of developing a Scoping Plan that outlines the State’s strategy to achieve the 2020 greenhouse gas emissions limit. The Scoping Plan is defined by AB 32 as “achieving the maximum technologically feasible and cost-effective reductions in GHG emissions from sources or categories of sources of GHGs by 2020.” In order to assess the scope of reductions needed to return to 1990 emissions levels, CARB first estimated the 2020 business-as-usual (BAU) GHG emissions. These are the GHG emissions that would be expected to result if there were no GHG reduction measures, and as if the State were to proceed on its pre-AB 32 emissions track. After estimating that statewide 2020 BAU GHG emissions would be 596 metric tons, the Scoping Plan then identified recommended GHG reduction measures that would reduce BAU emissions by approximately 174 metric tons (an approximately 28.35 percent reduction) by 2020. This Scoping Plan, which was developed by CARB in coordination with the CAT, was first published in October 2008. The Scoping Plan proposed a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve the environment, reduce the State’s dependence on oil, diversify the State’s energy

sources, save energy, create new jobs, and enhance public health. An important component of the plan is a cap-and-trade program covering 85 percent of the State's emissions. Additional key recommendations of the Scoping Plan include strategies to enhance and expand proven cost-saving energy efficiency programs; implementation of California's clean cars standards; and increases in the amount of clean and renewable energy used to power the State. Furthermore, the Scoping Plan proposes full deployment of the California Solar Initiative, high-speed rail, water-related energy efficiency measures, and a range of regulations to reduce emissions from trucks and from ships docked in California ports. The Scoping Plan was approved by CARB on December 11, 2008. As required by AB 32, CARB must update its Scoping Plan every five years to ensure that California remains on the path toward a low carbon future.

On August 19, 2011, following legal action in opposition to the Scoping Plan, CARB updated the Scoping Plan through a Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document (FED or 2011 Scoping Plan).¹¹ CARB's updated projected BAU emissions in the 2011 Scoping Plan is based on current economic forecasts (i.e., as influenced by the economic downturn) and certain GHG reduction measures already in place. The BAU projection for 2020 GHG emissions in California was originally estimated to be 596 MMTCO₂E. The updated calculation of the 2011 Scoping Plan's estimates for projected emissions in 2020, as of October 2010 based on current economic forecasts, totals 506.8 MMTCO₂E (or approximately 507 MMTCO₂E). Considering the updated BAU estimate of 507 MMTCO₂E by 2020, CARB estimates a 16 percent reduction below the estimated statewide BAU levels would now be necessary to return to 1990 emission levels (i.e., 427 MMTCO₂E) by 2020, instead of the 28.35 percent BAU reduction previously reported under the 2008 Scoping Plan.¹² This revised estimate is summarized on Table IV.H-3.

The mix of measures in the Scoping Plan provides a comprehensive approach to reduce emissions to achieve the 2020 target, and to initiate the transformations required to achieve the 2050 target set forth in Executive Order S-03-05 (80 percent below 1990 levels by 2050). The Cap-and-Trade Program included in the Scoping Plan would cover about 85 percent of GHG emissions throughout California's economy. The inclusion of many of these emissions within the Cap-and-Trade Program, along with a margin of safety in the uncapped sectors, will ensure that the 2020 target is met.

¹¹ *Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document (FED), Attachment D, CARB, August 19, 2011.*

¹² *Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document (FED), Attachment D, page 11, CARB, August 19, 2011.*

IV.H-3
Estimate of Emissions Reductions Needed Based on 2011 Scoping Plan

Emission Category	GHG Emission (MMTCO ₂ E)
<u>2008 Scoping Plan</u>	
2020 BAU Forecast	596
2020 Emissions Target	427
Reduction below BAU necessary to achieve 1990 levels by 2020	169 (28.35%) ^a
<u>2011 Scoping Plan</u>	
Revised 2020 BAU Forecast	507
2020 Emissions Target Set by AB 32	427
Reduction below BAU necessary to achieve 1990 levels by 2020	80 (16%) ^b
^a $596-427 = 169/596 = 28.35\%$	
^b $507-427 = 80/507 = 15.779\%$, rounded up to 16%	
<i>Source: Data derived from Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document (FED), Attachment D, Table 1.2-3 and page 11, CARB, August 19, 2011.</i>	

California Senate Bill No. 1368 (SB 1368)

In 2006, the State Legislature adopted Senate Bill 1368 (SB 1368), which was subsequently signed into law by the Governor. SB 1368 directs the California Public Utilities Commission (CPUC) to adopt a greenhouse gas emission performance standard (EPS) for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than five years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Due to the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law will effectively prevent California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. Thus, SB 1368 will lead to dramatically lower greenhouse gas emissions associated with California energy demand, as SB 1368 will effectively prohibit California utilities from purchasing power from out of state producers that cannot satisfy the EPS standard required by SB 1368.

SB 97 & CEQA Guidelines

In August 2007, the California State Legislature adopted Senate Bill 97 (SB 97), requiring the Office of Planning and Research (OPR) to prepare and transmit new CEQA guidelines for the mitigation of GHG emissions or the effects of GHG emissions to the Resources Agency by July 1, 2009. Following receipt of these guidelines, the Resources Agency was required to certify and adopt the guidelines prepared by OPR by January 1, 2010.

OPR submitted its proposed guidelines to the Secretary for Natural Resources on April 13, 2009. The Natural Resources Agency then undertook the formal rulemaking process to certify and adopt the amendments as part of the state regulations implementing CEQA. The CEQA Guidelines Amendments were adopted on December 30, 2009 and became effective on March 18, 2010.

The CEQA Guideline Amendments do not specify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. Instead, the amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but rely on the lead agencies in making their own significance threshold determinations based upon substantial evidence. The CEQA Guidelines Amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

Senate Bill 375

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every 8 years but can be updated every 4 years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects will not be eligible for funding programmed after January 1, 2012.

On September 23, 2010, CARB adopted Regional Targets for the reduction of GHG applying to the years 2020 and 2035.¹³ For the area under the Southern California Association of Governments' (SCAG) jurisdiction—including the Project area—CARB adopted Regional Targets for reduction of GHG emissions by 8 percent for 2020 and by 13 percent for 2035. On February 15, 2011, the CARB's Executive Officer approved the final targets.¹⁴

The SCS for the southern California region, including Riverside, Los Angeles, Orange, and San Bernardino counties was prepared by SCAG and approved on April 4, 2012. SCAG's SCS is included in the SCAG 2012-2035 Regional Transportation Plan Sustainable Communities Strategy (RTP/SCS). The

¹³ CARB. 2010. *Notice of Decision: Regional Greenhouse Gas Emissions Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375*. Sacramento, CA: carb. <http://www.arb.ca.gov/cc/sb375/notice%20of%20decision.pdf>

¹⁴ CARB 2011. *Executive Order No. G-11-024: Relating to Adoption of Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375*. Sacramento, CA: carb. (February)

SCS plans to concentrate future development and provide higher intensity development, including residential development, in proximity to transit hubs in order to reduce VMT and thereby, reduce GHG emissions from personal vehicles. Specifically, the SCS distributes growth forecast data to transportation analysis zones (TAZs) for the purpose of modeling performance.

The goals and policies of the RTP/SCS that reduce vehicle miles traveled (VMT) focus on transportation and land use planning that include building infill projects, locating residents closer to where they work and play and designing communities so there is access to high quality transit service. The RTP/SCS adopts land use patterns at the jurisdictional level.¹⁵ However, it is important to note that there is nothing in SB 375 that requires a city's "land use policies and regulations...to be consistent with the regional transportation plan or an alternative planning strategy."¹⁶

The RTP/SCS also includes an appendix listing examples of measures that could reduce impacts from planning, development and transportation.¹⁷ It notes, however, that the example measures are "not intended to serve as any kind of checklist to be used on a project-specific basis." Since every project and project setting is different, project-specific analysis is needed to identify applicable and feasible mitigation. These mitigation measures are particularly important where streamlining mechanisms under SB 375 are utilized. The GHG example measures include the following:

- **GHG1:** SCAG member cities and the county governments may adopt and implement Climate Actions Plans (CAPS, also known as Plans for the Reduction of Greenhouse Gas Emissions as described in CEQA Guidelines Section 15183.5 Tiering and Streamlining the Analysis of Greenhouse Gas Emissions).
- **GHG2:** Project sponsors may require Best Available Control Technology (BACT) during construction and operation of projects, including:
 - a) Solicit bids that include use of energy and fuel-efficient fleets;
 - b) Solicit preference construction bids that use BACT, particularly those seeking to deploy zero- and/or near zero emission technologies;
 - c) Employ use of alternative fueled vehicles;

¹⁵ SCAG 2012-2035 Regional Transportation Plan Sustainable Communities Strategy, Table 18, Growth Forecast Appendix.

¹⁶ CA Gov't. Code §65080(b)(2)(E).

¹⁷ SCAG, Final PEIR for the 2012-2035 RTP/SCS, Appendix G, available here: http://rtpscs.scag.ca.gov/Documents/peir/2012/final/2012/PEIR_AppendixG_ExampleMeasures.pdf.

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- d) Use lighting systems that are energy efficient, such as LED technology;
 - e) Use CEQA Guidelines Appendix F, Energy Conservation, to create an energy conservation plan;
 - f) Streamline permitting process to infill, redevelopment, and energy-efficient projects;
 - g) Use an adopted emissions calculator to estimate construction-related emissions;
 - h) Use the minimum feasible amount of GHG-emitting construction materials that is feasible;
 - i) Use of cement blended with the maximum feasible amount of flash or other materials that reduce GHG emissions from cement production;
 - j) Use of lighter-colored pavement where feasible;
 - k) Recycle construction debris to maximum extent feasible; and
 - l) Plant shade trees in or near construction projects where feasible.
- **GHG3:** Local jurisdictions can and may establish a coordinated, creative public outreach activities, including publicizing the importance of reducing GHG emissions and steps community members may take to reduce their individual impacts.
 - **GHG4:** Pedestrian and Bicycle Promotion: Local jurisdictions may work with local community groups and business associations to organize and publicize walking tours and bicycle events, and to encourage pedestrian and bicycle modes of transportation.
 - **GHG5:** Waste Reduction: Local jurisdictions can and should organize workshops on waste reduction activities for the home or business, such as backyard composting, or office paper recycling, and may schedule recycling drop-off events and neighborhood chipping/mulching days.
 - **GHG6:** Water Conservation: Local jurisdictions may organize support and/or sponsor workshops on water conservation activities, such as selecting and planting drought tolerant, native plants in landscaping, and installing advanced irrigation systems.
 - **GHG7:** Energy Efficiency: Local jurisdictions may organize workshops on steps to increase energy efficiency in the home or business, such as weatherizing the home or building envelope, installing smart lighting systems, and how to conduct a self-audit for energy use and efficiency.

- **GHG8:** Schools Programs: Local jurisdictions may develop and implement a program to present information to school children about climate change and ways to reduce GHG emissions, and may support school-based programs for GHG reduction, such as school based trip reduction and the importance of recycling.

(As discussed below, the City has adopted many of these policies in its General Plan Update.)

This law also extends the minimum time period for the regional housing needs allocation cycle from 5 years to 8 years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required being consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as “transit priority projects.”

Title 24 Energy Efficiency Standards

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. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.

The most recent update to Title 24 was adopted by the CEC on May 31, 2012, revised in December 2013, and will become effective in July 2014. The 2013 Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings, and include requirements that will enable both demand reductions during critical peak periods and future solar electric and thermal system installations. The most significant efficiency improvements to the residential Standards are proposed for windows, envelope insulation, and heating, ventilation, and air conditioning (HVAC) system testing. The most significant efficiency improvements to the nonresidential Standards are proposed for lighting controls, windows, unitary HVAC equipment, and building commissioning. New efficiency requirements for process loads such as commercial refrigeration, data centers, kitchen exhaust systems, and compressed air systems are included in the nonresidential Standards. The 2013 Building Energy Efficiency Standards include expanded criteria for acceptance testing of mechanical and lighting systems, as well as new requirements for code compliance data to be collected in a California Energy Commission-managed repository.

The 2013 Building Energy Efficiency Standards also include updates to the energy efficiency divisions of the California Green Building Code Standards (Title 24, Part 11). A set of prerequisites has been established for both the residential and nonresidential Reach Standards, which include efficiency measures that should be installed in any building project striving to meet advanced levels of energy efficiency. The residential Reach Standards have also been updated to require additional energy efficiency

or on-site renewable electricity generation to meet a specific threshold of expected electricity use. Both the residential and nonresidential Reach Standards include requirements for additions and alterations to existing buildings.

California Green Building Standards

The California Green Building Standards Code, which is Part 11 of the California Code of Regulations, is commonly referred to as the CALGreen Code. The California Energy Commission adopted changes to the 2013 Building Energy Efficiency Standards contained in Title 24 CCR Part 6 (also known as the California Energy Code), and associated administrative regulations in Part 1. The 2013 Building Energy Efficiency Standards are 25 percent more efficient than previous standards for residential construction and 30 percent better for nonresidential construction. The standards will require better windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses. Title 24 CCR Part 6 was originally scheduled to go into effect on January 1, 2014, but was revised to go into effect on July 1, 2014.

CARB's Preliminary Draft Staff Proposal for Interim Significance Thresholds

Separate from its Scoping Plan approved in December of 2008, CARB issued a Staff Proposal in October 2008, as its first step toward developing recommended statewide interim thresholds of significance for GHGs that may be adopted by local agencies for their own use. CARB staff's objective in this proposal is to develop a threshold of significance that will result in the vast majority (approximately 90 percent statewide) of GHG emissions from new industrial projects being subject to CEQA's requirement to impose feasible mitigation. The proposal does not attempt to address every type of project that may be subject to CEQA, but instead focuses on common project types that, collectively, are responsible for substantial GHG emissions – specifically, industrial, residential, and commercial projects. CARB is developing these thresholds in these sectors to advance climate objectives, streamline project review, and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state. These draft thresholds are under revision in response to comments. There is currently no timetable for finalized thresholds at this time.

As currently proposed by CARB, the threshold consists of a quantitative threshold of 7,000 metric tons (MT) of CO₂e per year for operational emissions (excluding transportation), and performance standards for construction and transportation emissions. These performance standards have not yet been adopted.

However, CARB's proposal is not yet final and thus, is not applied to the Project. Further, CARB's proposal sets forth draft thresholds for industrial projects that have high operational stationary GHG emissions, such as manufacturing plants, or uses that utilize combustion engines. The Project does not propose or require these types of uses, and therefore, if the CARB threshold were applied to the Project,

such an application could be either misleading, or irrelevant. This Project's GHG emissions are mostly from mobile sources and as such, CARB's proposal is not germane to the Project.¹⁸

South Coast Air Quality Management District Recommendations for Significance Thresholds

In April 2008, the South Coast Air Quality Management District (SCAQMD), in order to provide guidance to local lead agencies on determining the significance of GHG emissions identified in CEQA documents, convened a "GHG CEQA Significance Threshold Working Group."¹⁹ The goal of the working group is to develop and reach consensus on an acceptable CEQA significance threshold for GHG emissions that would be utilized on an interim basis until CARB (or some other state agency) develops statewide guidance on assessing the significance of GHG emissions under CEQA.

Initially, SCAQMD staff presented the working group with a significance threshold that could be applied to various types of projects—residential, non-residential, industrial, etc. However, the threshold is still under development. In December 2008, staff presented the SCAQMD Governing Board with a significance threshold for stationary source projects where it is the lead agency. This threshold uses a tiered approach to determine a project's significance, with 10,000 metric tons of CO₂ equivalent (MTCO_{2e}) as a screening numerical threshold for stationary sources.

In September 2010, the Working Group released additional revisions which recommended a threshold of 3,500 MTCO_{2e} for residential projects, 1,400 MTCO_{2e} for commercial projects, and 3,000 MTCO_{2e} for mixed use projects, additionally the working group identified project-level efficiency target of 4.8 MTCO_{2e} per service population as a 2020 target and 3.0 MTCO_{2e} per service population as a 2035 target. The recommended area-wide or plan-level target for 2020 was 6.6 MTCO_{2e} and the plan-level target for 2035 was 4.1 MTCO_{2e}. The SCAQMD has not established a timeline for formal consideration of these thresholds.²⁰

The SCAQMD has also adopted Rules 2700, 2701, and 2702 that address GHG reductions. However, these rules address boilers and process heaters, forestry, and manure management projects, none of which are proposed or required by the Project.

¹⁸ <http://www.arb.ca.gov/cc/localgov/ceqa/meetings/102708/prelimdraftproposal102408.pdf>

¹⁹ For more information visit: <http://www.aqmd.gov/ceqa/handbook/GHG/GHG.html>

²⁰ SCAG, *Final PEIR for the 2012-2035 RTP/SCS, Appendix G*, available here: http://rtpscs.scag.ca.gov/Documents/peir/2012fPEIR_AppendixG_ExampleMeasures.pdf

Local**City of Hemet**

The City of Hemet's (the "City") Environmental Impact Report for the General Plan Update includes a GHG emissions inventory (inventory) for communitywide emission sources for the 2009 base year in the City (refer to Table IV.H-4).²¹ Communitywide 2009 GHG emissions were calculated using a "bottom-up" approach, which involves multiplication of an emission factor for a given process by a consumption rate for that process. The largest sources of communitywide GHG emissions for 2008 are the following, in descending order:

1. Transportation (60 percent)
2. Energy use (20 percent)
3. Water use and wastewater generation (13 percent)
4. Solid waste generation (4 percent)
5. Area sources (3 percent)

Table IV.H-4
City of Hemet 2009 Baseline Communitywide GHG Emissions

Emission Source	Emissions (MMTCO ₂ e)
Transportation	678,587
Energy	36,106
Water & Wastewater	228,531
Solid Waste	47,531
Total	1,139,841
Population	95,384
Employment	25,190
Service Population (Population + Employment)	120,574
Efficiency Metric (MT CO₂e/SP/yr)	9.5
<i>Source: Urban Crossroads, January 2013.</i>	

Climate conditions in the southern California region can result in a smaller relative contribution of energy-related emissions due to less intense need for space heating/cooling as compared to other locations such as northern California.

²¹ City of Hemet, Hemet General Plan FEIR, available at: <http://www.cityofhemet.org/DocumentCenter/Home/View/875>, January 2012.

City of Hemet General Plan Update

The following General Plan policies and programs are considered to address GHG emissions. These programs indicate the City's intent to conserve energy and reduce emissions.

The City has adopted a number of programs, including Program OS-P-34 to develop and adopt a climate action plan (CAP) for the City of Hemet. The CAP will have two primary objectives, which are to reduce total greenhouse gas (GHG) emissions in the City by 2020 and create adaptation strategies to address the impacts of climate change on the City, such as increased risk of flooding and wildfires, diminished water supplies, and public health. The City intends to design the CAP to function as a Plan for the Reduction of GHG Emissions, as defined in the State CEQA Guidelines (Section 15183.5). The CAP will be adopted in a public process following environmental review (State CEQA Guidelines Section 15183.5[b][1][F]).

The City has also adopted the following policies:

- **LU-1.4 Walkable Neighborhoods** Create walkable neighborhoods that integrate pedestrian paths and trails into a safe, cohesive and varied transportation system that provides connectivity to nearby land uses and encourages physical activity and less dependence on the automobile.
- **LU-1.7 Integrate Land Use and Transportation Networks** Provide a variety of transportation choices to serve adjacent land uses and integrate a comprehensive system of streets, transit, passenger rail, bike paths and pedestrian connections to serve the community.
- **LU-2.4 Concentrate Land Uses** Promote efficient use of land resources through compact building design, infill development, and land use patterns that reduce infrastructure costs and make more effective use of existing and planned transportation systems and public facilities, and minimize impacts to natural environmental resources.
- **LU-2.6 Alternative Modes of Transportation** Promote alternative modes of transportation and provide street systems that disperse rather than concentrate traffic congestion. Provide short, connecting blocks in residential neighborhoods and utilize traffic-calming design strategies to reduce traffic speeds.
- **LU-2.9 Sustainable Design** Require that new development be designed to minimize consumption of water, energy and other resources and provide long-term sustainable site and building design features.
- **LU-5.2 Land Use Connections** Promote employment and shopping centers in close proximity to residences in mixed use or transit-oriented development areas, and integrate with attractive and walkable pedestrian paths.

- **LU-9.11 Sustainable Infrastructure and Development** Require new infrastructure systems and site development to incorporate sustainable design and best practices including the use of recycled water, alternative and energy conserving techniques, and naturalized “conjunctive use” drainage basins to accommodate drainage, recharge the aquifer, promote water quality, and add aesthetic value as a neighborhood amenity.
- **OS-5.3: Development Design** Encourage the efficient use of water resources by residential, commercial, and industrial users by requiring development project proposals to incorporate best management practices into their designs, including the use of new technology in development design.
- **OS-5.4: Reclaimed Water** Use reclaimed water to irrigate parks, golf courses, public landscaped areas, and for other feasible applications as service becomes available from local water providers.
- **OS-5.5: Water Efficient Landscaping** Require new landscape installations or rehabilitation projects by public agencies, nonresidential developers, multi-family residential developers, and homeowners to use water efficiently, encourage water conservation, and prevent water waste.
- **OS-6.1: CALGreen Standards** Encourage the efficient use of energy resources by residential, commercial, and industrial users by requiring project proposals to incorporate energy-efficient products and techniques into their designs in accordance with adopted California Green Building Standards Code standards and other development standards.
- **OS-6.2: City Incentives** Through incentives such as expedited review of development projects, promote non-required alternative energy practices and Leadership in Energy and Environmental Design (LEED) certifications.
- **OS-6.5: Clean Energy** Support the use and production of clean energy resources through green technology and programs that promote wind, solar, renewable, biomass, and cogenerating energy resources, where compatible with adjacent land uses.
- **OS-6.6: Solar Energy** Encourage existing or new structures to maximize solar access by promoting passive solar energy design, natural ventilation, effective use of daylight, an on-site solar generation.
- **OS-6.7: Recycling** Promote the use of recycling and recycled materials in development projects and consumable products.
- **OS-7.1: Development Design and Practices** Reduce the amount of air pollution emissions from mobile and stationary sources, and enhance the South Coast Air Basin by using best management practices in development proposals and project implementation.

- **OS-7.2: Public Transportation** Pursue expansion of the public transportation system, as well as bicycle and pedestrian trails, that are linked to the regional transit network, to reduce vehicle trips.
- **OS-7.6: Transportation Trip Management** Encourage employers to implement transportation demand management (TDM) measures to reduce trips and VMT.
- **OS-7.8: Green Building Techniques** Encourage green building techniques that improve indoor air quality, energy efficiency and conservation in buildings, and utilization of renewable energy sources.

ENVIRONMENTAL IMPACT ANALYSIS

Methodology

The California Climate Action Registry (CCAR) General Reporting Protocol recommends the separation of GHG emissions into three categories that reflect different aspects of ownership or control over emissions. They include the following:

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.²²

CARB believes that consideration of so-called indirect emissions provides a more complete picture of the GHG emissions 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.²³ CARB has proposed requiring the calculation of direct and indirect GHG emissions as part of the AB 32 reporting requirements. Additionally, the 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

²² *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.*

²³ *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.*

construction activities.”²⁴ Therefore, direct and indirect emissions have been calculated for the Project from these sources.

Construction-related Emissions

Construction emissions were calculated using the California Emissions Estimator Model (CalEEMod Version 2011.1.1), which is based on OFFROAD2007 model outputs. OFFROAD2007 is an emissions estimation model developed by CARB to calculate emissions from off-road road equipment, including construction equipment. The output values used in this analysis were modeled to be project-specific, based on equipment mix, usage rates (hours per day), and length of construction schedule. For a complete discussion on these construction assumptions, please refer to Section IV.B (Air Quality) of this Draft EIR. The mobile source emission methodology for on-road construction emissions, associated with worker commute and delivery of materials, uses a VMT rate calculated by CalEEMod in order to generate values for annual emissions. Emission factors are derived from the EMFAC2007 model using light duty automobile factors for worker commute and heavy-duty truck factors for deliveries.

Table IV.H-5 (presented later in this section) identifies the total estimated GHG emission associated with constructing the Project. The Association of Environmental Professionals (AEP) has recommended that total construction emissions be amortized and added to operational emissions. This amortization method has also been used by the SCAQMD. Accordingly, the construction-related GHG emissions have been amortized to be consistent with this guidance.

The most common GHGs emitted in association with the construction of land use developments include CO₂, CH₄, and N₂O. CalEEMod provides these GHGs and translates them into a common currency of carbon dioxide equivalent (CO₂e). In order to obtain the CO₂e, an individual GHG is multiplied by its global warming potential (GWP). The GWP designates on a pound for pound basis the potency of the GHG compared to CO₂. CalEEMod uses GWP from the IPCC Second Assessment Report (SAR).

Operation-related Emissions

CalEEMod Version 2011.1.1 was used to calculate the energy use and potential emissions generated by implementation of the Project. These factors include motor vehicles, electricity, natural gas, water usage/wastewater generation, hearth combustion, landscaping/maintenance equipment, and solid waste generation and disposal.

Motor vehicle emission calculations associated with operation of the Project use a projection of annual VMT, which is derived from the trips provided in the Project traffic study and the default trip

²⁴ State of California Office of Planning and Research (OPR), *Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review*, June 19, 2008.

characteristics in CalEEMod. These values account for the daily and seasonal variations in trip frequency and length associated with travel to and from the Project site and other activities that require a commute. It should be noted that many do not consider traffic associated with new commercial or retail land uses and existing residential land uses to be “new” trips; this traffic already exists, and the construction of new commercial or retail uses does not increase traffic, rather the new land uses displaces the trips from another area. Similarly, one component of SB 375 recognizes that the current traffic models inaccurately assume that every trip associated with a development project is new. SB 375 requires the California Transportation Commission to develop guidelines for traffic models so that they more accurately account for emissions. With the goal of better recognizing trip “transfers,” as opposed to trip “creation,” the new traffic model must (for example) address relationships between a project and complementary land uses. Accordingly, although the current traffic models assume that all trips associated with the Project are new, in fact, many of these trips would merely be transferred from other areas.

GHGs are emitted as a result of activities in buildings for which electricity and natural gas are used as energy sources. Combustion of any type of fuel emits criteria pollutants and GHGs directly into the atmosphere; when this occurs in a building this is a direct emission source associated with that building and CalEEMod calculates all of these pollutants. GHGs are also emitted during the generation of electricity from fossil fuels. When electricity is used, the electricity generation typically takes place offsite at a power plant; electricity use generally causes emissions in an indirect manner and therefore GHG emissions have been calculated from electricity generation.

The amount of water used and wastewater generated by a project has indirect GHG emissions associated with it. These emissions are a result of the energy used to supply, distribute, and treat the water and wastewater. It will often be the case that the water treatment and wastewater treatment occur outside of the project area. In this case, it is still important to quantify the energy and associated GHG emissions attributable to the water use. In addition to the indirect GHG emissions associated with energy use, wastewater treatment can directly emit both methane and nitrous oxide. Thus, GHG emissions have been calculated from water used and wastewater generated by the Project.

Municipal solid waste (MSW) is the amount of material that is disposed of by land filling, recycling, or composting. CalEEMod calculates the indirect GHG emissions associated with waste that is disposed of at a landfill. The program uses annual waste disposal rates from the California Department of Resources Recycling and Recovery (CalRecycle) data for individual land uses. If waste disposal information was not available, waste generation data was used. CalEEMod uses the overall California Waste Stream composition to generate the necessary types of different waste disposed into landfills. The program quantifies the GHG emissions associated with the decomposition of the waste that generates methane based on the total amount of degradable organic carbon. The program will also quantify the CO₂ emissions associated with the combustion of methane, if applicable. Default landfill gas concentrations

were used as reported in Section 2.4 of AP-42.²⁵ The IPCC has a similar method to calculate GHG emissions from MSW in its 2006 Guidelines for National Greenhouse Gas Inventories.

Planting trees will sequester CO₂ and is considered to result in a one-time carbon-stock change. Trees sequester CO₂ while they are actively growing. The amount of CO₂ sequestered depends on the type of tree. CalEEMod uses default annual CO₂ accumulation per tree for specific broad species classes.

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. The emissions associated from landscape equipment use was processed using OFFROAD 2007 and carb's Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment (6/13/2003).

Thresholds of Significance

A project's GHG emissions typically would be relatively very small in comparison to state or global GHG emissions and, consequently, an individual project would, in isolation, have no significant direct impact on climate change. 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, which can cause the adverse environmental effects previously discussed. Accordingly, the threshold of significance for GHG emissions determines whether a project's contribution to global climate change is "cumulatively considerable." Many air quality agencies (including SCAQMD and SLVAPCD) concur that GHG and climate change should be evaluated as a potentially significant cumulative, rather than a project direct impact.

The City does not provide guidance as to how climate change issues are to be addressed. Furthermore, neither the SCAQMD nor the CEQA Guidelines Amendments adopted by the Natural Resources Agency on December 30, 2009, provide any adopted thresholds of significance for addressing GHG emissions. Nonetheless, the new Section 15064.4, 15064.7 and 15126.4 of the CEQA Guidelines Amendments serves to assist lead agencies in determining the significance of the impacts of GHGs.

Specifically, the Section 15064.4 of CEQA Guidelines Amendments entitled "Determining the Significance of Impacts from Greenhouse Gas Emissions" states the following:

- (a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good faith effort, based to the extent possible on scientific and

²⁵ See AP-42, Fifth Edition, *Compilation of Air Pollutant Emission Factors*, prepared by the Office of Air Quality Planning and Standards, USEPA, January 1995.

factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

- (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitation of the particular model or methodology selected for use; and/or
 - (2) Rely on a qualitative analysis or performance based standards.
- (b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:
- (1) The extent to which the project may increase or reduce greenhouse gas 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.
 - (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effect of a project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

Section 15064.7(c) of CEQA Guidelines Amendments entitled "Thresholds of Significance" adds the following:

- (c) When adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.

Section 15126.4(c) of CEQA Guidelines Amendments entitled “Mitigation Measures Related to Greenhouse Gas Emissions” provides the following guidance:

- (c) Consistent with Section 15126.4, lead agency shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of greenhouse gas emissions. Measures to mitigate the significant effects of greenhouse gas emissions may include among others:
- (1) Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency’s decision;
 - (2) Reductions in emissions resulting from a project through implementation of project features, project design, or other measures, such as those described in Appendix F;
 - (3) Off-site measures, including offsets that are not otherwise required, to mitigate a project’s emissions;
 - (4) Measures that sequester greenhouse gases;
 - (5) In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of greenhouse gas emissions, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.

Finally, the CEQA Guidelines Amendments supplemented Section VII of Appendix G of the CEQA Guidelines to state that, a project could have a significant environmental impact if it would:

- (a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- (b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Subsequent to the CEQA Guideline Amendment, the Court of Appeals in *Citizens for Responsible Equitable Environmental Development v. Chula Vista* (2011) 197 Cal. App. 4th 327 (“*CREED v. Chula Vista*”) had the opportunity to determine if “whether a project would conflict with or obstruct the goals or strategies of the California Global Solutions Act of 2006 (AB 32) or its governing regulations” was an appropriate threshold of significance. The Court held that, “Here, the City properly exercised its discretion to utilize compliance with AB 32 as the threshold.” (*CREED v. Chula Vista* at p. 336.). Citing

CEQA Guidelines, Section 15064.4(b), the court's opinion further reiterated that lead agencies are allowed to decide what threshold of significance it will apply to a project.

As discussed herein, there is substantial evidence to support that these thresholds accurately assess whether Project impacts are cumulatively considerable. Assessing the Project's GHG emissions and BAU emissions as compared to the existing condition at the Project site is consistent with the assumptions and methodologies identified in CARB's Scoping Plan for evaluating the State's compliance with AB 32. As demonstrated on Table IV.H-3, California needs to reduce its overall 2020 emissions by 16 percent below BAU as provided in CARB's 2011 Scoping Plan. Achieving the 1990 level of emissions statewide represents California's fair share contribution toward stabilizing global warming and thus mitigating its environmental impacts. These BAU projections account for growth (i.e. new development) and thus apply to existing and future development. Within the context of this information, the Project would have a cumulatively considerable contribution to global warming and would conflict with the implementation of AB 32 if it did not also do its fair share toward achieving the AB 32 emission target goals. While the 2011 Scoping Plan reduced the reduction from BAU necessary to achieve AB 32's goals from 28.5% to 16%, this analysis continues to rely on the 28.5% reduction goal as the more conservative target.

Further, Section 15064(h)(3) of the CEQA Amendments authorizes lead agencies to conclude that a project's incremental contribution to a cumulative effect is not cumulatively considerable:

[I]f the project will comply with the requirements in a previously approved plan or mitigation program ... that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency.

Pursuant to Section 15064(h)(3) for a project consistent with AB 32's goal, which would require a 28.5 percent or greater reduction from BAU, project-specific and cumulative climate change impacts would be less than significant. This approach is consistent with guidance released by SCAQMD, Riverside County, San Joaquin Air Pollution Control District (SJVAPCD), and Bay Area Air Quality Management District (BAAQMD).²⁶ Section 15064.7 of the CEQA Amendments states that "[w]hen adopting thresholds of

²⁶ Specifically, one of SCAQMD's prior draft significance thresholds recommended determining a project's significance based on whether a project can demonstrate a targeted reduction compared to a business-as-usual scenario, consistent with AB 32's emission-reduction mandates. The SJVAPCD allows a less-than-significant finding if a project implements best performance standards or reduces project emissions by at least 29% below business as usual consistent with the AB 32's required emission reductions. Similarly both Riverside County and BAAQMD's thresholds were derived to gauge compliance with AB 32.

significance, a lead agency may consider thresholds of significant previously adopted or recommended by other public agencies or recommended by experts."

Project Impacts

Impact IV.H-1: The Project would not generate direct or indirect greenhouse gas emissions that would result in a significant impact on the environment. The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Project GHG Emissions

Construction activities associated with the Project would result in emissions of CO₂ and CH₄ from construction activities. Additional details on the specific construction-related inputs that were programmed in the CalEEMod™ model to estimate the Project's construction-related GHG emissions are included in Appendix IV.H. For construction phase Project emissions, GHGs are quantified and amortized over the life of the Project. To amortize the emissions over the life of the Project, the SCAQMD recommends calculating the total greenhouse gas emissions for the construction activities, dividing it by the a 30-year Project life then adding that number to the annual operational phase GHG emissions. As such, construction emissions were amortized over a 30-year period and added to the annual operational phase GHG emissions.

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

- Building Energy Use
- Water Supply, Treatment and Distribution
- Solid Waste
- Mobile Source Emissions

Carbon sequestration is the uptake and storage of atmospheric carbon, trees, and plants, for example, absorb CO₂, release the oxygen and store the carbon. There can be one-time loss of sequestered carbon resulting from conversion of existing vegetation types to developed uses. For this Project, there is no existing vegetation on-site and thus, there would be no carbon sequestration, and no additional analysis is required.

As shown on Table IV.H-5, the total amount of Project-related GHG emissions for BAU without accounting for Project Design Features or state requirements that would reduce GHG emissions from direct and indirect sources combined would total approximately 53,243.52 MMTCO₂e. The BAU scenario evaluated herein is reflective of a realistic Project development scenario that would occur absent

Project Design Features and state requirements established by AB 32, and is consistent with the CARB's definition of BAU.²⁷

**Table IV.H-5
Total Project GHG Emissions Annual BAU
Without Project Design Features or State Requirements**

Emission Source	Emissions (metric tons per year)			
	CO ₂	CH ₄	N ₂ O	Total CO ₂ E
Annual construction-related emissions amortized over 30 years	167.42	0.01	--	167.43
Area	709.24	0.35	0.01	720.89
Energy	6,143.20	0.23	0.11	6,181.38
Mobile	44,478.70	4.10	--	44,564.75
Waste	298.03	17.61	--	667.90
Water	831.21	3.69	0.10	941.17
Total CO₂E (All Sources)	53,243.52			
<i>Note: Totals obtained from CalEEMod™ and may not total 100% due to rounding. Model output included in Appendix IV.H.</i>				
<i>Source: Urban Crossroads, January 2013.</i>				

The Project would be required to comply with all mandatory regulatory requirements imposed by the State of California and the SCAQMD aimed at the reduction of air quality emissions. Those that are applicable to the Project and that would assist in the reduction of greenhouse gas emissions include the following:

- Global Warming Solutions Act of 2006 (AB 32)
- Regional GHG Emissions Reduction Targets/Sustainable Communities Strategies (SB 375)
- Title 24 California Code of Regulations (California Building Code). Establishes energy efficiency requirements for new construction.
- Title 20 California Code of Regulations (Appliance Energy Efficiency Standards). Establishes energy efficiency requirements for appliances. Appliances used by Project residents and employees must comply with these requirements.

²⁷ CARB defines BAU in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

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- California Water Conservation in Landscaping Act of 2006 (AB1881). Requires local agencies to adopt the Department of Water Resources updated Water Efficient Landscape Ordinance or equivalent by January 1, 2010 to ensure efficient landscapes in new development and reduced water waste in existing landscapes. The Project will comply with these obligations through compliance with the City's water-efficient landscape ordinance.

Additionally, implementation of certain State requirements will reduce GHG emissions from direct and indirect sources. These include the following:

- Statewide Retail Provider Emissions Performance Standards (SB 1368). Requires energy generators to achieve performance standards for GHG emissions.
- Renewable Portfolio Standards (SB 1078). Requires electric corporations to increase the amount of energy obtained from eligible renewable energy resources to 20 percent by 2010 and 33 percent by 2020.
- Pavely Fuel Efficiency Standards (AB1493). Establishes fuel efficiency ratings for new vehicles.
- Title 17 California Code of Regulations (Low Carbon Fuel Standard). Requires carbon content of fuel sold in California to be 10 percent less by 2020.

Additionally, the Project would incorporate the following Project Design Features to further reduce GHG emissions (Project Design Features GHG-1 through GHG-3 have been included in this section as Mitigation Measures H-1 through H-3, below):

Project Design Feature GHG-1

Prior to the issuance of building permits, the Project Applicant shall submit energy usage calculations to the Planning Division showing that the Project is designed to achieve 10 percent efficiency beyond the 2008 California Building Code Title 24 requirements (in the aggregate). Examples of measures that reduce energy consumption include, but are not limited to, the following:²⁸

- a) Increase in insulation such that heat transfer and thermal bridging is minimized.
- b) Limit air leakage through the structure and/or within the heating and cooling distribution system.

²⁸ *It should be noted that the items listed are not all required and merely current examples; the list is not all-inclusive and other features that reduce energy consumption also could be acceptable).*

- c) Use of energy-efficient space heating and cooling equipment.
- d) Installation of electrical hook-ups at loading dock areas.
- e) Installation of dual-paned or other energy efficient windows.
- f) Use of interior and exterior energy efficient lighting that exceeds the 2008 California Title 24 Energy Efficiency performance standards.
- g) Installation of automatic devices to turn off lights where they are not needed.
- h) Application of a paint and surface color palette that emphasizes light and off-white colors that reflect heat away from buildings.
- i) Design of buildings with “cool roofs” using products certified by the Cool Roof Rating Council, and/or exposed roof surfaces using light and off-white colors.
- j) Design of buildings to accommodate photo-voltaic solar electricity systems or the installation of photo-voltaic solar electricity systems.

Project Design Feature GHG-2

To reduce energy consumption, the Project shall install Energy Star-rated appliances.

Project Design Feature GHG-3

To reduce water consumption and the associated energy-usage, the Project shall be designed to comply with the mandatory 20 percent reduction in indoor water usage contained in the current CalGreen Code and the 30 percent reduction in outdoor water usage contained in the City’s water efficient landscape requirements. Additionally, the Project shall implement the following:

- Landscaping palette emphasizing drought tolerant plants
- Use of water-efficient irrigation techniques
- U.S. EPA Certified WaterSense labeled or equivalent faucets, high-efficiency toilets (HETs), and water-conserving showerheads

PDF GHG-4

The Project shall reduce VMT by: designing a master-planned community that creates a suburban center setting, increasing the diversity in land uses, improving the design elements to enhance walkability and connectivity as well as incorporating bicycle lanes and paths, improving the on-

site pedestrian network and connecting off-site, and providing traffic calming measures (improvements) on 50 percent of the Project's streets and intersections.

The summary of annual operational GHG emissions associated with the Project for 2020, accounting for the effectiveness of state requirements and the PDFs identified above, is shown on Table IV.H-6. The operational GHG emissions for the Project are estimated to be 36,700.83 MT per year.

Table IV.H-6
Total Project Annual (2020) GHG Emissions
With PDFs and State Requirements

Emission Source	Emissions (metric tons per year)			
	CO ₂	CH ₄	N ₂ O	Total CO ₂ E
Annual construction-related emissions amortized over 30 years	164.99	0.01	--	165.21
Area	1,284.55	0.07	0.02	1,293.05
Energy	4,620.99	0.21	0.10	4,654.96
Mobile	28,729.38	1.15	--	28,753.56
Waste	298.03	17.61	--	667.90
Water	988.46	5.90	0.17	1,163.93
Total CO₂E (All Sources)	36,700.83			
<i>Note: Totals obtained from CalEEMod™ and may not total 100% due to rounding. Model output included in Appendix IV.H.</i>				
<i>Source: Urban Crossroads, January 2013.</i>				

Project Consistency with Applicable Plans to Reduce GHG Emissions

To date, SCAQMD and CARB have not established significance thresholds for GHG emissions under the California Environmental Quality Act (CEQA) or a methodology for quantifying GHG emissions.²⁹ To evaluate the Project's GHG emissions, the Project's emissions are compared with a "Business as Usual" scenario to determine if the development is likely to be consistent with the Scoping Plan designed to implement AB 32 in California which calls for an approximate 28.5 percent reduction from "Business as Usual."

Results of the analysis indicate that the Project GHG emissions would not result in or cause a potentially significant impact on the environment. To this end, the analysis demonstrates that the Project is consistent with, or otherwise not in conflict with, recommended measures and actions in CARB's December 2008 Scoping Plan (CARB Scoping Plan). The CARB Scoping Plan establishes strategies and

²⁹ SCAQMD has adopted interim significance thresholds for industrial sources of 10,000 metric tons of carbon dioxide equivalents per year. The Board adopted these December 5, 2008. This threshold however was adopted by SCAQMD for projects where it is the lead agency and applies specifically to "industrial" projects.

measures to implement in order to achieve the GHG reductions goals set forth in the Global Warming Solutions Act of 2006 (AB 32). As shown in Table IV.H-7, the Project's GHG emissions result in an emissions reduction of 31.06 percent when compared to the BAU scenario. This reduction is consistent with the target reduction percentage of 28.5 percent based on CARB's analysis supporting AB 32.

Table IV.H-7
Summary of GHG Emissions BAU/Project

Category	CO ₂ e Emissions	
	BAU	Project
	Metric Tons per Year	
Construction Emissions	165.21	165.21
Operational Emissions	53,076.09	36,533.40
Total	53,243.52	36,700.83
<i>Project Improvement over BAU</i>	31.06%	
<i>Source: Urban Crossroads, January 2013.</i>		

Impact IV.H-2: The Project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Consistency with AB 32

As discussed previously, AB 32 requires California to reduce its GHG emissions by approximately 28.5 percent below the BAU scenario. CARB identified reduction measures to achieve this goal as set forth in the CARB Scoping Plan. Thus, projects that are consistent with the CARB Scoping Plan are also consistent with the 28.5 percent reduction below BAU required by AB 32. As shown on Table IV.H-8, the Project would result in a GHG emissions reduction of approximately 31 percent over the BAU scenario, exceeding the 28.5 percent reduction called for in the 2008 Scoping Plan. Additionally, as shown on Table IV.8, the Project would be consistent with the applicable measures from the 2008 Scoping Plan. For these reasons, the Project would be consistent with AB 32.

Consistency with SB 375

SB 375 requires local metropolitan planning agencies to prepare a SCS that demonstrates how the region will meet its GHG reduction targets through integrated land use, housing, and transportation planning. SCAG is the metropolitan planning agency for the Project area. Notably, there is nothing in SB 375 that requires a city's "land use policies and regulations...to be consistent with the regional transportation plan or an alternative planning strategy."³⁰ Nevertheless, the Project's consistency with SB 375 is considered for the purposes of CEQA.

³⁰ CA Gov't. Code §65080(b)(2)(E).

**Table IV.H-8
Project Consistency with Scoping Plan GHG Emission Reduction Strategies**

Scoping Plan Measure	Measure Number	Project Consistency
Pavley Motor Vehicle Standards (AB 1493)	T-1	The Project's employees and customers would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Limit High GWP Use in Consumer Products	H-4	The Project's employees and customers would use consumer products that would comply with the regulations that are in effect at the time of manufacture.
Motor Vehicle Air Conditioning Systems – Reduction from Non-Professional Servicing	H-1	The Project's employees and customers would be prohibited from performing air conditioning repairs and required to use professional servicing.
Tire Pressure Program	T-4	Motor vehicles driven by the Project's employees and customers and employees would maintain proper tire pressure when their vehicles are serviced.
Low Carbon Fuel Standard	T-2	Motor vehicles driven by Project's employees and customers and employees would use compliant fuels in the future.
Water Use Efficiency	W-1	The Project includes measures to minimize water use and maximize efficiency.
Green Buildings	GB-1	The Project shall be required to be constructed in compliance with state or local green building standards in effect at the time of building construction.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	Motor vehicles driven by the Project's employees and customers would comply with the leak test requirements during smog checks.
Renewable Portfolios Standard (33% by 2020)	E-3	The electricity used by businesses in the Project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
Energy Efficiency Measures (Electricity)	E-1	The Project would comply with energy efficiency standards for electrical appliances and other devices at the time of building construction.
Energy Efficiency (Natural Gas)	CR-1	The Project would comply with energy efficiency standards for natural gas appliances and other devices at the time of building construction.
Greening New Residential and Commercial Construction	GB-1	The Project's buildings would meet green building standards that are in effect at the time of design and construction.
Greening Existing Homes and Commercial Buildings	GB-1	The Project's buildings would meet retrofit standards when they become effective.
<i>Source: Urban Crossroads, January 2013.</i>		

As noted in the Regulatory Setting discussion above, the SCS distributes growth forecast data to transportation analysis zones (TAZs) for the purpose of modeling performance. The growth and land use assumptions for the SCS are to be adopted at the jurisdiction level. For Hemet, the SCS's Growth Forecast assumes 29,900 households in 2008, and anticipates 33,700 households in 2020 and 45,900 households in 2035. (SCS, Growth Forecast, p. 35) Accordingly, the Project's approximately 1,077 units and approximately 535,788 square feet of mixed-use space fit within this growth allocation.³¹

Looking at consistency from another perspective in relation to the Project's consistency with the General Plan, although the Project would increase the development as compared to the General Plan, it would reduce VMT, which is the ultimate goal of SB 375. Specifically, the current General Plan 2030 designates the majority of the site as Mixed Use and the area between Devonshire Avenue and Celeste Road as Low Density Residential, which allows 2.1 to 5.0 dwelling units per acre. The Project includes General Plan amendments to (1) amend the development capacity allowed in the Florida Avenue Commercial Mixed Use Area #1 as shown on Table 2-3 and as described in Section 2.6.4 of the 2030 General Plan; (2) increase the base maximum allowed density north of Devonshire Avenue (Planning Areas 9 and 10) from a maximum of 5.0 du/acre to 6.0 du/acre; and (3) increase the allowed maximum density in Planning Area 9 up to 8.0 du/acre if necessary to accommodate the potential transfer of residential units in the event the Hemet Unified School District does acquire the School Overlay (Planning Area 10). The proposed increase in residential along with the decrease in commercial retail and office results in a net decrease in the number of vehicle trips anticipated to be generated by the Project as compared to the number of vehicle trips forecasted for the Project area based on the intensity of uses currently allowed within the Florida Avenue Commercial Mixed-Use Area #1 of the General Plan. Accordingly, while the Project includes General Plan amendments, the decrease in number of vehicle trips demonstrates consistency with SB 375. Furthermore, the Project would reduce VMT by improving the design elements to enhance walkability and connectivity, as well as incorporating bicycle lanes and paths improving the on-site pedestrian network and connecting off-site. Based on the foregoing analysis, the Project would be consistent with SB 375. Therefore, for all the reasons stated above, Project impacts related GHG emissions would not be cumulatively considerable.

MITIGATION MEASURES

With implementation of the PDFs referenced above, impacts related to GHG emissions would be less than significant. As stated previously, the PDFs are included here as mitigation measures.

³¹ *The Project as described in Section III (Project Description), includes development of 954 residential dwelling units. However, for the purposes of providing a conservative analysis, the analysis in this section assumes development of 1,077 residential dwelling units. (See also, Section III [Project Description].)*

Operational Activity PDFs

H-1: Prior to the issuance of building permits, the Project applicant shall submit energy usage calculations to the Planning Division showing that the Project is designed to achieve 10 percent efficiency beyond the 2008 California Building Code Title 24 requirements (in the aggregate). Examples of measures that reduce energy consumption include, but are not limited to, the following:

- a) Increase in insulation such that heat transfer and thermal bridging is minimized.
- b) Limit air leakage through the structure and/or within the heating and cooling distribution system.
- c) Use of energy-efficient space heating and cooling equipment.
- d) Installation of electrical hook-ups at loading dock areas.
- e) Installation of dual-paned or other energy efficient windows.
- f) Use of interior and exterior energy efficient lighting that exceeds the 2008 California Title 24 Energy Efficiency performance standards.
- g) Installation of automatic devices to turn off lights where they are not needed.
- h) Application of a paint and surface color palette that emphasizes light and off-white colors that reflect heat away from buildings.
- i) Design of buildings with “cool roofs” using products certified by the Cool Roof Rating Council, and/or exposed roof surfaces using light and off-white colors.
- j) Design of buildings to accommodate photo-voltaic solar electricity systems or the installation of photo-voltaic solar electricity systems.

H-2: To reduce energy consumption, the Project shall install Energy Star-rated appliances.

H-3: To reduce water consumption and the associated energy-usage, the Project shall be designed to comply with the mandatory 20 percent reduction in indoor water usage contained in the current CalGreen Code and the 30 percent reduction in outdoor water usage contained in the City’s water efficient landscape requirements. Additionally, the Project shall implement the following:

- Landscaping palette emphasizing drought tolerant plants.
- Use of water-efficient irrigation techniques.

- U.S. EPA Certified WaterSense labeled or equivalent faucets, high-efficiency toilets (HETs), and water-conserving showerheads.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts related to GHG emissions would be less than significant.