5.7 GREENHOUSE GAS EMISSIONS

This section evaluates the potential for the San Bernardino Countywide Plan (proposed Project or Countywide Plan) to cumulatively contribute to greenhouse gas (GHG) emissions. Because no single site-specific development project over the time frame of the Countywide Plan is large enough individually to result in a measurable increase in global concentrations of GHG emissions, climate change impacts of the program-level Countywide Plan are considered on a cumulative basis. This quantitative analysis is based on the methodology recommended by the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB), and ICLEI's U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions.

GHG emissions are based on the following technical report:

- *San Bernardino County Community and Municipal Greenhouse Gas Inventory* (Baseline Inventory), ICF International, October 2017.

The Baseline Inventory is included in Appendix C of this Draft EIR. The emissions forecast is based on the vehicle miles traveled (VMT) using the origin-destination methodology provided by Fehr and Peers for the on-road transportation emissions section and emissions increases in the non-transportation sectors associated with population and employment in the unincorporated County. The GHG emissions forecast is included in Appendix B, *Air Quality and Greenhouse Gas Data*, of this Draft EIR.

Terminology

The following are definitions for terms used throughout this section.

- **Greenhouse gases (GHG).** Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.
- **Global warming potential (GWP).** Metric used to describe how much heat a molecule of a greenhouse gas absorbs relative to a molecule of carbon dioxide (CO_2) over a given period of time (20, 100, and 500 years). CO_2 has a GWP of 1.
- **Carbon dioxide-equivalent (CO_2e).** The standard unit to measure the amount of greenhouse gases in terms of the amount of CO_2 that would cause the same amount of warming. CO_2e is based on the GWP ratios between the various GHGs relative to CO_2.
- **$MTCO_2e$.** Metric ton of CO_2e.
- **$MMTCO_2e$.** Million metric tons of CO_2e.

5.7.1 Environmental Setting

5.7.1.1 GREENHOUSE GASES AND CLIMATE CHANGE

Many scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed in the 20th and 21st centuries. Other GHGs identified by the IPCC that contribute to global warming to a lesser extent are nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[1,2] The major GHGs are briefly described.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in landfills and water treatment facilities.

- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during the combustion of fossil fuels and solid waste.

- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high GWP gases.

    - ***Chlorofluorocarbons (CFCs)*** are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down the ozone layer. These gases are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

[1] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant because it is considered part of the feedback loop rather than a primary cause of change.

[2] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2017a). However, state and national GHG inventories do not include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

- ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with hydrofluorocarbons (HFCs), to ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high GWP.

- ***Sulfur Hexafluoride (SF_6)*** is a colorless gas soluble in alcohol and ether, and slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

- ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although they are ozone-depleting substances, they are less potent than CFCs. They have been introduced as temporary replacements for CFCs.

- ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs. (IPCC 1995; USEPA 2018)

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 5.7-1, *GHG Emissions and their Relative Global Warming Potential Compared to CO_2*. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's *Fifth Assessment Report* (AR5) GWP values for CH_4, a project that generates 10 MT of CH_4 would be equivalent to 280 MT of CO_2.

Table 5.7-1 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Second Assessment Report Global Warming Potential Relative to CO_2[1]	Fourth Assessment Report Global Warming Potential Relative to CO_2[1]	Fifth Assessment Report Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	1	1	1
Methane[2] (CH_4)	21	25	28
Nitrous Oxide (N_2O)	310	298	265

Source: IPCC 1995, 2007, 2013.
Notes:
[1] Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.
[2] The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

California's GHG Sources and Relative Contribution

In 2018, the statewide GHG emissions inventory was updated for 2000 to 2016 emissions using the GWPs in IPCC's AR4.[3] Based on these GWPs, California produced 429.4 $MMTCO_2e$ GHG emissions in 2016. California's transportation sector was the single largest generator of GHG emissions, producing 40.5 percent of the state's total emissions. Industrial sector emissions made up 23.4 percent, and electric power generation made up 16.1 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (12.0 percent), agriculture and forestry (7.9 percent) and other (solvents and chemicals) at 0.2 percent (CARB 2018b).

California's GHG emissions have followed a declining trend since 2007. In 2016, emissions from routine GHG emitting activities statewide were 429 $MMTCO_2e$, 12 $MMTCO_2e$ lower than 2015 levels or 12 $MMTCO_2e$ lower than 2015 levels. This represents an overall decrease of 13 percent since peak levels in 2004 and 2 $MMTCO_2e$ below the 1990 level and the state's 2020 GHG target. During the 2000 to 2016 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14.0 $MTCO_2e$ per capita to 10.8 $MTCO_2e$ per capita in 2016, a 23 percent decrease. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product [GDP]) is declining, representing a 38 percent decline since the 2001 peak, while the state's GDP has grown 41 percent during this period (CARB 2018c).

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The amount of CO_2 in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation (IPCC 2007). These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Although skepticism persists in some circles, the consensus of scientific research holds that human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006). In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime (IPCC 2007).

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by

[3] Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (2006).

varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

Potential Climate Change Impacts for California

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada (CCCC 2012). The years from 2014 through 2016 have shown unprecedented temperatures with 2014 being the warmest (OEHHA 2018). By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1 to 8.6°F, depending on emissions levels (CCCC 2012).

In California and western North America, observations of the climate indicate: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) advanced shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms (CAT 2006). Overall, California has become drier over time with five of the eight years of severe to extreme drought occurring between 2007 and 2016, with unprecedented dry years occurring in 2014 and 2015 (OEHHA 2018). Statewide precipitation has become increasingly variable from year to year with the driest consecutive four years occurring from 2012 to 2015 (OEHHA 2018). According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5.7-1), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are shown in Table 5.7-2, *Summary of GHG Emissions Risks to California*, and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy.

Table 5.7-2 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Fewer extremely cold nights Poor air quality made worse Higher temperatures increase ground-level ozone levels
Water Resources Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: CEC 2006; CEC 2009; CCCC 2012; CNRA 2014.

Specific climate change impacts that could affect the proposed Project include:

- **Water Resources Impacts.** By late this century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. This drying trend is caused by an apparent decline in the frequency of rain and snowfall. Even in projections with relatively little or no decline in precipitation, central and southern parts of the state are expected to be drier from the warming effects alone because the spring snowpack will melt sooner, and the moisture in soils will evaporate during long dry summer months (CCCC 2012).

- **Wildfire Risks.** Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires statewide is estimated to increase by 58 percent to 128

percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location (CCCC 2012).

- **Health Impacts.** Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession, and simultaneous heat waves in several regions throughout the state. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California (CCCC 2012).

- **Increase Energy Demand.** Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the state will drive up the demand for cooling in the increasingly hot and longer summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process at higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 percent to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand (CCCC 2012).

5.7.1.2 REGULATORY BACKGROUND

This section describes the federal, state, and local regulations applicable to GHG emissions.

Federal Laws

The U.S. Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 US Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission reduction requirements, but allowed the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (USEPA 2009).

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the proposed project's GHG emissions inventory because they constitute the majority of GHG emissions; per SCAQMD guidance, they are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

US Mandatory Reporting Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 $MTCO_2e$ or more per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2010/2012)

The current Corporate Average Fuel Economy standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers were required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be deemed in compliance with state requirements. The federal government issued new standards in 2012 for model years 2017 to 2025 that will require a fleet average of 54.5 miles per gallon in 2025. However, the EPA is reexamining the 2017–2025 emissions standards.

EPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new, large, stationary sources of emissions, such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. However, the EPA is reviewing the Clean Power Plan under President Trump's Energy Independence Executive Order.

State Laws

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Orders S-03-05 and B-30-15; Assembly Bill 32 (AB 32); Senate Bill 32 (SB 32); and SB 375.

Executive Order S-03-05

Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for the state:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Assembly Bill 32, the Global Warming Solutions Act (2006)

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in AB 32, the Global Warming Solutions Act. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05.

CARB 2008 Scoping Plan

The final Scoping Plan was adopted by the California Air Resources Board (CARB) on December 11, 2008. The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the state (CARB 2008). In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 $MTCO_2e$ per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

First Update to the Scoping Plan

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan, adopted May 22, 2014, highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, are slightly higher at 431 $MMTCO_2e$ (CARB 2014).

As identified in the Update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the update also addresses the state's longer-term GHG goals in a post-2020 element. The post-2020 element provides a high level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the state to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals (CARB 2014). CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit (CARB 2014).

Executive Order B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions in the state to 40 percent below 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed Senate Bill 32 and Assembly Bill 197, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

2017 Climate Change Scoping Plan

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 24, 2017, CARB approved the 2017 Climate Change Scoping Plan Update, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030 (CARB 2017b).

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning, to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and toxic air contaminants emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZE buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZE trucks.
- Implementing the proposed short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink..

In addition to these statewide strategies, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the state's long-term GHG reduction goals and identified local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB

recommends that local governments evaluate and adopt robust and quantitative locally appropriate goals that align with the statewide per capita targets and the state's sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the state's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population)—consistent with the Scoping Plan and the state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from VMT, and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The Scoping Plan scenario is set against what is called the business-as-usual yardstick—that is, what would the GHG emissions look like if the state did nothing at all beyond the existing policies that are required and already in place to achieve the 2020 limit, as shown in Table 5.7-3, *2017 Climate Change Scoping Plan Emissions Reductions Gap*. It includes the existing renewables requirements, advanced clean cars, the "10 percent" LCFS, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 5.7-3 2017 Climate Change Scoping Plan Emissions Reductions Gap

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	389
With Known Commitments	320
2030 GHG Target	**260**
Gap to 2030 Target	**60**

Source: CARB 2017b.

Table 5.7-4, *2017 Climate Change Scoping Plan Emissions Change by Sector*, provides estimated GHG emissions by sector, compared to 1990 levels, and the range of GHG emissions for each sector estimated for 2030.

Table 5.7-4 2017 Climate Change Scoping Plan Emissions Change by Sector

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24 to 25	-8% to -4%
Residential and Commercial	44	38 to 40	-14% to -9%
Electric Power	108	30 to 53	-72% to -51%
High GWP	3	8 to 11	267% to 367%
Industrial	98	83 to 90	-15% to -8%
Recycling and Waste	7	8 to 9	14% to 29%
Transportation (including TCU)	152	103 to 111	-32% to -27%
Net Sink1	-7	TBD	TBD
Sub Total	431	294 to 339	-32% to -21%
Cap-and-Trade Program	NA	34 to 79	NA
Total	**431**	**260**	**-40%**

Source: CARB 2017b.
Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.
[1] Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 requires the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the *Final Proposed Short-Lived Climate Pollutant Strategy*, which identifies the state's approach to reducing sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use (CARB 2017a). In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

Senate Bill 375

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Southern California Association of Governments (SCAG) is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San

Bernardino, Riverside, Ventura, and Imperial. Pursuant to the recommendations of the Regional Transportation Advisory Committee (RTAC), CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target.

SCAG's 2016-2040 RTP/SCS

SB 375 requires the MPOs to prepare a sustainable communities strategy in their regional transportation plan. For the SCAG region, the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted on April 7, 2016, and is an update to the 2012 RTP/SCS (SCAG 2016). In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

SCAG's targets for the 2016-2040 RTP/SCS were 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). The 2016-2040 RTP/SCS projects that the SCAG region will meet or exceed the passenger per capita targets set in 2010 by CARB. It is projected that VMT per capita in the region for year 2040 would be reduced by 7.4 percent with implementation of the 2016-2040 RTP/SCS compared to a no-plan year 2040 scenario. Under the 2016-2040 RTP/SCS, SCAG anticipates lowering GHG emissions 8 percent below 2005 levels by 2020, 18 percent by 2035, and 21 percent by 2040. The 18 percent reduction by 2035 over 2005 levels represents a 2 percent increase in reduction compared to the 2012 RTP/SCS projection. Overall, the SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around high quality transit areas and livable corridors, and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles (SCAG 2016). However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency.

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018. The updated targets become effective on October 1, 2018; and are therefore, applicable for the 2019 RTP/SCS update being initiated by SCAG. CARB's updated SB 375 targets for the SCAG region are an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent) (CARB 2018).

The targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies, and any potential future state strategies, such as statewide road user pricing. The proposed targets call for greater per-capita GHG emission reductions from SB 375 than are currently in place, which for 2035 translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCS to achieve the

SB 375 targets. CARB foresees that the additional GHG emissions reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies (CARB 2018).

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards under *Federal Laws*, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less GHGs and 75 percent less smog-forming emissions.

Executive Order S-01-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08

A major component of California's Renewable Energy Program is the renewables portfolio standard (RPS) established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the state's renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects, because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon) was signed into law September 2015 and established tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Executive Order B-55-18 and SB 100

SB 100 and Executive Order B-55-18 were signed by Governor Brown on September 10, 2018. Under the existing RPS, 25 percent of retail sales are required to be from renewable sources by December 31, 2016, 33 percent by December 31, 2020, 40 percent by December 31, 2024, 45 percent by December 31, 2027, and 50 percent by December 31, 2030. SB 100 raises California's RPS requirement to 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030.

In addition to targets under AB 32 and SB32, Executive Order B-55-18 establishes a carbon neutrality goal for the state of California by 2045; and sets a goal to maintain net negative emissions thereafter. The Executive Order directs the California Natural Resources Agency, CalEPA, the Department of Food ang Agriculture, and CARB to include sequestration targets in the Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are ZE by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions 80 percent below 1990 levels.

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On June 10, 2015, the CEC adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards, which were recently adopted on May 9, 2018, goes into effect starting January 1, 2020.

The 2016 Standards improve upon the previous 2013 Standards for new construction of and additions and alterations to residential and nonresidential buildings. Under the 2016 Standards, residential and nonresidential buildings are generally 28 and 5 percent more energy efficient than the 2013 Standards, respectively (CEC 2015).

Although the 2016 standards do not achieve zero net energy, they get very close to the state's goal and take important steps toward changing residential building practices in California.

The 2019 standards move towards cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multi-family buildings of three stories and fewer. Four key areas the 2019 standards will focus on include 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements (CEC 2018a). Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards while single-family homes will be 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018b).

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air contaminants.[4] The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011. The 2016 Standards became effective on January 1, 2017. The CEC adopted the 2019 CALGreen on May 9, 2018. The 2019 CALGreen standards become effective January 1, 2020.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste Regulations

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code §§ 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

[4] The green building standards became mandatory in the 2010 edition of the code.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code §§ 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Section 5.408 of the 2016 CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

In October of 2014 Governor Brown signed AB 1826 requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also required that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

Water Efficiency Regulations

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or an equivalent. AB 1881 also requires the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Local Laws

Unincorporated County GHG Reduction Plan

The County of San Bernardino adopted the *San Bernardino County GHG Reduction Plan* (GHG Plan) in September 2011 following environmental review. The County's GHG Plan is an implementation tool of the General Plan that provides greater specificity on how the County will attain the various goals and policies of the General Plan. The 2011 GHG Plan is a result of a Settlement Agreement with the California Attorney General following adoption of the County's previous 2007 General Plan. The GHG Plan provides a comprehensive set of actions

to reduce the County's community (external) and municipal (internal) GHG emissions to achieve a GHG reduction goal of 15 percent below 2005 levels by 2020, consistent with the GHG reduction target of AB 32 (San Bernardino 2011).

GHG Development Review Processes

Section 15183.5 of the CEQA Guidelines allows lead agencies to mitigate the significant effects of GHG emissions at a programmatic level, so long as they meet the criteria outlined in subsection 15183.5(b)(1)(A) through (F). Projects that are consistent with the "qualified" plan are eligible for CEQA streamlining. The County's GHG Plan is a "qualified" plan to achieve the near-term target of AB 32 for 2020. The County of San Bernardino developed a GHG Development Review Process (DRP), which is used by County staff when reviewing discretionary projects. If individual development projects are consistent with the County' GHG Plan—and have a buildout date in 2020 or early—they qualify for streamlining under Section 15183.5 of the CEQA Guidelines. The DRP includes a uniform set of performance standards for all development projects and screening tables for projects that exceed 3,000 $MTCO_2e$ to mitigate GHG emissions impacts. Projects that emit 3,000 $MTCO_2e$ or more per year are anticipated to reduce a total of approximately 150,600 $MTCO_2e$ per year as compared to the 2020 unmitigated scenario (San Bernardino 2011).

5.7.1.3 EXISTING CONDITIONS

San Bernardino County is the largest county in the United States. There are 24 incorporated areas within the County, as well as many other census-designated places and unincorporated communities. The largest employers in the County are in the industries of railroads, schools/universities, hospitals, and state and county government. In 2014, the unincorporated County had an estimated 325,064 people and 57,425 employees (ICF 2017). Table 5.7-5, *County of San Bernardino Community GHG Emissions Inventory*, shows the existing emissions in the unincorporated County of San Bernardino. Although a direct comparison between the 2007 inventory and the 2014 inventory does not accurately portray the actual difference in emissions because of substantial changes in methodology, Table 5.7-5, generally shows that community GHG emissions in the incorporated County of San Bernardino are on a declining trend.

Table 5.7-5 County of San Bernardino Community GHG Emissions Inventory

Sector	2007 GHG Emissions $MTCO_2e$/Year	2014 GHG Emissions $MTCO_2e$/Year	Percent of Total 2014	Percent Change 2007–2014[1]
Community Inventory				
Building Energy	1,280,931	875,681	29.7%	-32%
On-Road Transportation	1,631,666	1,188,893	40.3%	-27%
Off-Road Vehicles and Equipment	157,185	48,442	1.6%	-69%
Solid Waste/Landfills[2]	213,191	468,140	15.9%	120%
Water Use	10,696	89,694	3.0%	739%
Wastewater Treatment	27,994	65,335	2.2%	133%
Refrigerants	Not included	146,823	5.0%	N/A
Agriculture	64,619	68,752	2.3%	6%
Residential Fuel Use	346	1,099	0.04%	218%
Total	3,386,628	2,952,859	100%	-13%
$MTCO_2e$/Year/SP	10.2 $MTCO_2$/SP	7.7 $MTCO_2$/SP	—	-25%
Industrial Sources				
Stationary Sources	137,174	2,208,124	—	1510%
Cement Production	2,729,261	2,308,909	—	-15%

Source: ICF 2017

Notes: Totals may not add to 100 percent due to rounding. Based on GWPs in the IPCC Fifth Assessment Report (AR5).

[1] Some of the changes reflect differences in inventory methodology as opposed to real-world changes in emissions.

[2] The solid waste sector includes Municipal emissions associated with CH_4 emissions released directly from County-owned landfills from waste disposed of by incorporated cities and the unincorporated County and waste disposal from unincorporated areas sent to non-County landfills. Emissions from waste generated by the community are included as a separate item only for the portion of waste that is sent to landfills not operated by the County. For all other waste generated by the community and sent to landfills operated by the County, the decomposition emissions are included in the landfill component of the waste sector.

[3] In 2014, the unincorporated San Bernardino County had an estimated 325,064 people and 57,425 employees.

The largest GHG emissions sectors in the unincorporated County of San Bernardino are on-road transportation, building energy, and solid waste.

- On-road transportation is the largest emission sector for the County's community inventory (40 percent of community emissions).
- Building energy emissions are approximately 30 percent of total emissions, which is the second-largest sector. In 2014, the top three consumers of electricity were the industrial (55 percent), residential (31 percent), and commercial (14 percent) sectors. For natural gas, the three largest consumers are residential (70 percent), commercial (22 percent), and industrial (6 percent).
- Solid waste emissions are the third-largest sector of the Community inventory, representing nearly 16 percent of the County's total emissions. Waste generated in the County (incorporated cities and unincorporated County) in 2014 includes approximately 102,000 tons of residential waste and nearly 141,000 tons of non-residential waste sent to 23 landfills operated by the County and two landfills not operated by the County (ICF 2017).

Other sectors represent a much smaller proportion of the unincorporated County of San Bernardino's GHG emissions inventory.

- Refrigerant use is the fourth largest sector in the County, resulting in approximately 5 percent of the community inventory emissions.

- Water use is 3 percent of GHG emissions. The unincorporated County used over 32 billion gallons of water in 2014, resulting in over 345 million kilowatt hours (kWh) of electricity consumed to treat, convey, and distribute water.

- Wastewater generation is 2.2 percent of GHG emissions. Electricity consumption associated with water treatment plants and wastewater conveyance is estimated to be over 194 million kWh in 2014. Electricity consumption accounts for approximately 78 percent of wastewater treatment emissions. Approximately 6 percent of the wastewater treatment sector is the result of fugitive emissions directly emitted from wastewater at treatment plants, while 16 percent of this sector is the result of direct emissions from septic tank systems in the County (i.e., residences not connected to a central sewer system).

- Agriculture is 2.3 percent of total community emissions. Emissions emitted directly from livestock and their manure are the predominant emissions source for this sector (approximately 96 percent of agriculture emissions). These emissions include CH_4 and N_2O emitted directly from cows, chickens, turkeys, and their manure. There are a wide variety of fruit, vegetable, and grain crops in the County that would require an estimated 1.3 million pounds of fertilizer in 2014. Emissions resulting from the use of fertilizer on crops in the County represent a smaller portion of agriculture emissions (approximately 4 percent).

- Off-road vehicles and equipment (e.g., operating lawnmowers, bulldozers) contribute less than 2 percent of GHG emissions. Off-road vehicles and equipment in the County consumed an estimated 4.9 million gallons of fuel in 2014.

- Non-building sources of energy are less than 0.5 percent of the total community emissions. The majority of energy consumed among these sources is from wood (81 percent); liquid petroleum gas (LPG) and kerosene represent smaller portions (19 percent and less than 1 percent, respectively) (ICF 2017).

5.7.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

5.7.2.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

SCAQMD has adopted a significance threshold of 10,000 $MTCO_2e$ per year for permitted (stationary) sources of GHG emissions for which SCAQMD is the designated lead agency. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD convened a

GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) in September 2010, SCAQMD identified a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency (SCAQMD 2010).

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (e.g., city or county), project-level and cumulative GHG emissions are less than significant.

- **Tier 3.** If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.

  For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. Project-related GHG emissions include on-road transportation, energy use, water use, wastewater generation, solid waste disposal, area sources, off-road emissions, and construction activities. The SCAQMD Working Group identified that because construction activities would result in a "one-time" net increase in GHG emissions, construction activities should be amortized into the operational phase GHG emissions inventory based on the service life of a building. For buildings in general, it is reasonable to look at a 30-year time frame, since this is a typical interval before a new building requires the first major renovation. SCAQMD identified a screening-level threshold of 3,000 $MTCO_2e$ annually for all land use types or the following land-use-specific thresholds: 1,400 $MTCO_2e$ for commercial projects, 3,500 $MTCO_2e$ for residential projects, and 3,000 $MTCO_2e$ for mixed-use projects. These bright-line thresholds are based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions:

- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

  SCAQMD has identified an efficiency target for projects that exceed the bright-line threshold: a 2020 efficiency target of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan-level projects (e.g., general plans). Service population is generally defined as the sum of residential and employment population of a project. The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.[5]

[5] SCAQMD took the 2020 statewide GHG reduction target for "land use only" GHG emissions sectors and divided it by the 2020 statewide employment for the land use sectors to derive a per capita GHG efficiency metric that coincides with the GHG reduction targets of AB 32 for year 2020.

5.7.2.2 MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

The North Desert and East Desert Regions of San Bernardino County are within the Mojave Desert Air Basin. Project within this air basin rely on guidance and methodologies recommended in MDAQMD's *CEQA and Federal Conformity Guidelines* (2016). MDAQMD's significance criteria are shown in Table 5.7-6, *MDAQMD Greenhouse Gas Significance Thresholds*. The thresholds identified in this table are applied to both construction and operational phases of the project regardless of whether they are stationary or mobile sources, resulting in a conservative estimate of air quality impacts of the project. Projects with phases shorter than one year (e.g., construction activities) should be compared to the daily value.

Table 5.7-6 MDAQMD Greenhouse Gas Significance Thresholds

Annual (tons/year)	Daily[1] (lbs/day)
100,000 (90,718 $MTCO_2e$/year)	548,000

Source: MDAQMD 2016.
[1] Project with phases shorter than one year, including construction activities, can be compared to the daily value.

5.7.2.3 POST-2020 EFFICIENCY TARGETS

For projects that would be implemented beyond year 2020, the GHG emissions reduction target is extrapolated based on the 2030 goal of SB 32 and the 2050 climate stabilization goals of Executive Order S-03-05. The plan-level GHG threshold is based on the trajectory needed as shown in Table 5.7-7, *Post-2020 GHG Reduction Targets*, to achieve the year 2030 GHG reduction target under SB 32 (40 percent below 1990 levels by 2030) and Executive Order S-03-05 (80 percent below 1990 levels by 2050) for the horizon year of the projects.

As shown in the table, the 2040 GHG estimated plan-level efficiency target would be 2.7 $MTCO_2e$ per service population per year. The proposed Project would be deemed to have a significant GHG emissions impact if it does not meet this efficiency target. Furthermore, per the California Supreme Court ruling in *Cleveland National Forest Foundation (CNFF) v. San Diego Association of Governments (SANDAG)*, as data and methods become available, projects should evaluate consistency in meeting the year 2050 GHG reduction goal established under Executive Order S-03-05. To achieve the climate stabilization goals of S-03-05, the Countywide Plan would need to achieve an efficiency of 1.3 $MTCO_2e$/SP by 2050.

Table 5.7-7 Post-2020 GHG Reduction Targets

GHG Sector[1]	GHG Efficiency Target
Scoping Plan 2030 Target	**260 MMTCO$_2$e**
2030 Population[2]	43,939,250
2030 Employment[3]	16,454,761
2030 Service Population	60,394,011
2030 Efficiency Target	**4.3 MTCO$_2$e/SP**
Scoping Plan 2050 Target	**86 MMTCO$_2$e**
2050 Population[2]	49,077,801
2050 Employment[3]	19,579,840
2050 Service Population	**68,657,641**
2050 Efficiency Target	**1.3 MTCO$_2$e/SP**
Estimated 2040 Target[4]	**173 MMTCO$_2$e**
2040 Population[2]	46,804,202
2040 Employment[3]	17,973,632
2040 Service Population	64,777,834
2040 Efficiency Target	**2.7 MTCO$_2$e/SP**

Sources:
[1] CARB 2017c.
[2] CDOF 2018.
[3] Caltrans 2017.
[4] The 2040 Efficiency target is based on interpolating the 2030 land use emissions target (40 percent below 1990 levels by 2030) and the 2050 land use emissions target (80 percent below 1990 levels by 2050), which equates to approximately 60 percent below 1990 levels by 2040.

5.7.3 Regulatory Requirements and General Plan Policies

5.7.3.1 REGULATORY REQUIREMENTS

RR GHG-1 New buildings are required to achieve the current California Building Energy and Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2016 Building Energy Efficiency Standards and CALGreen are effective starting on January 1, 2017 while the 2019 standards are effective starting January 1, 2020. The Building Energy Efficiency Standards and CALGreen are updated tri-annually, and may ultimately require zero net energy (ZNE) construction.

RR GHG-2 Construction activities are required to adhere to Title 13 California Code of Regulations (CCR) Section 2499, which requires that nonessential idling of construction equipment is restricted to five minutes or less.

RR GHG-3 New development in the unincorporated County of San Bernardino is required to comply with the San Bernardino County GHG Reduction Plan. The 2011 GHG Reduction Plan also directs the County to implement GHG reduction measures to align the County with the GHG reduction goals of AB 32.

RR GHG-4 The County of San Bernardino requires land uses in the unincorporated area to adhere to the state's Model Water Efficient Landscape Ordinance.

RR GHG -5 The County of San Bernardino adheres to the requirements of AB 341, AB 1826, and SB 1383. The County of San Bernardino Solid Waste Management Division manages landfill capacity and implements programs to divert waste from landfills, which includes recycling and organics/food waste collection. AB 341 requires business that generate 4 cubic yards of waste or more per week (including multifamily with five or more units) to arrange for recycling services. AB 1826 requires business to recycle their organic waste depending on how much waste they generate per week and also requires the County to implement an organic waste recycling program for business (including multifamily of five or more uses). SB 1383 requires that operates of landfills achieve reductions in short-lived climate pollutants and establishes a target to achieve a 50 percent reduction in statewide disposal of organic waste from 2014 levels by 2020 and 75 percent reduction from 2014 levels by 2025. AB 1383 also establishes an additional target that not less than 20 percent of currently disposed edible food is recovered for human consumption by 2025.

5.7.3.2 POLICY PLAN

The Countywide Plan Policy Plan includes goals and policies that support the state's GHG reduction goals:

Policy NR-1.1 **Land use.** We promote compact and transit-oriented development countywide and regulate the types and locations of development in unincorporated areas to minimize vehicle miles traveled and greenhouse gas emissions.

Policy NR-1.3 **Coordination on air pollution.** We collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source.

Policy NR-1.7 **Greenhouse gas reduction targets.** We strive to meet the 2040 and 2050 greenhouse gas emission reduction targets in accordance with state law.

Policy NR-1.8 **Construction and operations.** We invest in County facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage County contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.

Policy NR-1.9 **Building design and upgrades.** We use the CALGreen Code to meet energy efficiency standards for new buildings and encourage the upgrading of existing buildings to incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions.

The Countywide Plan includes goals and policies that encompass multi-modal and active transit improvements within the unincorporated communities:

Policy TM-3.1	**VMT Reduction.** We promote new development that will reduce household and employment VMT relative to existing conditions..
Policy TM-3.2	**Trip reduction strategies.** We support the implementation of transportation demand management techniques, mixed use strategies, and the placement of development in proximity to job and activity centers to reduce the number and length of vehicular trips.
Policy TM-3.3	**First mile/last mile connectivity.** We support strategies that strengthen first/last mile connectivity to enhance the viability and expand the utility of public transit in unincorporated areas and countywide.
Policy TM-1.9	**New transportation options.** We support the use of transportation network companies, autonomous vehicles, micro transit, and other emerging transportation options that reduce congestion, minimize land area needed for roadways, create more pedestrian- and bicycle-friendly streets, reduce VMT, or reduce dependence on privately-owned vehicles.
Policy TM-4.1	**Complete streets network.** We maintain a network of complete streets within mobility focus areas that provide for the mobility of all users of all ages and all abilities, while reflecting the local context.
Policy TM-4.2	**Complete streets improvements.** We evaluate the feasibility of installing elements of complete street improvements when planning roadway improvements in mobility focus areas, and we require new development to contribute to complete street improvements in mobility focus areas.
Policy TM-4.3	**Funding.** We partner with SBCTA, Caltrans, and local agencies to fund active transportation systems in the county. We encourage unincorporated communities to apply for funding and cooperate with them in their funding applications for active transportation improvements that are identified in a non-motorized transportation plan that is accepted or adopted by the County.
Policy TM-4.4	**Transit access for residents in unincorporated areas.** We support and work with local transit agencies to generate a public transportation system, with fixed routes and on-demand service, that provide residents of unincorporated areas with access to jobs, public services, shopping, and entertainment throughout the county.
Policy TM-4.5	**Transit access to job centers and tourist destinations.** We support and work with local transit agencies to generate public transportation systems that provide access to job centers and reduce congestion in tourist destinations in unincorporated areas.
Policy TM-4.6	**Transit access to public service, health, and wellness.** In unincorporated areas where public transit is available, we prefer new public and behavioral health facilities, other public facilities and services, education facilities, grocery stores, and pharmacies

to be located within one-half mile of a public transit stop. We prefer to locate new County health and wellness facilities within one-half mile of a public transit stop in incorporated jurisdictions. We encourage public K-12 education and court facilities to be located within one-half mile of public transit.

Policy TM-4.7 **Regional bicycle network.** We work with SBCTA and other local agencies to develop and maintain a regional backbone bicycle network.

Policy TM-4.8 **Local bicycle and pedestrian networks.** We support local bike and pedestrian facilities that serve unincorporated areas, connect to facilities in adjacent incorporated areas, and connect to regional trails. We prioritize bicycle and pedestrian network improvements that provide safe and continuous pedestrian and bicycle access to mobility focus areas, schools, parks, and major transit stops.

Policy TM-4.9 **Bike and pedestrian safety.** We promote pedestrian and bicyclist safety by providing separated pedestrian and bike crossings when we construct or improve bridges over highways, freeways, rail facilities, and flood control areas. We monitor pedestrian and bicycle traffic accidents and promote safety improvements in unincorporated high-accident areas.

Policy TM-4.10 **Shared parking.** We support the use of shared parking facilities that provide safe and convenient pedestrian connectivity between adjacent uses.

Policy TM-4.11 **Parking areas.** We require publicly accessible parking areas to ensure that pedestrians and bicyclists can safely access the site and onsite businesses from the public right-of-way.

Policy TM-5.1 **Efficient goods movement network.** We advocate for the maintenance of an efficient goods movement network in southern California.

The Renewable Energy and Conservation Element includes goals and policies that ensure that the County pursues the benefits of renewable energy to reduce GHG emissions and electricity use:

Policy RE-1.1 **GHG Reduction Plan.** We implement the energy conservation and efficiency measures identified in the County of San Bernardino Greenhouse Gas Emissions Reduction Plan.

Policy RE-1.2 **Optimized efficiency.** We optimize energy efficiency in the built environment.

Policy RE-1.3 **Local benefits.** We promote the local economic benefits of energy efficiency retrofits.

Policy RE-1.4 **Energy conservation.** We encourage residents and businesses to conserve energy.

Policy RE-2.1	**Types of renewable energy systems.** We support solar energy generation, solar water heating, wind energy and bioenergy systems that are consistent with the orientation, siting and environmental compatibility policies of the General Plan.
Policy RE-2.2	**Energy storage.** We promote use of energy storage technologies that are appropriate for the character of the proposed location.
Policy RE-2.3	**Emerging technologies.** We encourage the use of feasible emerging and experimental renewable energy technologies that are compatible with County regulatory standards.
Policy RE-2.4	**Access to renewable energy.** We identify and prioritize programs that support cost-effective and universal access to renewable energy.
Policy RE-2.5	**Zero net energy.** We support renewable energy systems that accelerate zero net energy through innovative design, construction, and operations of residences, businesses, and institutions that are grid-neutral and independent of centralized energy infrastructure.
Policy RE-2.6	**Energy efficiency.** We encourage energy efficiency through appropriate renewable energy systems.
Policy RE-3.1	**Onsite accessory systems.** We prioritize, facilitate, and encourage onsite accessory renewable energy generation to serve the unincorporated county, with a primary focus on rooftop and parking lot solar energy generation.
Policy RE-3.2	**Locally-focused service.** We encourage neighborhood- and community-serving renewable energy generation that primarily serves local uses in the county.
Policy RE-3.3	**Adaptive and resilient energy infrastructure.** We promote adaptive distributed energy infrastructure that sustains local communities and improves resiliency to grid failures and increasing energy prices.
Policy RE-3.4	**Sphere standards.** We require renewable energy facilities developed in spheres of influence of incorporated cities to be compatible and consistent with standards of the sphere cities.
Policy RE-3.5	**Local input.** We incorporate resident, business owner, and stakeholder input into the development and implementation of County policies for renewable energy.
Policy RE-3.6	**Community goals.** We encourage renewable energy facilities to meet community goals, including supporting community health, wellness, and recreational needs.
Policy RE-3.7	**Community involvement.** We foster local economic benefits of renewable energy facilities through community involvement.

Policy RE-6.1 **Permitting process.** We provide a consistent, clear, and timely development permitting process for renewable energy generation facilities.

Policy RE-6.2 **Cost and benefit nexus.** We establish mechanisms by which the County can restore and maintain the nexus between costs and benefits in renewable energy development.

Policy RE-6.3 **Cost and benefit information.** We communicate the costs and benefits of investing in energy efficiency retrofits, energy conservation behaviors, and renewable energy systems.

Policy RE-6.4 **State renewable energy goal.** We support the governor's initiative to obtain 50% of the energy consumed in the state through renewable energy generation sources by 2040.

Policy RE-6.5 **Pilot projects.** We encourage pilot projects to demonstrate energy efficiency retrofit investments and renewable energy opportunities.

Policy RE-6.6 **Incentive programs.** We investigate new renewable energy generation incentive programs, such as Community Choice Aggregation, for their appropriateness to our communities.

Policy RE-6.7 **Streamlining.** We induce high volume energy users to develop onsite renewable energy generation systems through streamlining of permit requirements.

The Built Environment Section of the Countywide Plan Policy Plan includes goals and policies that limit growth in greenfield areas, reduce energy use, and/or reduce water use:

Policy LU-1.2 **Infill development.** We prefer new development to take place on existing vacant and underutilized lots where public services and infrastructure are available.

Policy IU-1.1 **Water supply.** We require that new development be connected to a public water system or a County-approved well to ensure a clean and resilient supply of potable water, even during cases of prolonged drought.

Policy IU-1.3 **Recycled water.** We promote the use of recycled water for landscaping, groundwater recharge, direct potable reuse, and other applicable uses in order to supplement groundwater supplies.

Policy IU-1.4 **Greywater.** We support the use of greywater systems for non-potable purposes.

Policy IU-1.5 **Agricultural water use.** We encourage water-efficient irrigation and the use of non-potable and recycled water for agricultural uses.

Policy IU-1.9 **Water conservation.** We encourage water conserving site design and the use of water conserving fixtures, and advocate for the adoption and implementation of water conservation strategies by water service agencies. For existing County-owned

facilities, we incorporate design elements, building materials, fixtures, and landscaping that reduce water consumption, as funding is available.

Policy IU-2.3 **Shared wastewater facilities for recycled water.** We encourage an expansion of recycled water agreements between wastewater entities to share and/or create connections between wastewater systems to expand the use of recycled water.

Policy IU-4.3 **Waste diversion.** We shall meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce greenhouse gas emissions and use of natural resources through the reduction, reuse, or recycling of solid waste.

5.7.4 Environmental Impacts

Community-wide GHG emissions follow ICLEI's US Community Protocol for Accounting and Reporting of GHG Emissions.

- **Building energy.** The building energy sector consists of emissions from electricity generation and natural gas combustion by residential, commercial, industrial, and other buildings located in the unincorporated County. This sector is primarily composed of two main sources of emissions: electricity consumption and natural gas consumption. Demand for natural gas and electricity use in the emissions forecast is based on the activity data from the utilities collected for the Baseline Inventory. Emissions associated with building electricity use in the forecast years are based on the carbon intensity of electricity that is consistent with Senate Bill 350. SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030.

- **On-road transportation.** The on-road transportation sector consists of fuel consumption emissions from vehicle trips related to land uses within the unincorporated County. The emissions forecast is based on emission rates are based on CARB's EMFAC2017 Web Database, Version 1.0.2, for years 2040 and 2050. Model runs are based on daily VMT data provided by Fehr & Peers using the San Bernardino Transportation Analysis Model using an origin-destination approach, and adjusted for the population and employment within the unincorporated County.[6] For emissions modeling, VMT is based on jurisdictional responsibility, consistent with CARB's Regional Targets Advisory Committee, and accounts for the full trip length for internal-to-internal trips in the unincorporated areas and a 50 percent reduction in the trip length for external-internal/internal-external trips.

- **Off-road vehicles and equipment.** The off-road vehicles and equipment sector consists of fuel consumption emissions from use of off-road equipment (e.g., cranes, bulldozers, lawnmowers, water craft). The types of fuel consumed include gasoline, diesel, and liquefied petroleum gas. Emissions from off-road vehicles and equipment in the forecast year is based on the activity data collected for the baseline inventory.

[6] The VMT provided by Fehr & Peers for GHG modeling is adjusted to subtract out population and employment generated within transportation analysis zones (TAZs) that overlap with incorporated areas of the County.

- **Waste/landfills.** The waste/landfills sector includes CH_4 emissions from waste generated within the unincorporated County, and CH_4 emissions released directly from County-owned landfills. Waste generated by land uses in incorporated cities is not applicable since it is not related to growth generated by the land uses identified in the Countywide Plan. Therefore, the emissions from non-unincorporated county waste disposal was extracted from the Baseline Inventory for the forecast years. The emissions forecast is based on the increase in GHG emissions for unincorporated areas based on the emissions identify in the Baseline Inventory.

- **Water use.** The water use sector consists of emissions from electricity and natural gas consumption associated with water use, including groundwater pumping, local water distribution, and surface water diversion. The emissions forecast is based on the anticipated increase in water use in the unincorporated areas based on growth within each water service areas and the water district's 2020 targets identified in the Urban Water Management Plans (UWMP).

- **Wastewater treatment.** The wastewater treatment sector consists of fugitive emissions from community wastewater treatment, and emissions from electricity consumed at wastewater treatment plants due to County wastewater generation. The emissions forecast is based on the anticipated increase in wastewater generation in the unincorporated areas. Modeling assumes that there is no increase in septic systems.

- **Refrigerants.** The refrigerants sector consists of high-GWP gases are emitted from residential and commercial/industrial stationary refrigeration and air-conditioning equipment. High-GWP refrigerants include chlorofluorocarbons (CFCs), HCFCs, and HFCs. The emissions forecast is based on the emissions factors per person identified for the Baseline Inventory.

- **Agriculture.** The agriculture sector consists of N_2O emissions from fertilizer application and CH_4 emissions from manure management and enteric fermentation from livestock in the unincorporated areas. The emissions forecast assumes similar levels of agricultural activity as the Baseline Inventory.

- **Residential fuel use.** The residential fuel use sector consists of stationary fuel combustion at residences of propane/liquid petroleum (LPG), kerosene, and wood. This sector includes sources of energy resulting from heating or other purposes at residences from energy sources other than electricity and natural gas, which are included in the Building Energy sector. Because the CO_2 emissions released when wood is burned are considered to be biogenic, wood burning emissions only include CH_4 and N_2O. The emissions forecast is based on the Baseline Inventory, with the exception of non-biogenic emissions from wood burning. The Baseline Inventory includes wood from homes that utilize wood and a sole source of heat (only 1,695 units in the unincorporated County). For the forecast years, fireplace use is based on the percent of homes that use firewood as a primary and secondary source of fuel in the pacific region from the US Energy Information Administration (EIA)'s residential energy consumption survey. In the pacific region, 12 percent of homes use firewood (33 percent as a primary source of heat). For the County, the modeling assumes that residential houses that have a fireplace in the Valley Region burn on average 2 bundles of firewood, houses in the Mountain Region that have a woodburning fireplace burn on average 1 cord of wood, and houses in the North Desert and East Desert that have a fireplace burn ½ cord of wood on average.

Industrial sources of emissions that require a permit from SCAQMD or MDAQMD are not included in the community inventory. Life-cycle emissions are not included in this analysis because not enough information is available for the Countywide Plan, and therefore they would be speculative. Black carbon emissions are not included in the GHG analysis because CARB does not include this pollutant in the state's AB 32/SB32 inventory and treats this short-lived climate pollutant separately.[7]

Impact 5.7-1 The County of San Bernardino would experience a decrease in GHG emissions from existing conditions but would not achieve the GHG reduction targets established under SB 32 or Executive Order B-03-05. [GHG-1]

As stated previously, San Bernardino County is the largest County in the United States, at approximately 12.78 million acres, of which 12.27 million acres are within the unincorporated areas. However, federal agencies administer 85 percent of the unincorporated land area (10.37 million acres). The County's land use authority only extends to approximately 13 percent of the total unincorporated land area (1.58 million acres).[8] Of the land under the County's jurisdictional control, over half (0.83 million acres) is under a Resource/Land Management or Open Space designation, and only 0.74 million acres are designated for residential and non-residential land uses.

Development allowed under the Countywide Plan would contribute to global climate change through direct and indirect emissions of GHGs from land uses within the unincorporated County. However, a general plan does not directly result in development without additional approvals. Before any development can occur in the County, it must be analyzed for consistency with the Countywide Plan, zoning requirements, and other applicable local and state requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

2040 Unincorporated San Bernardino County Community GHG Emissions Forecast

Although implementation of the proposed plan is not linked to a specific development time frame, by the Countywide Plan horizon year of 2040, the proposed plan would result in a net increase of 49,680 people and 12,546 jobs in the unincorporated communities in the County, resulting in a net increase of approximately 1.31 million vehicle miles per day. The majority of the growth would occur in the Valley and North Desert regions. Approximately 50 percent of the population growth and 92 percent of the employment growth would occur in the Valley Region, and the North Desert would experience 42 percent of the population growth and 6 percent of the employment growth. Very little growth is anticipated in the Mountain and East Desert regions. Table 5.7-8, *2040 Unincorporated San Bernardino County Community GHG Emissions Forecast*, provides an estimate of the GHG emissions at the horizon year of 2040. As shown in the table, federal and state regulations that

[7] Particulate matter emissions, which include black carbon, are analyzed in Section 5.3, Air Quality. Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The state's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within ten years (CARB 2017).

[8] The remaining three percent of the incorporated County's acreage that is not under the jurisdictional control of the County is associated with state and tribal lands (0.31 million acres)

have been adopted would reduce GHG emissions 10 percent from existing levels despite the increase in population and employment growth in the unincorporated County.

Table 5.7-8 2040 Unincorporated San Bernardino County Community GHG Emissions Forecast

	GHG Emissions ($MTCO_2e$/Year)			
Category	Existing (2014)	2040	Net Change	Percent Change
Building Energy	875,681	921,733	46,052	5%
On-Road Transportation	1,188,893	813,311	-375,582	-32%
Off-Road Vehicles and Equipment	48,442	57,549	9,107	19%
Solid Waste/Landfills[1]	80,667	100,050	19,383	24%
Water Use	89,694	90,830	1,136	1%
Wastewater Treatment	65,335	74,202	8,867	14%
Refrigerants	146,823	170,529	23,706	16%
Agriculture	68,752	68,752	0	0%
Residential Fuel Use[2]	1,099	2,002	903	82%
Total Community Emissions	**2,565,386**	**2,298,956**	**-266,430**	**-10%**
SCAQMD/MDAQMD Bring Line Threshold	—	—	3,000 / 90,718	—
Exceeds the Bright-Line Threshold	—	—	**No**	—
Service Population (SP)[3]	382,488	422,860	40,372	11%
$MTCO_2e$/SP	6.7	5.4	-1.3	-19%
2040 Efficiency Target	—	2.7	—	—
Achieves 2040 Plan-Level Threshold?	—	**No**	—	—

Notes: Emissions may not total to 100 percent due to rounding. Based on GWPs in the IPCC Fifth Assessment Report (AR5).
1 For the community inventory impact analysis in the EIR, the solid waste sector excludes Municipal emissions associated with CH4 emissions released directly from County-owned landfills from waste disposed of by incorporated cities. Emissions are based on only d waste disposal from unincorporated areas sent to County and non-County landfills..
2 The Baseline Inventory includes wood from homes that utilize wood and a sole source of heat (1 percent of residential homes). GHG emissions from woodburning in the forecast years include recreational woodburning based on data from the US EIA's residential energy consumption survey (2018) and burn on average 2 bundles of firewood in the Valley Region, 1 cord of wood in the Mountain Region, and ½ cord of wood in the North Desert and East Desert Regions..
3 In 2014, the unincorporated San Bernardino County had an estimated 325,064 people and 57,425 employees. 2040 service population is based on 357,377 people and 65,483 employees in the unincorporated County. Biogenic emissions from woodburning generate 30,915 emissions in 2040.

2050 Unincorporated San Bernardino County Community GHG Emissions Forecast

The Countywide Plan guides growth in the unincorporated County for the next 20 years. Executive Order S-03-05 identifies a long-term goal that extends past the 2040 horizon of the Countywide Plan. A 2050 emissions forecast was developed in order to determine if the 2040 Countywide Plan plus additional growth between 2040-and 2050 would achieve the state's long-term GHG of an 80 percent reduction in GHG emissions below 1990 levels. It is estimated that between 2040 and 2050, the unincorporated County would result in a net increase of 8,444 additional people in the North Desert and 2,057 jobs (1,000 jobs in the Valley and 1,057 jobs

in the North Desert). Table 5.7-9, *2050 Unincorporated San Bernardino County Community GHG Emissions Forecast*, provides an estimate of the GHG emissions at 2050. As shown in the table, federal and state regulations that have been adopted would reduce GHG emissions 10 percent from existing levels despite the increase in population and employment growth in the unincorporated County.

Table 5.7-9 2050 Unincorporated San Bernardino County Community GHG Emissions Forecast

	GHG Emissions ($MTCO_2e$/Year)			
Category	**Existing (2014)**	**2050**	**Net Change**	**Percent Change**
Building Energy	875,681	943,734	68,053	8%
On-Road Transportation	1,188,893	794,748	-394,145	-33%
Off-Road Vehicles and Equipment	48,442	58,978	10,536	22%
Solid Waste/Landfills[2]	80,667	105,602	24,935	31%
Water Use	89,694	93,086	3,392	4%
Wastewater Treatment	65,335	76,134	10,799	17%
Refrigerants	146,823	174,558	27,735	19%
Agriculture	68,752	68,752	0	0%
Residential Fuel Use[2]	1,099	2,034	935	85%
Total Community Emissions	**2,565,386**	**2,317,626**	**-247,760**	**-10%**
SCAQMD/MDAQMD Bring Line Threshold	—	—	3,000 / 90,718	—
Exceeds the Bright-Line Threshold	—	—	**No**	—
Service Population (SP)[3]	382,488	433,361	50,873	13%
$MTCO_2e$/SP	6.7	5.4	-1.3	-20%
2040 Efficiency Target	—	1.3	—	—
Achieves 2040 Plan-Level Threshold?	—	**No**	—	—

Notes: Emissions may not total to 100 percent due to rounding. Based on GWPs in the IPCC Fifth Assessment Report (AR5).
1 For the community inventory impact analysis in the EIR, the solid waste sector excludes Municipal emissions associated with CH4 emissions released directly from County-owned landfills from waste disposed of by incorporated cities. Emissions are based on only d waste disposal from unincorporated areas sent to County and non-County landfills..
2 The Baseline Inventory includes wood from homes that utilize wood and a sole source of heat (1 percent of residential homes). GHG emissions from woodburning in the forecast years include recreational woodburning based on data from the US EIA's residential energy consumption survey (2018) and burn on average 2 bundles of firewood in the Valley Region, 1 cord of wood in the Mountain Region, and ½ cord of wood in the North Desert and East Desert Regions..
3 In 2014, the unincorporated San Bernardino County had an estimated 325,064 people and 57,425 employees. 2050 service population is based on 365,821 people and 67,540 employees in the unincorporated County. Biogenic emissions from woodburning generate 31,412 emissions in 2050.

Consistency with SB 32 and Executive Order S-03-05 GHG Reduction Targets

While the proposed Project would not generate an increase in GHG emissions from the CEQA baseline in either the 2040 Countywide Plan horizon year or 2050 forecast, this EIR also analyzes the potential for the Project to conflict with the GHG reduction goals established under SB 32 and Executive Order S-03-05, which require a reduction in statewide GHG emissions from existing conditions to achieve a 40 percent reduction in

GHG emissions by 2030 and an 80 percent reduction in GHG emissions by 2050, respectively. As discussed in Section 5.7.2.3, the 2040 and 2050 efficiency targets were derived for the proposed Project based on the horizon year and the 2030 goal established in SB 32 and the 2050 climate stabilization goal established under Executive Order S-03-05 identified in CARB's *2017 Climate Change Scoping Plan*. As shown in Tables 5.7-8 and 5.7-9, the proposed Project would not achieve the 2040 or 2050 plan-level efficiency metric.

GHG Reduction Policies in the Countywide Plan

To ensure that the County implements GHG reductions needed on a local level to achieve the statewide emissions reduction goals identified in CARB's Scoping Plan, the County has identified several goals and policies in the Countywide Plan. The County also requires adherence to the County's GHG Reduction Plan. Policy RE-1.1 directs the County to implement the energy conservation and efficiency measures in the County's GHG Emissions Reduction Plan. The land use plan for the County minimizes VMT and associated GHG emissions by promoting compact and transit-oriented development (Policies NR-1.1, TM-3.1, LU-1.2). The Policy Plan provides transportation strategies that reduce VMT and trips by providing trip reduction strategies, first-mile and last mile connectivity, and new transportation options (Policies TM-3.2, TM-3.3, TM-1.9, TM-3.1, TM-4.2, TM-4.7, TM 4-8. TM-4.9). The Countywide Plan directs the County to actively work with transit agencies to provide transit access for residents in the unincorporated areas (Policies TM-4.3, TM-4.4, TM-4.5, TM-4.6). The Policy Plan includes several measures that reduce energy use in the built environment through energy conservation and greater access to and reliance of renewable energy systems (Policies NR-1.9, RE-1.2, RE-1.4, RE-2.1, RE-2.2, RE-2.3, RE-2.4, RE-2.6, RE-3.1 through RE-3.7, RE 6.1 through RE-6.7). Policy RE-2.5 identifies that the County supports renewable energy systems that accelerate zero net energy (ZNE) through innovative design, construction, and operations of residences, business, and institutions that are grid-neutral and independent of centralized energy infrastructure. The County supports the goal to obtain 50 percent of the energy consumed in the state through renewable energy generation (Policy RE-6.4). The Built Environment Section of the Countywide Plan also includes goals and polices that reduce water use (Policy IU-1.1, IU-1.3, IU-1.4, IU-1.5, IU-1.9, IU-2.3) and waste reduction (Policy IU-4.3).

Summary

Unincorporated areas in the County would experience a reduction in GHG emissions from existing conditions despite the anticipated population and employment growth. Consequently, implementation of the General Plan would not result in a substantial increase in magnitude in GHG emissions. However, GHG emissions impacts are also based on consistency with the GHG reduction objectives under SB 32 and Executive Order S-03-05. As identified in the tables above, the unincorporated County would not achieve the state's GHG emissions efficiency target for year 2040 or 2050 without implementation of additional local GHG reduction measures. Goals and policies in the Countywide Plan and actions in the County's GHG Reduction Plan would further minimize GHG emissions generated by the residential and nonresidential land uses in the unincorporated county. However, the County cannot achieve the long-term efficiency targets without additional federal and state reductions. The state's climate stabilization goals are contingent on decarbonization of the state's transportation and energy sectors. Consequently, the overall GHG impact is conservatively considered significant.

Level of Significance before Mitigation: Impact 5.7-1 would be potentially significant.

Impact 5.7-2 Implementation of the proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs. [GHG-2]

Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan and SCAG's RTP/SCS. The consistency analyses with these plans are presented below.

CARB Scoping Plan

In accordance with AB 32, CARB developed the 2008 Scoping Plan to outline the state's strategy established by AB 32, which is to return the state's GHG emissions inventory to 1990 levels by year 2020. In September 2016, SB 32 was signed into law, requiring the state's GHG emissions to return to 40 percent below 1990 levels by 2030. Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. In December 2017, CARB adopted the 2017 Scoping Plan Update to address the new interim GHG emissions target under SB 32. The CARB Scoping Plan is applicable to state agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Statewide strategies to reduce GHG emissions in the 2017 Climate Change Scoping Plan include implementing SB 350, which expands the RPS to 50 percent by 2030 and doubles energy efficiency savings; expanding the LCFS to 18 percent by 2030; implementing the Mobile Source Strategy to deploy zero-electric vehicle buses and trucks; implementing the Sustainable Freight Action Plan; implementing the Short-Lived Climate Pollutant Reduction Strategy, which reduces methane and hydrofluorocarbons to 40 percent below 2013 levels by 2030 and black carbon emissions to 50 percent below 2013 levels by 2030; continuing to implement SB 375; creating a post-2020 Cap-and-Trade Program; and developing an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

The GHG emissions under the proposed Project, shown in Table 5.7-8 and Table 5.7-9, include reductions associated with statewide strategies that have been adopted since AB 32. The Countywide Plan would comply with these GHG emissions reduction measures since they are statewide strategies. In addition, future buildings constructed over the lifetime of the Countywide Plan are subject to the future triannual updates to the Building and Energy Efficiency Standards, which may ultimately require zero net energy (ZNE) construction. However, the Scoping Plan itself is not directly applicable to the proposed Countywide Plan. Therefore, the proposed Project would not obstruct implementation of the CARB Scoping Plan. A consistency analysis with the local actions in the 2017 Scoping Update is included in Table 5.7-10, *Consistency with Local Actions in CARB's 2017 Scoping Plan*, to ensure that the County implements GHG reductions needed on a local level to support the state's GHG reduction efforts. As identified in this table, the Countywide Plan incorporates measures consistent with the recommended local action in CARB's 2017 Scoping Plan. Impacts would be less than significant.

Table 5.7-10 Consistency with the Local Actions in CARB's 2017 Scoping Plan

2017 Scoping Plan Local Actions	Consistency with 2017 Scoping Plan Local Action
Energy	
Streamline permitting and environmental review and reduce fees for small-scale renewable energy systems	**Consistent**. The County's Renewable Energy and Conservation Element was adopted in 2017. This element ensures that the County pursues the benefits of renewable energy to reduce GHG emissions and electricity use. One of the goals of the element is to ensure predictability, consistency, clarity, and timeliness in the permitting process for renewable energy projects (Policy RE-6.1). Policy RE-1.1 identifies that the County will implement the energy conservation and efficiency measures in the County's GHG Emissions Reduction Plan. The County encourages high volume energy users to develop onsite renewable energy generation systems through streamlining of permit requirements (Policy RE-6.7).
Adopt a community solar program to help realize economies of scale and help residents without appropriate rooftop space to participate in clean energy generation	**Consistent.** The County's Renewable Energy and Conservation Element directs the County to investigate new renewable energy generation incentive programs, such as Community Choice Aggregation (Policy RE-6.6), which would be available to residents without access to rooftop solar**.**
Promote property-assessed clean energy financing districts or other financing mechanisms to fund permanent energy-efficiency, water-efficiency, and renewable energy improvements in the residential and commercial sectors	**Consistent**. Residents and businesses in the unincorporated County have access to the Home Energy Retrofit (HERO) program, which is a property-assessed clean energy (PACE) program that allows homeowners and businesses to install energy- and water-efficient improvements. The Renewable Energy and Conservation Element also identifies several other mechanisms to support the County's goals of 50% renewable energy by 2040. Policy RE-6.3 ensures the County communicates the costs and benefits of investing in energy efficiency retrofits, energy conservation behaviors, and renewable energy systems. Policy RE-6.5 encourages pilot projects to demonstrate energy efficiency retrofit investments and renewable energy opportunities. Policy RE-6.6 directs the County to investigate new renewable energy generation incentive programs, such as Community Choice Aggregation. Policy RE-6.7 provides permit streamlining for high volume energy users to install renewable energy generation systems.
Incentivize energy-efficiency upgrades for existing buildings at the time of a major remodel or change of ownership	**Consistent**. Residents and businesses in the unincorporated County have access to the HERO program that allows homeowners and businesses to install energy- and water-efficient improvements.
Reduce permit fees and streamline permitting requirements for energy-efficiency- and renewable energy-related building renovations	**Consistent**. Policy RE-6.7 provides permit streamlining for high volume energy users to install renewable energy generation systems. Policy RE-6.7 encourages high volume energy users to develop onsite renewable energy systems through streamlining of permit requirements. On August 25,

Table 5.7-10 Consistency with the Local Actions in CARB's 2017 Scoping Plan

	2015, the County adopted an ordinance to create an expedited and streamlined small residential solar energy permit process. The adopted ordinance will encourage the installation and use of small residential solar energy systems and provide effective customer services to the constituents of the unincorporated areas of the County.
Implement building energy audit and retrofit programs and residential solar programs	**Consistent**. A residential or commercial energy/water audit is not required to participate in the HERO Program. However, residents and businesses can request an audit as part of the HERO program.
Adopt residential and commercial energy conservation, renewable energy, and/or zero net energy ordinances (consider requirements for audits or upgrades at major renovation or time of sale)	**Consistent**. The County's Renewable Energy and Conservation Element was adopted in 2017. This Element ensures that the County pursues the benefits of renewable energy to reduce GHG emissions and electricity use. The County requires implementation of the latest California Building and Energy Efficiency Standards and CALGreen. The 2019 Standards, which will go into effect on January 1, 2020. The 2019 Standards cut energy use in new homes by more than 50 percent and require installation of solar photovoltaic systems for single-family homes and multi-family buildings of 3 stories and less. In addition, future buildings constructed over the lifetime of the Countywide Plan are subject to the future triannual updates to the Building and Energy Efficiency Standards, which may ultimately require zero net energy (ZNE) construction.
Incorporate renewable energy and energy efficiency into public facilities' capital improvements	**Consistent**. The County's Renewable Energy and Conservation Element requires development of County-owned properties to be consistent with the goals and policies of the Renewable Energy and Conservation Element. The County's 2011 GHG Reduction Plan also directs the County to pursue LEED Silver Certification for all new buildings and install renewable energy sources on County-owned buildings.
Replace public lighting with energy-efficient lighting	**Consistent**. The County uses energy-efficient lighting in all public utilities and facilities.
Permit renewable energy generation facilities as of right in zones with compatible uses	**Consistent**. The County's Renewable Energy and Conservation Element encourages renewable energy generation, where compatible, in the unincorporated areas of the County. The element encourages community-oriented renewable energy generation facilities, with emphasis and priority given to rooftop and parking lot installations of solar energy systems (Policy RE-3.1). The element keeps utility-oriented projects separate from or sufficiently buffered from existing communities to avoid adverse impacts on community development and quality of life (Policy RE-5.4). The element also encourages local renewable energy production to meet local energy demand while allowing excess energy to be sold to the grid. Policies RE-2.1 through RE-2.6 ensure that the County

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	develops diverse renewable energy systems. Specifically, Policy RE-6.1 directs the County to provide a consistent, clear, and timely development permitting process for renewable energy generation facilities.
Create incentive programs to promote the building energy-efficiency projects	**Consistent**. The unincorporated County covers several distinct regions. In the Desert Regions, buildings are subjected to temperature extremes. Policy D/H-1.4 identifies that the County will prioritize use and applications of grants for things such as energy conservation retrofits. The County also encourages energy conservation techniques and upgrades in both the construction and rehabilitation of residential units (Policy H-1.5). The County uses CALGreen to meet energy standards (Policy NR-1.9). The County's Renewable Energy and Conservation Element also promotes building energy conservation measures (Policies RE-1.1. RE-1.2, RE-1.4).
Implement large-scale energy storage in commercial and industrial buildings to control peak loads	**Consistent**. The County's Renewable Energy and Conservation Element manages renewable energy development and conservation of the natural environment. Specifically, Policy RE-2.2 directs the County to promote use of energy-storage technologies that are appropriate for the character of the location. Policy RE-2.3 also encourages the use of emerging and experimental renewable energy technologies.
Require new residential and commercial construction to install solar or be solar ready (see California Energy Code)	**Consistent**. The state's Building and Energy Efficiency Standards require that all new construction be solar ready. The state's new 2019 Building Standards require solar panels on all new single-family homes. Additionally, Policy RE-2.5 identifies that the County supports renewable energy systems that accelerate ZNE through innovative design, construction, and operation of residences, businesses, and institutions that are grid neutral and independent of centralized energy infrastructure.
Encourage the development of brightfields – brownfields that are used to develop solar energy – through tax incentives, streamlining, and use of locally-owned land	**Consistent**. The County's Renewable Energy and Conservation Element encourages renewable energy generation, where compatible, in the unincorporated areas of the County. Policy RE-5.1 encourages siting of renewable energy on disturbed or degraded sites proximate to transmission infrastructure. Policy RE-5.2 also limits sites for utility-oriented renewable energy to disturbed sites such as waste disposal sites/cleanup sites; mining sites; fallow, degraded, or unviable agricultural lands; airports; brownfields; or other sites proven by a detailed suitability analysis to reflect the significantly disturbed nature.
Pursue renewable energy development on municipal buildings or purchase renewable energy to power municipal operations	**Consistent**. The County pursues renewable energy development on new and modernized County facilities. In 2010, the County achieved a Leadership in Energy and Environmental Design (LEED) Gold Certification for the County's High Desert Government

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	Center, which included solar carports. In 2012, the County completed construction of the Bob Burke Joshua Tree Government Center that was built to achieve LEED Silver Certification and also includes solar carports. The County's 2011 GHG Reduction Plan also directs the County to pursue LEED Silver Certification for all new buildings and install renewable energy sources on County-owned buildings.
Require on-site renewable energy generation by large-scale residential and commercial projects	**Consistent**. The County's Renewable Energy and Conservation Element encourages renewable energy generation, were compatible, in the unincorporated areas of the County. The state's Building and Energy Efficiency Standards require that all new construction be solar ready. The state's new 2019 Building Standards require solar panels on all new single family residential homes. Additionally, Policy RE-2.5 identifies that the County supports renewable energy systems that accelerate ZNE through innovative design, construction, and operation of residences, businesses, and institutions that are grid neutral and independent of centralized energy infrastructure. Additionally, Policy RE-6.6 directs the County to investigate renewable energy programs, such as Community Choice Aggregation.
Incentivize energy-efficiency upgrades to existing buildings, where appropriate, upon issuing a permit for substantial modification	**Consistent**. Policy RE-1.4 encourages residents and businesses to conserve energy in the County, and Policy RE-2.6 encourages energy efficiency through appropriate renewable energy systems. Residents and businesses within the unincorporated County have access to the HERO Program, which is a Property Accessed Clean Energy (PACE) financing option that provides low cost loans for energy- and water-efficiency projects.
Transportation and Land Use	
Update Lead Agency's transportation impact analysis guidelines and congestion management plans to comply with SB 743	**Consistent**. The County is in the process of establishing transportation thresholds for SB 743. **[TBD -thresholds pending]** Pursuant to Policy TM-3.1, the County promotes development that would reduce VMT per capita by at least **TBD** percent relative to existing VMT per capita in each of the County Regions (Policy TM-3.1).
Adopt general plan policies and diagram designations and zone map and standards that are consistent with the Sustainable Communities Strategy	**Consistent**. Section 5.10, *Land Use and Planning,* identifies that the Countywide Plan is consistent with SCAG's RTP/SCS. For example, Policy TM-4.6 identifies that where public transit is available, the County prefers public facilities and activity centers to be within one-half mile of a transit stop.
In appropriate locations, adopt: 1) as-of-right zoning, and 2) design standards and guidelines, to enable mixed use, walkable, compact, infill development that includes a range of housing types and affordability levels	**Consistent.** The Transportation and Mobility Element of the Countywide Plan provides for on- and off-site street improvements that provide functional alternatives to private car usage and promote active transportation. Policies TM-4.1 and TM-4.2 identify that the County will maintain a complete streets

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	network. The County supports infill development where public services and infrastructure are available. (Policy LU-1.2).
Build infrastructure necessary for residential development in existing communities, and ensure any urban growth boundaries are paired with significant infill promotion strategies and removal of infill development barriers	**Consistent.** The County supports infill development where public services and infrastructure are available. (Policy LU-1.2).
Streamline permitting and environmental review and reduce fees for construction of secondary units to promote infill in targeted areas	**Consistent.** AB 2299, SB 1069, SB 229, and AB 494 promote the development of accessory dwelling units on all zoning districts that allow single-family uses. Accessory dwelling units are no longer considered new construction under these laws for the purpose of collecting new construction connection fees.
Streamline local permitting and siting for hydrogen fueling and electric vehicle (EV) charging infrastructure	**Consistent.** Pursuant to Policy NR-1.9, the County uses CALGreen to meet energy efficiency standards and incorporate design elements that improve environmental sustainability and reduce emissions. CALGreen includes mandatory measures for nonresidential and residential development for electric vehicle (EV) charging to promote EV use.
Adopt a jurisdiction-wide transportation demand management plan which sets numeric targets or caps for the proportion of non-single occupancy vehicle (SOV) trips associated with new development, and/or an overall vehicle miles traveled (VMT) target	**Consistent**. The County is in the process of establishing transportation thresholds for VMT pursuant to SB 743.
Require employer-based trip reduction programs and provide funding to support them if feasible	**Consistent**. Policy TM-3.2 identifies that the County supports implementation of transportation demand management (TDM) techniques, mixed use strategies, and the placement of development in proximity to job and activity centers to reduce the number and length of vehicular trips.
Update code of ordinances to reduce parking requirements and eliminate parking minimums; impose parking maximums	**Consistent**. Policy TM-4.10 identifies that the County supports the use of shared parking.
Institute paid parking for local on-street parking, structures and lots	**Not Applicable**. This strategy is generally not applicable for the County given the nature of the County's regions. The County institutes permit parking for County employees at County facilities.
Adopt and implement EV and hydrogen readiness plans	**Consistent**. While the County has not adopted an EV or hydrogen fuel readiness plan, the County uses CALGreen to meet energy efficiency standards and incorporate design elements that improve environmental sustainability and reduce emissions (Policy NR-1.9). CALGreen includes mandatory measures for nonresidential and residential development for electric vehicle (EV) charging to promote EV use. Further, the California Public Utilities Commission develops policies to support the deployment of zero emissions vehicles (ZEVs). The CPUC works with electric utility providers to provide rebates to customers who drive partial electric vehicles (PEVs) and ZEVs. SCE is also working with CPUC and other agencies to implement pilot programs to install infrastructure to support EV charging at key destinations.

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Adopt voluntary[1] green building standards that exceed minimum State building standards for EV Capable parking spaces (e.g., by requiring installation of EV chargers and/or a larger number of EV-capable parking spaces) or match local climate action plan goals	**Consistent**. CALGreen includes mandatory measures for nonresidential and residential development for electric vehicle (EV) charging to promote EV use. The County's GHG Reduction Plan identifies additional points (i.e., GHG reductions) for each charging station provided to achieve the overall project's GHG reduction goals.
Replace public fleet vehicles and trips with electric or alternative fueled vehicles as much as feasible and provide EV chargers in public spaces	**Consistent**. The County's GHG Reduction Plan requires developing EV charging stations at County facilities to encourage use of electric vehicles. The County considers fuel efficiency when purchasing new public vehicles.
Adopt and implement a bicycle and pedestrian master plan which includes targets for trips taken by bicycle and on foot	**Consistent**. The County spans 12.78 million acres; therefore, policies on bicycle and pedestrian facilities are aimed at regional connectivity. Policy TM-4.7 directs the County to work with the San Bernardino County Transportation Authority (SBCTA) to develop and maintain a regional backbone bicycle network. The County also partners with SBCTA, Caltrans, and other local agencies to fund active transportation improvements (Policy TM-4.3). In general, the County supports local bike and pedestrian facilities that serve unincorporated areas and connect to facilities in adjacent incorporated areas and regional trails (Policy TM-4.8).
Adopt complete streets policies and active design guidelines	**Consistent.** The Transportation and Mobility Element of the Countywide Plan includes complete streets policies for on- and off-site street improvements that provide functional alternatives to private car usage and promote active transportation (Policies TM-4.1 through TM-4.11).
Develop a transportation impact fee program to fund low-carbon transportation	**Consistent.** The County requires payment of fair share contributions to off-site traffic impacts generated by new projects (Policy TM-1.8). The County also requires payment of Regional Transportation Development Mitigation Fees by development type, which fund transportation improvements. The County also supports the use of transportation network companies, autonomous vehicles, micro transit, and other emerging transportation options that reduce congestion, minimize land area needed for roadways, create more pedestrian- and bicycle-friendly streets, reduce VMT, or reduce dependence on privately owned vehicles (Policy TM-1.9).
Support biogas use in the transportation sector	**Not Applicable.** The County does not have jurisdictional authority over the types of fuel used in vehicles.
Provide incentives for certifying development plans and projects using LEED for Neighborhood Development or similar third-party certification system.	**Consistent**. The County's Renewable Energy and Conservation Element encourages residents and business to conserve energy (Policy RE-1.4). The County supports ZNE construction (Policy RE-2.5). The County uses CALGreen to meet energy standards (Policy NR-1.9). Compliance with the

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	state's Building and Energy Efficiency Standards (i.e., the mandatory standards identified in CALGreen) typically meets or exceeds the energy requirements under LEED.
Partner with local/regional transit agencies to enhance transit ridership	**Consistent.** The County partners with SBCTA, Caltrans, and other local agencies to fund active transportation systems in the County (Policy TM-4.3). The County supports and works with local transit agencies to generate a public transportation system (Policy TM-4.4).
Adopt a Transportation Management Ordinance to require carpool, electric vehicle, and/or vanpool preferential parking spaces close to the major employment areas	**Consistent**. Policy TM-3.2 identifies that the County supports implementation of TDM techniques, mixed use strategies, and the placement of development in proximity to job and activity centers to reduce the number and length of vehicular trips.
Adopt a Safe Routes to School Program that encourages youth to walk or ride bicycles to schools. At schools where students drive, reduce the number of student parking spaces to encourage walking, biking and carpooling.	**Consistent**. Policy TM-4.9 identifies that the County promotes pedestrian and bicycle safety by providing separated pedestrian and bike crossings when the County constructs or improves bridges over highways, freeways, rail facilities, and flood control areas. The County monitors pedestrian and bicycles traffic accidents and promotes safety improvements in unincorporated high-accident areas. Policy TM -4-6 also encourages public K-12 education to be located within one-half mile of public transit.
Develop Safe Routes to transit programs for pedestrians and bicyclists	**Consistent**. As identified above, Policy TM-4.9 promotes pedestrian and bicycle safety in the County.
Develop intelligent traffic management systems to improve traffic flow	**Consistent**. The County maintains over 2,500 miles of roads in the unincorporated County, known as the County Maintained Road System (CMRS). The County has over 90 traffic signals and 30 flashing beacons on the CMRS. The Traffic Division is responsible for the operation and maintenance of these locations. The Traffic Division also conducts analyses of traffic signal warrants and maintains a list of intersections where traffic signals may be needed. The Traffic Division oversees the maintenance of signals and flashing beacons through a contract awarded to a private contractor specializing in such maintenance.
Incentivize use of alternative fuel or high-fuel efficient vehicles by public agencies and private businesses	**Consistent**. The County does not own its own bus fleet and does not have jurisdictional control over fleets maintained by private landowners in the unincorporated areas. However, the County collaborates with the Air Quality Management Districts (SCAQMD and MDAQMD) to monitor and reduce major pollutants affecting the County at the emissions source (Policy NR-1.3). Business that maintain a large fleet are subject to CARB's In-Use Public and Utility Fleets regulation (Title 13 of the California Code of Regulations, Sections 2020, 2022, and 2022.1).

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Require local public agencies to contract with fleets that set targets and policies for lowering the average GHG emissions of their fleet vehicles	**Not Applicable**. The County does not own its own bus fleet and does not have jurisdictional control over fleets maintained by private landowners in the unincorporated areas. However, the County collaborates with the Air Quality Management Districts (SCAQMD and MDAQMD) to monitor and reduce major pollutants affecting the County at the emissions source (Policy NR-1.3).
Require clean vehicles be purchased as part of municipal vehicle fleet procurement	**Consistent**. The County's GHG Reduction Plan requires developing EV charging stations at County facilities to encourage use of electric vehicles. The County considers fuel efficiency when purchasing new public vehicles.
Adopt regional joint-purchase agreements to facilitate local fleets to purchase EVs, hybrids, telematics, and other technology that can reduce GHG emissions	**Not Applicable**. The County does not own its own bus fleet and does not have jurisdictional control over fleets maintained by private land owners in the unincorporated areas. However, the County collaborates with the Air Quality Management Districts (SCAQMD and MDAQMD) to monitor and reduce major pollutants affecting the County at the emissions source (Policy NR-1.3).
Require local specific plans for rideshare-designated parking spaces, new bus stops, employment centers, and commercial areas	**Consistent**. The County support the use of transportation network companies, autonomous vehicles, micro transit, and other emerging transportation options that reduce congestion, minimize land area needed for roadways, create more pedestrian- and bicycle-friendly streets, reduce VMT, or reduce dependence on privately owned vehicles (Policy TM-1.9).
Expand transit and rail services and clean-fueled transit vehicles	**Consistent.** The County partners with SBCTA, Caltrans, and other local agencies to fund active transportation systems in the County (Policy TM-4.3). The County supports and works with local transit agencies to generate a public transportation system (Policy TM-4.4).
Promote ridesharing and last-mile connections	**Consistent.** The County supports strategies that strengthen the first/last mile connectivity to enhance the viability and expand the utility of the public transit in unincorporated areas and countywide (Policy TM-3.3). The County also promotes trip reduction strategies, such as ridesharing (Policy TM-3.2.).
Create incentives for electric landscaping power tools and off-road equipment	**Consistent.** The County encourages contractors, builders, and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions (Policy NR-1.8). SCAQMD hosts a year round program to purchase new electric lawnmowers for residents in the SoCAB.
Promote smart driving strategies through public education and outreach	**Consistent.** The County partners with SBCTA, Caltrans, and other local agencies to fund active transportation systems in the County (Policy TM-4.3). The County supports and works with local transit agencies to generate a public transportation system (Policy TM-4.4).

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Restrict idling for all vehicles, especially in sensitive areas such as near schools	**Consistent.** Commercial trucks and buses are prohibited from non-essential idling for more than five minutes (Title 13, California Code of Regulations Section 2485). School buses, transit buses, and commercial motor vehicle drivers are also required to turn off the engine upon arriving at a school and restart it no more than 30 seconds before departing (Title 13, California Code of Regulations, Section 2480).
Natural and Working Lands (NWL)	
Incorporate NWL conservation into local land use plans including adoption of a natural and working lands climate plan, land climate plan, and the recognition of the climate resiliency benefits of NWL	**Consistent.** The County's land use authority extends to approximately 1.58 million acres, of which a little over half (0.83 million acres) is protected under a Resource/Land Management or Open Space designation. For areas outside of the County's control, the County coordinates with the public and nongovernmental agencies to sustainably manage and conserve land (Policy NR-3.3). The County prioritizes conservation actions that demonstrate multiple resource preservation benefits, such as biology, climate change adaptation and resiliency, hydrology, cultural, scenic, and community character (Policy NR-5.3).
Adopt policies that encourage management practices known to enhance carbon sequestration on NWL	**Consistent.** As identified above, The County prioritize conservation actions that demonstrate multiple resource preservation benefits, such as biology, climate change adaptation and resiliency, hydrology, cultural, scenic, and community character (Policy NR-5.3).
Adopt policies to expand and improve management of urban forests for net long-term carbon storage	**Consistent**. The unincorporated county areas are almost exclusively rural and do not have substantial urban forests. The vast majority of the unincorporated areas are also owned and/or controlled by the federal government. However, the 2011 GHG Reduction Plan includes GHG Goal OS/RC 1, which directs the County to reduce GHG emissions by retaining agricultural uses and conserving open space resources by supporting voluntary actions in cooperation with the resource conservation districts, the National Resource Conservation Service, the Department of Conservation, and private organizations. Measure R3NR1 directs the County to preserve existing land conservation areas (especially forested areas, oak woodlands, and wetlands) that provide carbon sink benefits. Measure R3NR2 directs the County to compensate for loss of sequestration. As part of development review, through requirements for on-site and off-site tree planting and/or funding for restoration of forested areas, woodlands, and wetlands, Measure R3NR3 directs the County to evaluate the feasibility of substantially expanding tree planting in the County, including: evaluation of potential carbon sequestration from different tree species, potential reductions of building energy from

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	shading, and GHG emissions associated with pumping of water used for irrigation. Measure R3NR3 also directs the County to pursue an urban forestry program if GHG emissions reductions exceed GHG emissions associated with implementation and water use.
Adopt urban forestry and green infrastructure programs	**Consistent**. See above. The 2011 GHG Reduction Plan includes GHG Goal OS/RC 1, which includes measure R3NR3 to expand tree planting in the County and pursue an urban forestry program if GHG emissions reductions exceed GHG emissions associated with implementation and water use. Additionally, the 2011 GHG Reduction Plan includes Measure R3CS1-INT to implement a tree management program to maintain and increase its tree inventory, and coordinate tree maintenance responsibilities with all responsible departments, consistent with best management practices. The County Development Code also addresses tree preservation in Chapter 83.10, Landscaping Standards, Section 83.10.080(b)(1), with the requirement of a forest conservation plan and insect infestation prevention program, and in Chapter 88.01, Plant Protection and Management, Section 88.01.070, Mountain Forest and Valley Tree Conservation.
Adopt zoning to allow empty lots and other underutilized space to be converted into community gardens and greenspace	**Consistent.** Policy HW-3.1 directs the County to collaborate with other public agencies, not-for-profit organizations, community groups, and private developers to improve the physical and built environment in which people live. To improve such things as walkability, bicycle infrastructure, transit facilities, universal design, safe routes to school, indoor and outdoor air quality, gardens, green space and open space, and access to parks and recreation amenities.
Adopt ordinances preserving and enhancing carbon sequestration of wetlands, forests, croplands, and grasslands	**Consistent.** The County requires project applicants seeking to develop 20 or more acres of agricultural land (classified as prime, of statewide importance, or unique) with non-agricultural uses to prepare an agricultural resource evaluation prior to project approval. The evaluation shall use generally accepted methodologies to identify the potentially significant impact of the loss of agricultural land as well as the economic viability of future agricultural use of the property. If the conversion is deemed significant, the County shall require mitigation at a 1:1 ratio of converted to preserved acreage through conservation easements, payment of its valuation equivalent if a fee mitigation program is established, or inclusion in a regional agricultural preservation program.

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Adopt plans to conserve lands, water, and other natural features and resources for habitat function, watershed protection, air and water quality protection, and other ecosystem services	**Consistent.** The County's land use authority extends to approximately 1.58 million acres, of which a little over half (0.83 million acres) is protected under a Resource/Land Management or Open Space designation. For areas outside of the County's control, the County coordinates with the public and nongovernmental agencies to sustainably manage and conserve land (Policy NR-3.3). The County prioritizes conservation actions that demonstrate multiple resource preservation benefits, such as biology, climate change adaptation and resiliency, hydrology, cultural, scenic, and community character (Policy NR-5.3).
Adopt ordinances preserving trees in urban areas through the review of proposed land use developments where trees are present on either public or private property	**Consistent.** See above. The County Development Code addresses tree preservation in Chapter 83.10, Landscaping Standards, Section 83.10.080(b)(1), with the requirement of a forest conservation plan and insect infestation prevention program, and in Chapter 88.01, Plant Protection and Management, Section 88.01.070, Mountain Forest and Valley Tree Conservation.
Adopt plans and support projects for forest management activities to restore California forest lands that have high tree mortality and unnaturally dense fuel loads to a fire resilient condition that will mitigate wildfire size and severity	**Consistent.** The County requires new development in the Fire Safety Overlay to comply with additional site design, building, and access standards to provide enhanced resistance to fire hazards (Policy PP 3-7). Policy NR-3.3 also directs the County to coordinate with public and nongovernmental agencies to sustainably manage and conserve land within or adjacent to locally, state, or federally designated open space or resource conservation areas.
Promote and encourage the development of value-added alternatives, such as composting, energy, biochar, and wood products to avoid open burning of forest biomass wastes	**Consistent**. The vast majority of forested unincorporated areas are owned and/or controlled by the federal government. However, Policy NR-3.3 direct the County to coordinate with public and nongovernmental agencies to sustainably manage and conserve land within or adjacent to locally, state, or federally designated open space or resource conservation areas.
Develop strategies to value the benefits of forest fuels reductions on upper-watershed water quality, quantity, and timing	**Consistent.** The County's 2011 GHG Reduction Strategy includes GHG Goal WC 1 to reduce GHG emissions associated with water use through conservation and efficiency measures. Measure R3WC2 requires that the County preserve existing land conservation areas for watershed protection to protect water quality (reduces water treatment energy use), and protect local water supplies (reduces imported water energy use).
Agriculture	
Incorporate farmland conservation in local land use plans	**Consistent.** The County requires project applicants seeking to develop 20 or more acres of agricultural land (classified as prime, of statewide importance, or unique) to non-agricultural uses to prepare an agricultural resource evaluation prior to project approval. The evaluation shall use generally accepted

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	methodologies to identify the potentially significant impact of the loss of agricultural land as well as the economic viability of future agricultural use of the property. If the conversion is deemed significant, the County shall require mitigation at a 1:1 ratio of converted to preserved acreage through conservation easements, payment of its valuation equivalent if a fee mitigation program is established, or inclusion in a regional agricultural preservation program.
Provide incentives for carbon sequestration and carbon-based conservation farming techniques, including the use of biochar and compost from biomass wastes that would have otherwise been landfilled or open burned	**Consistent**. The Renewable Energy and Conservation Element includes Policy RE-1.1, which requires the County to implement the energy conservation and efficiency measures identified in the County's Greenhouse Gas Emissions Reduction Plan. Measure NR-17 also identifies that the County will strive to meet the 2040 and 2050 greenhouse gas emission reduction targets in accordance with state law.
Promote value-added alternatives, such as composting, energy, biochar, and wood products, and prohibit open burning of agricultural biomass wastes	**Consistent.** See above. Policy IU-4.3 identifies that the County shall meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce greenhouse gas emissions and use of natural resources through the reduction, reuse, or recycling of solid waste. GHG Goal SW 1 of the 2011 GHG Reduction Plan also identifies that the County will reduce GHG emissions from waste through landfill methane recovery, waste diversion (including waste minimization, reuse, and recycling) and public education (Measure R2W4, Measure R2W6, Measure R3W3, Measure R2W4-INT, Measure R2W6-INT, and Measure R2W7-INT).
Develop incentives to reduce applications of pesticides and fertilizers and increase use of compost	**Not Applicable**. The County does not have direct or indirect control over pesticide or fertilizer use by agricultural land uses.
Support development of farmers markets and provide guidance and support for local farmers, especially in disadvantaged communities	**Consistent**. Policy HZ-3.11 identifies that the County may assist unincorporated environmental justice focus areas in establishing special funding and financing mechanisms to provide community-desired public facilities and services, recreational facilities, sidewalks and bike trails, and access to fresh and healthy food.
Develop programs to encourage use of composting to enhance soil for carbon sequestration and soil healthy farms plans	**Consistent.** The County encourages residents to implement backyard composting. The County's SWMD provides guidance for households in the County to compost, including backyard composting workshops and trainings. The County also implements a green waste collection program.
Promote grazing management and animal dietary strategies to reduce methane emissions from enteric fermentation	**Not Applicable**. The County does not have direct or indirect control over grazing management on public lands or feed provided by agricultural land uses.
Require best management practices for livestock waste for confined animal facilities	**Consistent.** Policy NR-2.6 directs the County to coordinate with regional water quality control boards and other responsible agencies to regulate and

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	control animal waste and biosolids in order to protect groundwater and the natural environment.
Water	
Adopt water-efficient landscaping ordinances (see CALGreen Divisions 4.3 and 5.3), including the use of compost and mulch, to reduce water use and encourage use of greywater for landscaping, when available	**Consistent.** New development in the County is required to adhere to the state's Water Efficient Landscape Ordinance. The ordinance requires a minimum of 2 inch layer of mulch applied on all exposed soil surfaces (except turf areas, creeping or rooting groundcovers, or direct seed applications). Policy IU-1.9 also encourages water conserving site design and the use of water conserving fixtures.
Develop a plan requiring water recycling, and greywater and rain water reuse and provide funding for incentives and other program delivery mechanisms if feasible	**Consistent**. Policy IR-1.3 promotes use of recycled water for landscaping, groundwater recharge, direct potable reuse, and other applicable uses in order to supplement groundwater supplies. Policy IU-1.4 identifies that the County supports use of greywater systems for non-potable purposes. Policy IU-1.5 encourages water efficient irrigation and the use of non-potable and recycled water for agricultural uses. Policy IU-2.3 encourages an expansion of recycled water agreements between wastewater entities to share and/or create connections between wastewater systems to expand the use of recycled water.
Develop a plan to quantify and reduce GHG emissions at publicly operated treatment works (POTWs)	**Not Applicable**. The County does not operate wastewater treatments plants.
Develop a residential water efficiency auditing program	**Consistent**. The 2011 GHG Reduction Plan Measure R2WC1 identifies that the county will collaborate with water purveyors to implement conservation programs, including a water audit program that offers free audits to single-family, multi-family, large landscape accounts, and commercial customers. Additionally, the County has several service districts that provide water to residents and businesses. Customers within the County are eligible for rebates to increase water efficiency of appliances (bathroom faucets, toilets, and showerheads) and outdoor irrigation (spray nozzles and weather-based irrigation controllers). Policy IU-1.9 also directs the County to advocate for the adoption and implementation of water conservation strategies by water service agencies.
Create an incentive program to promote efficient water use projects	**Consistent**. Policy IU-1.9 encourages water conserving site design and the use of water conserving fixtures, and advocates for the adoption and implementation of water conservation strategies by water service agencies. Policy IR-1.3 also promotes use of recycled water for landscaping, groundwater recharge, direct potable reuse, and other applicable uses in order to supplement groundwater supplies. Policy IU-1.4 identifies that the County supports use of greywater systems for non-potable purposes. Policy IU-1.5 encourages water efficient irrigation and the use of non-potable and recycled water for agricultural uses. Policy IU-2.3 encourages an expansion of recycled water agreements between wastewater entities to share and/or create

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	connections between wastewater systems to expand the use of recycled water.
Eliminate Homeowner Association requirements for lawns and landscaping	**Consistent**. New development in the County is required to adhere to the state's Water Efficient Landscape Ordinance. The ordinance limits the amount of turf that can be installed. AB 349 also prohibits homeowner's associations from prohibiting artificial turf.
Work with local water agencies to evaluate the impact of proposed new developments and land use plans on groundwater and long-term water supply	**Consistent**. Policy IU-1.1 requires that new development be connected to a public water system or a County-approved well to ensure a resilient supply of water, even during a drought. AB 610 and SB 221 require that new regionally significant development ensure that sufficient water supply is available. Policy IU-1.9 also directs the County to advocate for the adoption and implementation of water conservation strategies by water service agencies.
Waste Management	
Prohibit disposal of organic materials at landfills and/or prohibit the jurisdictions' hauler(s) and self-haulers from taking organic material to landfills	**Consistent.** The County complies with SB 1383, which requires organic waste diversion targets for landfills to meet the state's Short-Lived Climate Pollutant Reduction Strategy. Policy IU-4.3 requires the County to meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce GHG emissions and use of natural resources through the reduction, reuse, or recycling of solid waste.
Require edible food recovery programs; require collected organic waste materials be used as feedstock for composting and anaerobic digestion; include assessment of 15 years organics recycling capacity needs in the General Plan; and provide appropriate zoning in compatible areas for large and community-scale composting and digestion operations	**Consistent.** AB 1826 requires businesses to recycle their organic waste depending on how much waste they generate per week. Additionally, AB 1826 requires the County to implement an organics waste recycling program for businesses. The 2011 GHG Reduction Plan Measure R3W4 directs the County to explore waste disposal alternatives, which include aerobic digestion of organic materials.
Implement residential and commercial waste prevention, recycling, organics collection, and edible food recovery programs to meet requirements of AB 341, AB 1826, and SB 1383	**Consistent.** The County adheres to the requirements of AB 341, AB 1826, and SB 1383. The County's SWMD manages landfill capacity and implements programs to divert waste from landfills, which includes recycling and organics/food waste collection.
Require generators of edible food to have contracts/agreements with food recovery organizations and prohibit edible food from being disposed or destroyed	**Consistent.** AB 1826 requires businesses to recycle their organic waste depending on how much waste they generate per week. Additionally, AB 1826 requires the County to implement an organics waste recycling program for businesses. The 2011 GHG Reduction Plan Measure R3W4 directs the County to explore waste disposal alternatives, which include aerobic digestion of organic materials.
Adopt ordinances to meet zero waste goals by 2020	**Consistent.** Policy IU-4.3 requires the County to meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce GHG emissions and use of natural resources through the reduction, reuse, or recycling of solid waste. The

Table 5.7-10 Consistency with the Local Actions in CARB's 2017 Scoping Plan

	2011 GHG Reduction Plan also requires the County to strengthen its Diversion Program to achieve a 75 percent waste reduction goal by 2020.
Adopt ordinances requiring hauling routes and fuels that minimize vehicle emissions compared to current practices (e.g., through use of renewable fuels, route optimization plan, etc.)	**Consistent.** The County contracts with several waste management agencies in the 21 franchise areas for refuse collection. Waste collection vehicles are required to be fuel efficient and must adhere to the California Air Resources Board's Solid Waste Collection Vehicle Rule. In addition, SCAQMD's Rule 1193 requires use of alternatively fueled refuse vehicles (e.g., CNG) for collection fleets.
Adopt a construction & demolition waste recycling ordinance (see CALGreen Divisions 4.4 and 5.4)	**Consistent**. CALGreen requires that construction contractors recycle and/or salvage a minimum of 65 percent of the nonhazardous construction and demolition waste.
Adopt an ordinance for zero waste from construction and demolition waste	**Consistent.** Policy IU-4.3 requires the County to meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce GHG emissions and use of natural resources through the reduction, reuse, or recycling of solid waste.
Adopt green building standards that include targets to exceed minimum State building standards for new construction, including requiring new construction to include bin space for organics recycling (see CALGreen Divisions 4.4 and 5.4 as well as Appendices A4.4 and A5.4)	**Consistent.** Per Policy NR-1.9, the County uses the CALGreen Code to meet energy efficiency standards for new buildings and encourages the upgrading of existing buildings to incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions. AB 1826 requires businesses to recycle their organic waste depending on how much waste they generate per week. Additionally, AB 1826 requires the County to implement an organics waste recycling program.
Require that landfills incorporate the financial impact of organics disposal reductions pursuant to SB 1383 into their Financial Assurance plans	**Consistent.** The County complies with SB 1383, which requires organic waste diversion targets for landfills to meet the state's Short-Lived Climate Pollutant Reduction Strategy. Policy IU-4.3 requires the County to meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce GHG emissions and use of natural resources through the reduction, reuse, or recycling of solid waste.
Create an effective solid waste management plan to reduce source generation and to divert waste from landfills to achieve emission reductions and address in General Plan	**Consistent.** Policy IU-4.3 requires the County to meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce GHG emissions and use of natural resources through the reduction, reuse, or recycling of solid waste. The County of SWMD manages landfill capacity and implements programs to divert waste from landfills.
Ensure compost materials meet standards to be used in rural lands application for carbon sequestration	**Consistent.** The County's SWMD provides guidance for households in the County to compost, including backyard composting workshops and trainings. The County also implements a green waste collection program.

Table 5.7-10 Consistency with the Local Actions in CARB's 2017 Scoping Plan

Expand anaerobic digestion capacity at existing wastewater treatment plants to allow them to accept food waste	**Consistent.** AB 1826 requires businesses to recycle their organic waste depending on how much waste they generate per week. Additionally, AB 1826 requires the County to implement an organics waste recycling program for businesses. The 2011 GHG Reduction Plan Measure R3W4 directs the County to explore waste disposal alternatives, which include aerobic digestion of organic materials.
Require zero waste at public events, including food recovery and recycling	**Consistent.** Policy IU-4.3 requires the County to meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce GHG emissions and use of natural resources through the reduction, reuse, or recycling of solid waste. Additionally, AB 1826 requires the County to implement an organics waste recycling program for businesses.
Require food waste reduction at commercial facilities such as restaurants, hotels, hospitals, etc., including food donations	**Consistent.** AB 1826 requires businesses to recycle their organic waste depending on how much waste they generate per week. Additionally, AB 1826 requires the County to implement an organics waste recycling program for businesses.
Require large commercial landscapers and public projects to use compost-based nutrients and soil amendments on landscaping and plants instead of artificial fertilizers and soil amendments	**Consistent.** The County encourages residents to implement backyard composting. The County's SWMD provides guidance for households in the County to compost, including backyard composting workshops and trainings. The County also implements a green waste collection program. New development in the County is required to adhere to the state's Water Efficient Landscape Ordinance. The ordinance requires a minimum 2-inch layer of mulch applied on all exposed soil surfaces (except turf areas, creeping or rooting groundcovers, or direct seed applications). Soil amendments are also required to adhere to the recommendations in the soil report based on what is appropriate for the plants selected.
Implement recycled content procurement practices in all operations	**Consistent.** Policy IU-4.3 requires the County to meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce GHG emissions and use of natural resources through the reduction, reuse, or recycling of solid waste. The 2011 GHG Reduction Plan also requires the County to strengthen its Diversion Program to achieve a 75 percent waste reduction goal, including by encouraging businesses in the County to adopt a voluntary procurement standard prioritizing products that have less packaging or are re-usable, recyclable, or compostable.
Implement a plan for food recovery for municipal food operations	**Consistent.** AB 1826 requires businesses to recycle their organic waste depending on how much waste they generate per week. Additionally, AB 1826 requires the County to implement an organics waste recycling program.

Table 5.7-10 Consistency with the Local Actions in CARB's 2017 Scoping Plan

Establish waste diversion programs like "pay as you throw" where people pay per pick up amount	**Consistent.** The County's SWMD is responsible for the operation and management of the solid waste disposal system. The disposal system consists of five regional landfills and nine transfer stations. SWMD maintains disposal fees based on waste generated by pound as well as handling fees for waste disposed of at County landfills. The 2011 GHG Reduction Plan Measure R2W6 requires the County to strengthen its diversion program to achieve a 75 percent waste reduction goal, including by increasing disposal fees.
Short-Lived Climate Pollutants	
Require biogas generation at wastewater treatment plants and methane capture at landfill facilities	**Consistent**. The County supports bioenergy systems that are consistent with the orientation, siting, and environmental compatibility policies of the Countywide Plan (Policy RE-2.1). The County also supports use of emergency technologies for renewable energy (RE-2.3). The 2011 GHG Reduction Plan includes Measure R3E9, which states the County will work with state and federal agencies to identify sites suitable for renewable resources such as biogas. Measure R3W1 directs the County to install methane capture systems at landfills with 250,000 or more tons of waste-in-place. Measure R2W1 includes increased methane recovery at the Mid-Valley (95 percent), Milliken (85 percent), and Colton Landfills (85 percent), and Measures R2W2 and R2W3 identify the methane recovery at the Barstow and Landers methane recovery facilities.
Require that air conditioning and refrigeration units in new construction (and at major renovation) rely on refrigerants with low global warming potential (e.g., they use CO_2 or ammonia instead of hydrofluorocarbons)	**Consistent**. Heating, ventilation, and air conditioning (HVAC) systems sold and installed in California must meet the federal Clean Air Act, Section 608 requirements on CFCs and HCFCs and the state's California Appliance Efficiency Regulations (Title 20 or the California Code of Regulations).
Promote alternatives to open pile burning as disposal options for woody biomass wastes	**Consistent.** Open outdoor fires (agricultural burning) are prohibited under MDAQMD and SCAQMD Rule 444, except with a valid permit under MDAQMD and SCAQMD Rule 208. Pursuant to Rule 444, open burning requires a smoke management plan (MDAQMD for site more than 10 acres in size) or burn management plan (SCAQMD).
Support hazardous fuel reduction, defensible space clearing and forest fuel reduction in rural forested areas with high tree mortality and unnaturally high fuel loads to reduce the size and severity of catastrophic wildfires which reduces the release non-anthropogenic black carbon and methane	**Consistent.** Development in high fire hazards areas and very high fire hazards areas are required to adhere to defensible space clearing requirements. The County requires new development in the Fire Safety Overlay to comply with additional site design, building, and access standards to provide enhanced resistance to fire hazards (Policy PP 3-7). Policy NR-3.3 also directs the County to coordinate with public and nongovernmental agencies to sustainably manage and conserve land within or adjacent to locally, state, or federally designated open space or resource conservation areas.

Table 5.7-10 Consistency with the Local Actions in CARB's 2017 Scoping Plan

Adopt use of low global warming potential (GWP) alternative refrigerants	**Consistent**. Heating, ventilation, and air conditioning (HVAC) systems sold and installed in California must meet the federal Clean Air Act, Section 608 requirements on CFCs and HCFCs and the state's California Appliance Efficiency Regulations (Title 20 or the California Code of Regulations).
Work with local utility and waste management agencies to adopt a curbside program for old refrigerators, air-conditioning units, and automobiles to ensure proper disposal of refrigerants	**Consistent.** Many appliance retailers pick up and recycle an old fridge when customers purchase a new one. The County contracts with several waste management agencies in the 21 franchise areas for refuse collection. Many of the waste haulers offer a household bulky item pick up to residents in the County, including refrigerators and air conditioning units.
Adopt programs, ordinances, or regulations to reduce wood smoke from residents, commercial, and recreational activities	**Consistent.** CALGreen requires gas fireplaces to be direct vent-sealed-combustion fireplaces and requires that woodstoves or pellet stoves comply with U.S. EPA New Source Performance Standards (NSPS) emission limits. SCAQMD has a woodstove and fireplace change out incentive program that residents in the SoCAB portions of the County can participate in to convert wood burning devises to gas fireplaces.
Require alternatives to wood heating such as heat pumps or gas heating devices in new developments, in appropriate climate zones, where infrastructure is available	**Consistent.** The 2011 GHG Reduction Plan, GHG Goal EE 1, directs the County to reduce GHG emissions from the generation of electricity by reducing electricity use through increased efficiency and project design that incorporates renewable energy. There are several measures that are identified to promote energy efficiency in existing buildings. For example, the Green County Program waives fees for projects that make an existing home or business more energy-efficient (Measure R3E1). Measure R2E3-INT also directs the County to increase the use of Combined Heat and Power Systems (CHP), such as at the Arrowhead Regional Medical Center.
Provide incentives to reduce wood smoke by changing out uncertified wood heating devices to gas, electric, or pellet devices	**Consistent.** CALGreen requires gas fireplaces to be direct vent-sealed-combustion fireplaces and requires that woodstoves or pellet stoves comply with U.S. EPA New Source Performance Standards (NSPS) emission limits. SCAQMD has a woodstove and fireplace change out incentive program that residents in the SoCAB portions of the County can participate in to convert wood burning devises to gas fireplaces.
Implement organics waste prevention, recycling, and food recovery programs	**Consistent.** AB 1826 requires businesses to recycle their organic waste depending on how much waste they generate per week. Additionally, AB 1826 requires the County to implement an organics waste recycling program for businesses. The 2011 GHG Reduction Plan Measure R3W4 directs the County to explore waste disposal alternatives, which include aerobic digestion of organic materials.

Table 5.7-10 Consistency with the Local Actions in CARB's 2017 Scoping Plan

Green Buildings	
When determined to be feasible and achievable within the local jurisdiction, adopt "Tier 2" residential and commercial green building standards of the California Green Building Standards (CALGreen Code[2]), or a third party green building rating systems such as the LEED or GreenPoint Rated for new construction and existing building retrofits. CALGreen allows a local jurisdiction to adopt "Tier 2" as a more restrictive option. The California Health and Safety Code also allows local jurisdictions to adopt more restrictive building standards based on local conditions. Local jurisdictions also may adopt green rating systems, but in addition to the mandatory CALGreen requirements	**Consistent.** The new 2019 CALGreen standards, which were adopted May 9, 2018, and will become effective on January 1, 2020, no longer include a "percent better than" approach under the Voluntary standards for residential buildings now that the Mandatory Standards require near-zero energy. Instead, the residential Tier 2 requires that residential buildings meet or be less than a target Energy Design Rating (EDR) based on the climate zone. Because the residential code now requires renewable energy, the options to achieve the Tier 2 standards in the 2019 code include electrifying space and water heating, advanced electric battery controls, and modest oversizing of the photovoltaic system. The non-residential standards maintain the "percent better than." The County's Renewable Energy & Conservation Element encourages implementation of the Voluntary standards of CALGreen by supporting renewable energy systems that accelerate ZNE (Policy RE-2.5).
Incentivize implementation of CALGreen Code building code voluntary provisions to divert and recycle construction and demolition waste, and use locally-sourced building materials and recycled content building materials, including mulch/compost, to the extent possible	**Consistent.** CALGreen requires that construction contractors recycle and/or salvage a minimum of 65 percent of the nonhazardous construction and demolition waste. Policy IU-4.3 requires the County to meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce GHG emissions and use of natural resources through the reduction, reuse, or recycling of solid waste. The 2011 GHG Reduction Plan Measure R2W6 requires the County to strengthen its diversion program to achieve a 75 percent, including by requiring new development to use materials with recycled content or sourcing construction materials locally and encourages the use of cement substitutes and recycled building materials for new construction.
Adopt Guidelines for incentivizing new buildings to maximize energy conservation designs to promote passive solar energy generation, natural ventilation, effective use of daylight, and on-site electricity generation	**Consistent**. The latest Building and Energy Efficiency Standards adopted by the CEC reduce energy use in new homes by 50 percent. The standards, which become effective January 1, 2020, require new homes to have solar photovoltaic systems and include updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa), residential and nonresidential ventilation requirements, and nonresidential lighting requirements. CALGreen also requires use of daylight spaces to reduce energy use. The County's Renewable Energy & Conservation Element includes several policies supporting energy efficiency and renewable energy in buildings (Policies RE-1.4, RE-2.1, RE-2.5, RE-2.6, RE-3.1, and RE-6.7)

Table 5.7-10 Consistency with the Local Actions in CARB's 2017 Scoping Plan

Encourage the use of on-site renewable energy combined with storage	**Consistent**. The County's Renewable Energy & Conservation Element includes several policies supporting renewable energy in buildings (Policies RE-2.1, RE-2.5, RE-3.1, and RE-6.7). Policy RE-2.2 identifies that the County will promote use of energy storage technologies that are appropriate for the character of the proposed location.
Link green building with transportation planning to encourage lowest possible transportation impacts	**Consistent**. Policy TM-3.2 identifies that the County supports the implementation of transportation demand management techniques, mixed use strategies, and the placement of development in proximity to job and activity centers to reduce the number and length of vehicular trips.
Develop strategies and goals to reduce urban heat islands through cool roofs, urban forestry (shade trees) and cool non-roof surfaces, including covered parking areas with PV systems to provide shading	**Consistent**. The County's Renewable Energy & Conservation Element includes several policies supporting energy efficiency in buildings (Policies RE-1.4, RE-2.5, and RE-2.6). The California Building and Energy Standards require roofs to achieve the solar reflectance and thermal emittance values to reduce cooling costs. The County's 2011 GHG Reduction Plan also directs the County to pursue LEED Silver Certification for all new buildings and install renewable energy sources on County-owned buildings. Both the County's High Desert Government Center and the Bob Burke Joshua Tree Government Center include solar carports. The 2011 GHG Reduction Plan also includes Measure R3NR3 that directs the County to evaluate the feasibility of expanding its tree planting in the County.
Require cool roofs and/or green roofs on new construction, for all buildings or a subset (commercial, multi-family, etc.) of building types	**Consistent**. See above. The County's Renewable Energy & Conservation Element includes several policies supporting energy efficiency in buildings (Policies RE-1.4, RE-2.5, and RE-2.6). The California Building and Energy Standards require roofs to achieve the solar reflectance and thermal emittance values to reduce cooling costs.
Require cool paving and/or light reflective permeable surfaces in sidewalks, patios, driveways, parking lots, or other paved areas.[3]	**Consistent**. The County's Renewable Energy & Conservation Element includes several policies supporting energy efficiency in new construction (Policies RE-1.4, RE-2.5, and RE-2.6). Per Policy NR-1.9, the County uses the CALGreen Code to meet energy efficiency standards for new buildings and encourages the upgrading of existing buildings to incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions.

Source: CARB 2017, Appendix B.

Notes:

[1] When the local government adopts green building standards that exceed the minimum standards, they become mandatory at the local level.

[2] Title 24 Part 11 of the California Code of Regulations (i.e., CALGreen Code) establishes both mandatory and voluntary building standards. It is published in its entirety every three years and may also include supplements published in intervening years. The most current code requirements should be consulted in determining mandatory versus voluntary provisions (http://www.bsc.ca.gov/Home.aspx).

[3] A recent CARB-funded study conducted life-cycle assessments of conventional and cool pavements and developed a decision-support tool for local governments to use when considering different pavement materials. The study found that in many communities, cool pavements help to mitigate the urban heat island effect, but the energy and emissions embodied in cool pavement materials can exceed the expected energy and emissions savings from reduced cooling and heating in buildings. However, reflective pavements offer a one-time global cooling benefit that exceeds the 50-year lifecycle carbon penalty.

SCAG's Regional Transportation Plan/Sustainable Communities Strategy

As identified in Section 5.10, *Land Use and Planning*, implementation and adoption the Countywide Plan goals and policies would ensure consistency with the 2016 SCS/RTP by encouraging multi-modal transportation opportunities. Therefore, implementation of the Countywide Plan would not conflict with the RTP/SCS, and the impact would be less than significant.

Level of Significance before Mitigation: With the implementation of RR GHG-1 through RR GHG-5 and General Plan Policies, Impact 5.7-2 would be less than significant.

5.7.5 Cumulative Impacts

Project-related GHG emissions are not confined to a particular air basin, but are dispersed worldwide. Therefore, impacts identified under Impact 5.7-1 and Impact 5.7-2 are not Project-specific impacts to global warming, but the proposed Project's contribution to this cumulative impact. As discussed above, the unincorporated areas in the County would experience a reduction in GHG emissions from existing conditions despite the anticipated population and employment growth. However, the unincorporated County would not achieve the state's GHG emissions efficiency target without implementation of additional local GHG reduction measures. Goals and policies in the Countywide Plan and actions in the County's GHG Reduction Plan would further minimize GHG emissions generated by the residential and nonresidential land uses in the unincorporated County. However, the County cannot achieve the efficiency targets without additional federal and state reductions. The state's climate stabilization goals are contingent on decarbonization of the state's transportation and energy sectors. Consequently, the Project's cumulative contribution to global climate change impacts are cumulatively considerable.

5.7.6 Level of Significance Without Mitigation

With the implementation of RR GHG-1 through RR GHG-5 and General Plan Policies, Impact 5.7-2 would be less than significant.

Without mitigation, Impact 5.7-1 would be **potentially significant**:

- **Impact 5.7-1:** The County of San Bernardino would experience a decrease in GHG emissions from existing conditions but would not achieve the GHG reduction targets established under SB 32 or Executive Order B-03-05.

5.7.7 Mitigation Measures

Impact 5.7-1

MM GHG-1 Within 18 months of adoption of the Countywide Plan, the County of San Bernardino shall update the County of San Bernardino GHG Reduction Plan. The plan shall provide:

- GHG inventories of existing, 2030, and 2050 GHG levels

- Targets for 2030 and 2050 from land uses under the County's jurisdiction based on the goals of SB 32 and Executive Order S-03-05
- Tools and strategies for reducing GHG emissions in accordance with the 2030 goal

In addition, to implement the GHG Reduction Strategy, the County shall develop key programs, and policies required to promote voluntary, incentive-based measures in the plan, establish the planning framework for the performance-based development review process, and support and implement the local mandatory GHG reduction measures. These implementation tasks include:

- Update the community GHG inventory to monitor emissions trends every five years.
- In 2030, develop a plan for post-2030 actions.

MM GHG-2 Prior to adoption of the Unincorporated County of San Bernardino's GHG Reduction Plan update, the County of San Bernardino shall designate an Implementation Coordinator to oversee the successful implementation of all selected GHG reduction strategies. The primary function of the Implementation Coordinator will be to create a streamlined approach to manage implementation of the GHG Reduction Plan.

MM GHG-3 Prior to adoption of the Unincorporated County of San Bernardino's GHG Reduction Plan update, for projects with a post-2020 buildout date that have potentially significant impacts, the County of San Bernardino shall consider the following measures identified in the 2017 Scoping Plan:

Construction

- Enforce idling time restrictions for construction vehicles.
- Require construction vehicles to operate with the highest tier engines commercially available.
- Divert and recycle construction and demolition waste, and use locally-sourced building materials with a high recycled material content to the greatest extent feasible.
- Minimize tree removal, and mitigate indirect GHG emissions increases that occur due to vegetation removal, loss of sequestration, and soil disturbance.
- Utilize existing grid power for electric energy rather than operating temporary gasoline/diesel powered generators.
- Increase use of electric and renewable fuel powered construction equipment and require renewable diesel fuel where commercially available.
- Require diesel equipment fleets to be lower emitting than any current emission standard.

Operation

- Comply with County's standards for mitigating transportation impacts under SB 743.
- Require on-site EV charging capabilities for parking spaces serving the project to meet jurisdiction-wide EV proliferation goals.
- Allow for new construction to install fewer on-site parking spaces than required by the County Development Code as an incentive to provide pedestrian, transit and bicycle amenities, if appropriate.
- Dedicate on-site parking for shared vehicles.
- Provide adequate, safe, convenient, and secure on-site bicycle parking and storage in multi-family residential projects and in non-residential projects.
- Provide on- and off-site safety improvements for bike, pedestrian, and transit connections, and/or implement relevant improvements identified in an applicable bicycle and/or pedestrian master plan.
- Require on-site renewable energy generation.
- Prohibit wood-burning fireplaces in new development, and require replacement of wood-burning fireplaces or clean-burning inserts for renovations over a certain size.
- Require cool roofs and "cool parking" that promotes cool surface treatment for new parking facilities as well as existing surface lots undergoing resurfacing.
- Require solar-ready roofs.
- Require organic collection in new developments.
- Require low-water landscaping in new developments (see CALGreen Divisions 4.3 and 5.3 and the Model Water Efficient Landscape Ordinance [MWELO], which is referenced in CALGreen). Require water efficient landscape maintenance to conserve water and reduce landscape waste.
- Encourage Zero Net Energy performance building standards prior to dates required by the Energy Code.
- Encourage new construction, including municipal building construction, to achieve third-party green building certifications, such as the GreenPoint Rated program, LEED rating system, or Living Building Challenge.
- Encourage additional bike lanes to connect to the regional bicycle network.
- Expand urban forestry and green infrastructure in new land development.
- Require preferential parking spaces to incentivize carpooling, vanpooling, commuter bus, electric vehicles, and rail service use.

- Require a transportation management plan for specific plans which establishes a numeric target for non-SOV travel and overall VMT.
- Develop a rideshare program targeting commuters to major employment centers.
- Require the design of bus stops/shelters/express lanes in new developments to promote the usage of mass transit, where available.
- Require gas outlets in residential backyards for use with outdoor cooking appliances such as gas barbeques if natural gas service is available.
- Require the installation of electrical outlets on the exterior walls of both the front and back of residences to promote the use of electric landscape maintenance equipment.
- Require the design of the electric outlets and/or wiring in new residential unit garages to promote electric vehicle usage.
- Require parking lot designs to accommodate electric vehicle charging stations (conductive/inductive) and signage for non-residential developments.
- Provide electric outlets to promote the use of electric landscape maintenance equipment to the extent feasible on parks and public/quasi-public lands.
- Require each residential unit to be "solar ready," including installing the appropriate hardware and proper structural engineering.
- Require the installation of energy conserving appliances such as on-demand tank-less water heaters and whole-house fans.
- Require each residential and commercial building equip buildings with energy efficient AC units and heating systems with programmable thermostats/timers.
- Require large-scale residential developments and commercial buildings to report energy use, and set specific targets for per-capita energy use.
- Require each residential and commercial building to utilize low flow water fixtures such as low flow toilets and faucets (see CALGreen Divisions 4.3 and 5.3 as well as Appendices A4.3 and A5.3).
- Require the use of energy-efficient lighting for all street, parking, and area lighting.
- Require the landscaping design for parking lots to utilize tree cover and compost/mulch.
- Incorporate water retention in the design of parking lots and landscaping, including using compost/mulch.
- Require the development project to propose an off-site mitigation project which should generate carbon credits equivalent to the anticipated GHG emission reductions. This would be implemented via an approved protocol for carbon credits from California Air

Pollution Control Officers Association (CAPCOA), the California Air Resources Board, or other similar entities determined acceptable by the local air district.

- Require the project to purchase carbon credits from the CAPCOA GHG Reduction Exchange Program, American Carbon Registry (ACR), Climate Action Reserve (CAR) or other similar carbon credit registry determined to be acceptable by the local air district.
- Encourage the applicant to consider generating or purchasing local and California-only carbon credits as the preferred mechanism to implement its off-site mitigation measure for GHG emissions and that will facilitate the state's efforts in achieving the GHG emission reduction goal.

5.7.8 Level of Significance After Mitigation

Impact 5.7-1

As identified in Tables 5.7-8 and 5.7-9, implementation of the Countywide Plan would not result in a substantial magnitude of GHG emissions. However, GHG emissions impacts are also based on consistency with the GHG reduction objectives under SB 32 and Executive Order S-03-05. As identified in the tables above, the unincorporated County would not achieve the state's GHG emissions efficiency target for year 2040 or 2050 without implementation of additional local GHG reduction measures. Implementation of the policies and actions of the Countywide Plan, combined with Mitigation Measures GHG-1 through GHG-3, would reduce GHG emissions to the extent feasible. Adherence to the County's GHG Reduction Plan would also reduce GHG emissions in the unincorporated communities to meet the year 2020 AB 32 reduction target. Mitigation Measure GHG-1 would require the County to update the GHG Reduction Plan to the 2030 horizon to ensure consistency with the goals of SB 32. However, additional federal, state, and local measures would be necessary to reduce GHG emissions to meet the long-term GHG efficiency goals identified in the 2017 Scoping Plan. At this time, there is no plan past 2030 that achieves the long-term climate stabilization goal established under Executive Order S-03-05. As identified by the California Council on Science and Technology (2012), the state cannot meet the 2050 goal without major advancements in technology. Since no additional statewide measures are currently available, Impact 5.7-1 would be **significant and unavoidable**.

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5. Environmental Analysis
GREENHOUSE GAS EMISSIONS

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