5.21 CLIMATE CHANGE

5.21.1 INTRODUCTION

Purpose

The County of Los Angeles Department of Regional Planning Environmental Checklist Form, which has been prepared pursuant to the California Environmental Quality Act (CEQA), requires that greenhouse gas (GHG) emissions issues be evaluated as part of the environmental documentation process. Because the effects of GHG emissions are considered in a global context, that is, global warming and climate change, GHG emissions are generally addressed as a cumulative issue. However, plan-level direct and indirect impacts are also addressed. Growth-inducing impacts and cumulative impacts are described in Sections 6.0 and 7.0 of this Environmental Impact Report (EIR), respectively. Because the topic of climate change is most appropriately considered on a cumulative level, the impact analysis in this EIR section is fundamentally a cumulative analysis. Therefore, the discussion in Section 7.0, Cumulative Impacts, presents a summary of the conclusions of this section.

Summary

The County acknowledges the consensus among leading scientists that without action to reduce GHG emissions, climate change due to global warming will pose a considerable threat to the environment and to human health and society (DRP 2015a). The *Final Unincorporated Los Angeles County Community Climate Action Plan 2020* (CCAP) is part of the County General Plan and was adopted along with the General Plan on October 6, 2015.

In accordance with CEQA Guidelines 15183.5(b), the CCAP provides that projects that "demonstrate consistency with applicable CCAP actions can be determined to have a less than significant cumulative impact on GHG emissions and climate change". The Project's design concepts are consistent with the CCAP, as summarized in Table 5.21-11, Centennial Project Compliance With Los Angeles County Community Climate Action Plan. The Project's Green Development Program includes elements specifically created to reduce GHG emissions. These elements are delineated in the analysis below as project design features (PDFs). The analysis of Project consistency with each of the CCAP goals and policies shows that the Project is consistent with the CCAP.

Additional analysis under Threshold 21-1, and in Section 5.8, Land Use, Entitlements, and Planning, and in Table 5.8-1, shows that the Project would not conflict with applicable goals and policies of the Antelope Valley Area Plan (AVAP). Moreover, the analysis under Threshold 21-2 below shows that the Project would not conflict with the Southern California Association of Governments (SCAG) 2012–2035 Regional Transportation Plan Sustainable Communities Strategy (RTP/SCS) and 2016–2040 RTP/SCS.

The quantification of greenhouse gas emissions as calculated through the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 estimates that the Project at buildout in 2035 would have GHG emissions of approximately 244,379 metric tons of carbon dioxide equivalent ($MTCO_2e$) per year as shown in Table 5.21-1. Project GHG emissions as

shown in column 2 (Emissions $MTCO_2e$) of Table 5.21-1 include quantified reductions from project design features and mitigation measures (e.g., mixed use development community design, solar electricity generation, etc.), as further discussed in Section 5.21.6, Environmental Impacts. This total includes amortized emissions from the construction period, the loss of carbon-sequestering vegetation, and the planting of carbon-sequestering trees.

TABLE 5.21-1
OPERATIONAL AND TOTAL GHG EMISSIONS

GHG Sources	Emissions $MTCO_2e$	Percent of Operational Emissions
Operational	239,215	
Area	11,297	5%
Energy	49,414	21%
Mobile	160,904	67%
Solid waste	10,214	4%
Water	7,387	3%
Construction	*4,490*	
Vegetation loss	922	
New trees	-249	
Total	**244,379**	
AVAQMD Project-Level CEQA Significance Threshold	***100,000***	
Exceeds threshold?	Yes	
Service population (SP)	80,825	
GHG Efficiency	**3.02**	
SCAQMD Plan-Level Staff-Proposed GHG Efficiency Threshold ($MTCO_2e$/SP/Year)	***4.1***	
Exceeds threshold?	No	
SCAQMD Project-Level Staff-Proposed GHG Efficiency Threshold ($MTCO_2e$/SP/Year)	***3.0***	
Exceeds threshold?	Yes	

GHG: greenhouse gas; $MTCO_2e$/yr: Metric tons of carbon dioxide equivalent per year; AVAQMD: Antelope Valley Air Quality Management District; CEQA: California Environmental Quality Act; SCAQMD: South Coast Air Quality Management District.

Emissions calculations can be found in Appendix 5.11-A.

As discussed further in Section 5.21.2, in 2016 the California Supreme Court reviewed a quantitative GHG significance threshold (29% below "Business as Usual") in a CEQA lawsuit challenging the Newhall master planned community project, and determined that the state agency respondent's reliance on this quantitative GHG threshold was not appropriate because it was a statewide GHG reduction threshold, and the record lacked substantial evidence in support of the use of this threshold for the particular land use project at issue in that lawsuit. The AVAQMD GHG threshold was adopted, and the SCAQMD GHG threshold

was proposed by staff but never adopted, prior to this Supreme Court decision; neither of these agencies included substantial evidence in the public record justifying the use of their respective quantitative thresholds for particular types of projects. However, for informational purposes, Table 5.21-1 also shows that Project GHG emissions would exceed the AVAQMD 100,000 $MTCO_2e$ per year project-level threshold. The Project's service population is estimated at 57,150 residents and 23,675 employees for a total of 80,825 at Project buildout. Also, for informational purposes, Table 5.21-1 shows that the Project's GHG efficiency would be 3.02, which would not exceed the SCAQMD-staff-proposed "plan-level" 4.1 GHG efficiency threshold, but would exceed the SCAQMD-staff-proposed "project-level" 3.0 GHG efficiency threshold.

The Project would be consistent with the CCAP, the SCAG 2012–2035 and 2016–2040 RTP/SCS, and regulatory measures designed to reduce GHG emissions. Additionally, the Project is consistent with the SCAQMD's staff's proposed draft efficiency threshold for the AVAP.

As discussed in detail in Section 5.21.6, based on the Project's consistency with the CCAP, the SCAG 2012–2035 and 2016–2040 RTP/SCS, and based on its compliance with applicable GHG-reducing regulatory measures, the Project could be found to have a less than significant impact on GHG. However, climate change is a global phenomenon and the significance of GHG emissions is most appropriately considered on a cumulative level. The Project would emit GHGs at an estimated rate of 244,379 metric tons per year and would contribute to the global inventory of GHGs.

To date, the vast majority of other States and nations have not followed California's lead in mandating GHG emission reductions across a broad spectrum of economic sectors and have not enacted regulations similar to those adopted in California, which already has nearly the lowest level of GHG per capita of any state. The County of Los Angeles has no jurisdictional control or responsibility for GHG reductions in other parts of California, and certainly not in the context of global action. Moreover, due to the County's limited jurisdiction over many GHG reduction measures required in both the CCAP and the RTP/SCS, and with respect to the many GHG-reducing regulatory programs implemented at the State level, the County lacks the requisite level of jurisdiction and control to ensure that all such measures and programs will be fully implemented as planned by third party agencies and private parties. Therefore, because of the global context of GHG emissions which are outside the County's jurisdiction and control, and because the of Project's forecasted GHG emission rate, the project's incremental contribution to the cumulative environmental impact related to GHG emissions is conservatively determined to be cumulatively considerable and this significant cumulative impact would be significant and unavoidable.

All reasonable and feasible measures to maximize project GHG emissions reduction to the greatest extent feasible are described in Section 5.21.7.

Section Format

This section of environmental analysis includes a description of the state of the science of climate change; a discussion of the regulatory setting; a description of the related PDFs

incorporated into the Project to minimize Project impacts; identification of thresholds of significance (or lack thereof); the GHG inventory; and analysis of the Project's potential individual and cumulative effects and identification of significant impacts:

- Introduction
    - Purpose
    - Summary
    - Section Format
    - Global Climate Change
- Relevant Plans, Policies, and Regulations
- Environmental Setting
- Project Design Features
- Threshold Criteria
- Environmental Impacts—A separate analysis is provided for each of the following categories of potential impacts:
    - On-Site Impacts
    - Off-Site Impacts
- Mitigation Measures
- Level of Significance After Mitigation
- References

Global Climate Change

Global climate change is a broad term used to describe any worldwide, long-term change in the Earth's climate. Global climate change refers to an increase in temperatures across the Earth due to human and industrial activity. Climate change, in addition to rising temperatures, can cause other climatic changes, such as a shift in the frequency and intensity of weather events such as rainfall or hurricanes, but it does not necessarily imply that all locations will be warmer. In fact, with global climate change, some locations will have climate patterns that may change in a way that makes the locations colder than average temperatures.

Climate change is a recorded change in the Earth's average weather measured by variables such as wind patterns, storms, precipitation, and temperature. Historical records show that global temperature changes have occurred naturally in the past, such as during previous ice ages. The year 2014 ranks as Earth's warmest year since 1880, and the 10 warmest years in the instrumental record, with the exception of 1998, have now occurred since 2000. The average global temperature has risen about 1.4 degrees Fahrenheit (°F) (0.8 degrees Celsius [°C]) since 1880 (NASA 2015).

The global atmospheric concentration of carbon dioxide (CO_2), the most abundant GHG, has increased from a pre-industrial (roughly 1750) value of about 280 parts per million (ppm) to a seasonally-adjusted 405.75 ppm in February 2017, primarily due to fossil fuel use, with land use change providing a significant but smaller contribution. The annual CO_2 concentration growth rate during the ten-year period between 1995 and 2005 was larger

than the growth rate from the beginning of continuous direct measurements in 1960 to 2005 (ESRL 2017).

Greenhouse Gases

GHGs, as defined by the United States Environmental Protection Agency (USEPA) and California Air Resources Board (CARB), include CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). GHGs are global pollutants and are therefore unlike criteria air pollutants such as ozone (O_3), particulate matter (respirable particulate matter with a diameter of 10 microns or less [PM10] and fine particulate matter with a diameter of 2.5 microns or less [PM2.5]), and toxic air contaminants (TACs), which are pollutants of regional and local concern (see Section 5.11, Air Resources, of this EIR). While pollutants with localized air quality effects have relatively short atmospheric lifetimes (generally on the order of a few days), GHGs have relatively long atmospheric lifetimes, ranging from one year to several thousand years. Long atmospheric lifetimes allow for GHGs to disperse around the globe. Therefore, GHG effects are global, as opposed to the local and/or regional air quality effects of criteria air pollutant and TAC emissions.

Global warming potential (GWP) is a term used to indicate, on a pound for pound basis, how much a gas will contribute to global warming relative to how much warming would be caused by the same mass of CO_2. As the baseline for measuring GWP, CO_2 is considered to have a GWP equal to one. CH_4 and N_2O are substantially more potent than CO_2 with GWPs of 25 and 298, respectively. (Prior values of 21 and 310 were from the Intergovernmental Panel on Climate Change [IPCC] second assessment report; CARB has adopted the current values from the IPCC's fourth assessment report.) Carbon dioxide equivalent (CO_2e) is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the quantity of that gas to produce CO_2e.

The Greenhouse Effect

In a greenhouse, sunlight enters through the glass panels, and the heat from the sunlight is then trapped inside the structure. The Earth's atmosphere acts like a greenhouse by allowing sunlight in, but traps some of the heat that reaches the Earth's surface. When solar radiation from the sun reaches the Earth, much of it penetrates the atmosphere and ultimately reaches the Earth's surface. This solar radiation is absorbed by the Earth's surface and is then re-emitted as heat in the form of infrared radiation. Whereas the GHGs in the atmosphere let solar radiation through, GHGs trap infrared radiation, resulting in the overall warming of the Earth's surface.[1] This phenomenon is referred to as the "greenhouse effect".

Concentrations of major greenhouse gases, such as CO_2, CH_4, N_2O, and water vapor (H_2O) have been naturally present for millennia at relatively stable levels in the atmosphere, and act to keep temperatures on Earth hospitable. Without these GHGs, the earth's temperature would be too cold for life to exist. With increased human industrial activity, concentrations of certain GHGs have grown dramatically. In the absence of major industrial human activity,

1 Infrared radiation has longer wavelengths than does solar radiation. GHGs reflect radiation with longer wavelengths. As a result, instead of escaping back into space, GHGs reflect much infrared radiation (i.e., heat) back to Earth.

natural processes maintain atmospheric GHG concentrations at relatively stable levels, which have allowed global temperatures to remain at constant levels over the last several centuries. As the concentrations of GHGs have increased as a result of human industrial activity, the amount of infrared radiation that is trapped has increased, thereby increasing the Earth's average temperature.

5.21.2 RELEVANT PLANS, POLICIES, AND REGULATIONS

Many legal requirements applicable to greenhouse gas and climate change continue to be expanded and modified. This subsection presents a summary of applicable international laws (national treaties followed by sub-national agreements), federal laws, regulations and other actions, state laws, regulations, and other actions, and then local (regional and County) laws, regulations and other actions. Many of these legal requirements emerged over time through a combination of executive or agency actions, court decisions, regulations, enacted statutes, and approved plans. This regulatory background discussion includes a broader range of legal authorities than is included in other topical sections; is focused on the most significant of these measures; and based on the continuing evolution of these requirements within each category, is generally organized chronologically from earliest to most recent.

International

International Treaties and Other Developments

The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. It was adopted in Kyoto, Japan, on December 11, 1997, and entered into force on February 16, 2005. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions. The targets amount to an average of five percent reduction against 1990 levels over the 2008–2012 five-year period. The major distinction between the Protocol and the Convention is that, while the Convention encouraged industrialized countries to stabilize GHG emissions, the Protocol commits them to do so. Recognizing that developed countries are principally responsible for the current high levels of GHG emissions in the atmosphere as a result of more than 150 years of industrial activity, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities" (UN 1997). The United States has not ratified the Kyoto Protocol. A $^2/_3$ majority vote in the Senate is required for approval. As long as the United States has not ratified the treaty, it is not subject to its terms and obligations.

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

The 21st session of the Conference of Parties (COP21) took place from November 30, 2015 to December 11, 2015, in Paris, France. The session included representatives from 196 parties

to the United Nations Framework Convention on Climate Change. Outcomes from COP21 include, but are not limited to, limiting global temperature increase well below 2°C; establishing binding commitments by all parties to make Nationally Determined Contributions (NDC) and to pursue domestic policies aimed at achieving NDCs; and regular reporting by all countries on their emissions and progress made in implementing and achieving their NDCs (UN 2016). The continued commitment of the United States to the Paris Treaty was among the issues addressed in the 2016 Presidential election, with President Trump stating in some contexts his position that the United States should withdraw from the Paris treaty. No such withdrawal proposal has been made by the Trump administration, and a withdrawal request would trigger a multi-year process before taking effect. The timing, terms, and consequences of a full or partial withdrawal request remain speculative at this time.

Federal

Federal Action on Greenhouse Gas Emissions

In 2002, President George W. Bush set a national policy goal of reducing the GHG emission intensity (tons of GHG emissions per million dollars of gross domestic product) of the U.S. economy by 18 percent by 2012 (NOAA 2002). The goal did not establish any binding reductions. Rather, the USEPA administers a variety of voluntary programs and partnerships with GHG emitters in which the USEPA partners with industries that produce and utilize synthetic gases to reduce emissions of particularly potent GHGs.

April 2007 Supreme Court Ruling

In *Massachusetts et al. vs. Environmental Protection Agency et al.* (April 2, 2007), the U.S. Supreme Court ruled that the USEPA was authorized by the Clean Air Act to regulate CO_2 emissions from new motor vehicles. The Court did not mandate that the USEPA enact regulations to reduce GHG emissions, but found that the only instances in which the USEPA could avoid taking action were if it found that GHGs do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHGs contribute to climate change. On December 7, 2009, the USEPA issued an "endangerment finding" under the Clean Air Act, concluding that GHGs threaten the public health and welfare of current and future generations and that motor vehicles contribute to GHG pollution (USEPA 2009a). These findings provide the basis for adopting new national regulations to mandate GHG emission reductions under the Federal Clean Air Act.

Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) have been working together on developing a National Program of regulations to reduce GHG emissions and to improve the fuel economy of light-duty vehicles. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking establishing standards for 2012 through 2016 model year vehicles. On October 15, 2012, the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. The rules require these vehicles to meet an estimated combined average emissions level of 295 grams

of CO_2 per mile by 2012, decreasing to 250 grams per mile by 2016, and finally to an average industry fleet-wide level of 163 grams per mile in model year 2025. The 2016 standard is equivalent to 35.5 miles per gallon (mpg) and the 2025 standard is equivalent to 54.5 mpg if the levels were achieved solely through improvements in fuel efficiency. The agencies expect, however, that a portion of these improvements will occur due to air conditioning technology improvements (i.e., they will leak less) and due to the use of alternative refrigerants, which would not contribute to fuel economy. These standards would cut GHG emissions by an estimated 2 billion metric tons and 4 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2017–2025). The combined USEPA GHG standards and NHTSA Corporate Average Fuel Economy (CAFE) standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other States that have adopted the California standards (USEPA 2010b; USEPA and NHTSA 2012).

Heavy-Duty Engines and Vehicles Fuel Efficiency Standards

In addition to the regulations applicable to cars and light-duty trucks, on August 9, 2011, the USEPA and the NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks, which applies to vehicles from model year 2014 to 2018 (USEPA 2011). USEPA and NHTSA have adopted standards for CO_2 emissions and fuel consumption, respectively, tailored to each of three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the USEPA, this program will reduce GHG emissions and fuel consumption for affected vehicles between 9 percent to 23 percent.

Additional Federal GHG Rules and Policies

In addition to the rules and regulations developed with respect to stationary and mobile sources discussed above, various other federal developments have occurred that aim to reduce GHGs from other sources, including land use activities.

Energy Independence and Security Act

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

1. Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022;
2. Prescribe or revise standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances; and
3. Set miles per gallon targets for cars and light trucks and directed the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks. (These were superseded by the NHTSA and USEPA actions discussed above.)

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

American Recovery and Reinvestment Act

On February 17, 2009, President Obama signed the American Recovery and Reinvestment Act of 2009 (ARRA). ARRA was passed in response to the economic crisis of the late 2000s, with the primary purpose to maintain existing jobs and create new jobs. Among the secondary objectives of ARRA was investment in "green" energy programs, including funding the following through grants, loans, or other funding; private companies developing renewable energy technologies; local and State governments implementing energy efficiency and clean energy programs; research in renewable energy, biofuels, and carbon capture; and development of high efficiency or electric vehicles.

Council on Environmental Quality National Environmental Policy Act Guidelines on Greenhouse Gasses

On February 18, 2010, the White House Council on Environmental Quality (CEQ) published draft guidance on the consideration of greenhouse gases and climate change for National Environmental Policy Act (NEPA) analyses (CEQ 2010). On December 18, 2014 CEQ released the *Revised Draft Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews* (CEQ 2014). Both documents recommend that proposed federal actions that are reasonably expected to directly emit 25,000 million metric tons of carbon dioxide equivalent per year ($MMTCO_2e$/year) should prepare a quantitative and qualitative NEPA analysis of direct and indirect greenhouse gas emissions.

The draft guidance provides reporting tools and instructions on how to assess the effects of climate change. The draft guidance does not propose to regulate greenhouse gases. Although CEQ has not yet issued final guidance, various NEPA documents are beginning to incorporate the approach recommended in the draft guidance.

Voluntary Programs

The USEPA administers a variety of voluntary programs and partnerships with GHG emitters in which the USEPA partners with industries that produce and utilize synthetic gases to reduce emissions of particularly potent GHGs. For example, the USEPA's National Clean Diesel Campaign (NCDC) promotes diesel emission reduction strategies. The NCDC works to reduce the pollution emitted from diesel engines across the country through the implementation of varied control strategies by working with manufacturers, fleet operators, air quality professionals, environmental and community organizations, and State and local officials to reduce diesel emissions. NCDC activities include: developing new emissions standards for locomotive and marine diesel engines; and promoting the reduction of emissions for existing diesel engines, including use of cleaner fuels, retrofitting and repairing existing fleets, idling reduction among others. The USEPA also administers the State and Local Climate and Energy Program that provides technical assistance, analytical tools, and outreach support to State, local, and tribal governments (USEPA 2017).

Greenhouse Gas and Climate Policies of the Trump Administration. President Trump and his senior advisors and appointees, including US Environmental Protection Agency Secretary Scott Pruitt, have stated their intent to halt various regulatory activities to reduce greenhouse gas emissions, including for example, the Climate Action Plan, the Clean Power Plan, and a waiver program allowing California to mandate more stringent emission standards for passenger cars and light duty trucks. Representatives from various states, including California's Governor and Legislative leaders, along with national environmental advocacy groups such as the Natural Resources Defense Council, have stated their intent to sue to block federal agency actions that would postpone or eliminate GHG reduction measures approved by former President Obama, and to consider expansions of state-level GHG reduction measures that are not dependent on federal action. The timing, emission consequences, litigation outcome, and implementation consequences of these types of federal GHG decisions, and the potential for and consequences of enhanced GHG reduction regulatory programs by other entities such as the state of California, remain speculative at this time.

Multi-State/Regional Area

Western Regional Climate Action Initiative

The Western Regional Climate Action Initiative (WCI) is a partnership among seven States, including California, and four Canadian provinces to implement a regional, economy-wide cap-and-trade system to reduce global warming pollution. The WCI will cap GHG emissions from the region's electricity, industrial, and transportation sectors with the goal to reduce the heat trapping emissions that cause global warming to 15 percent below 2005 levels by 2020. When the WCI adopted this goal in 2007, it estimated that this would require 2007 levels to be reduced worldwide between 50 and 85 percent by 2050. California is working closely with the other States and provinces to design a regional GHG reduction program that includes a cap-and-trade approach. CARB's planned cap and-trade program, discussed below, is also intended to link California and the other member States and provinces. As of January 1, 2014, California's Cap-and-Trade program is linked to Quebec's pursuant to the Agreement Between the California Air Resources Board and the Gouvernement du Québec Concerning the Harmonization and Integration of Cap-and-Trade Programs Reducing Greenhouse Gas Emissions, in accordance with the direction in CARB Board Resolution 13-7 (CARB 2013).

Pacific Coast Action Plan on Climate and Energy

On October 28, 2013, the Governors of California, Oregon, and Washington and the Premier of British Columbia signed a clean energy pact, known as the Pacific Coast Action Plan on Climate and Energy (Pacific Coast Action Plan). Although the Action Plan does not impose legally enforceable obligations and lacks a specific schedule for implementation, the pact sets out a number of goals and aspirational measures. The Action Plan calls upon each of the parties to undertake a number of measures to address the use of carbon-based fuels in the transportation sector, including the adoption or maintenance of low-carbon fuel standards; the development of targets and action plans in order to encourage public and private investment in low-carbon commercial fleets that use alternative fields; and the expansion of

the sale of zero-emissions vehicles to a goal of ten percent of new vehicle purchases by 2016 (Pacific Coast Collaborative 2013).

State

California has enacted a variety of legislation relating to climate change, much of which sets aggressive goals for GHG emissions reductions within the state. However, none of this legislation provides definitive direction regarding the treatment of climate change in environmental review documents prepared under CEQA. In particular, the amendments to the State CEQA Guidelines do not require or suggest specific methodologies for performing an assessment or thresholds of significance, and do not specify greenhouse gas reduction mitigation measures. Instead, the CEQA amendments continue to rely on lead agencies to choose methodologies and make significance determinations based on substantial evidence, as discussed in further detail below (CNRA 2009b). Consequently, no State agency has promulgated binding regulations for analyzing GHG emissions, determining their significance, or mitigating any significant effects in CEQA documents. The discussion below provides a brief overview of the Governor's, CARB and California Office of Planning and Research (OPR) policies, of court decisions, and of the legislation that relates to climate change that may affect the emissions associated with the proposed Project.

California Supreme Court Ruling in Center for Biological Diversity v. Department of Fish and Wildlife

In its recent decision, *Center for Biological Diversity v. Department of Fish and Wildlife,* S217763 (*Newhall*), the Court evaluated the California Department of Fish and Wildlife's (CDFW) analysis of potential impacts caused by GHG emissions contained in the EIR for the proposed land development called Newhall Ranch (California 2015a). In the EIR, the CDFW analyzed GHG emissions under Assembly Bill (AB) 32, using the business-as-usual (BAU) comparison as its sole criterion of significance.

In *Newhall*, the California Supreme Court concluded that a finding of consistency with meeting statewide emission reduction goals is a legally permissible criterion of significance when analyzing potential impacts of GHG emissions under CEQA. However, the Court found that the EIR's conclusion that the project's emissions would be less than significant under that criterion was not supported by substantial evidence, and remanded back to the appellate court the narrow issue of whether substantial evidence supported the application of AB 32 statewide GHG reduction goal of 29 percent to new land use projects.

The Court then identified "potential options" for lead agencies evaluating cumulative significance of a proposed land use development's GHG emissions in future CEQA documents, but the Court was careful to note that there was no "guarantee" that any of these would be sufficient:

> We do not, of course, guarantee that any of these approaches will be found to satisfy CEQA's demands as to any particular project; what follows is merely a description of potential pathways to compliance, depending on the circumstances of a given project.

The "potential pathways to compliance" suggested by the Court are as follows:

1. **Business As Usual (BAU) Model:** While the Court cautioned that the Scoping Plan may not be appropriate at the project-level, the BAU model might be used to determine what level of reduction from business as usual a new land use development at the proposed location must contribute in order to comply with statewide goals pursuant to AB 32. The Court specifically directed that reliance on this type of quantitative threshold must be supported by substantial evidence in the record that links the statewide GHG reduction standard to the appropriate GHG reduction standard for the specific type of project under consideration.
2. **Compliance With Regulatory Programs Designed To Reduce Greenhouse Gas Emissions:** The Court suggests that a lead agency could rely on a showing of compliance with regulatory programs designed to reduce greenhouse gas emissions in order to demonstrate consistency with AB 32's goals. The Court clarifies that a significance analysis based on compliance with such statewide regulations only goes to impacts within the area governed by the regulations.
3. **Local Climate Action Plan Or Other "Geographically Specific Greenhouse Gas Emission Reduction Plans":** The Court points out that these plans may provide a basis for the tiering or streamlining of project-level CEQA analysis, so long as the plan is "sufficiently detailed and adequately supported."
4. **Regional Sustainable Community Strategy (SCS):** The Court also articulates that a lead agency need not additionally analyze greenhouse gas emissions from cars and light trucks in CEQA documents for certain residential, mixed use and transit priority projects that are consistent with an applicable SCS adopted pursuant to SB [Senate Bill] 375.
5. **Numerical GHG Significance Thresholds:** Although noting that use of such thresholds are not required, the Court favorably cited to the BAAQMD GHG significance thresholds, based on compliance with AB 32, which use a "service population" GHG ratio threshold for land use projects and a 10,000 ton annual GHG emission threshold for industrial projects. The Court remanded for further consideration the application of the 29 percent overall Scoping Plan metric, which is used by several Air Districts and, like the favorably-cited BAAQMD [Bay Area Air Quality Management District] metric, is based on AB 32.
6. **Executive Order Nos. S-3-05 and B-30-15:** Citing to Executive Order Nos. S-3-05 and B-30-15, the Court cautioned that those EIRs taking a goal-consistency approach to CEQA significance may "in the near future" need to consider the project's effects on meeting emissions reduction targets beyond 2020.

Following the Supreme Court's decision in *Newhall*, the EIR at issue in that case was set aside on remand by the lower court. On November 2016, the CDFW released a draft Additional

Environmental Analysis (AEA) intended to address the agency's CEQA compliance obligations (CDFW 2016). The AEA does not respond to the Supreme Court's direction to provide substantial evidence supporting the 29% BAU statutory GHG reduction threshold relied upon by the *Newhall* EIR. The AEA also does not include an assessment of the *Newhall* project's consistency with any of the Court's suggested GHG CEQA compliance pathways, although referenced documentation in the *Newhall* administrative record do include and confirm compliance with each pathway. Instead, as described in the AEA, the *Newhall* project applicant (Five Point LLC) voluntarily modified its project and proposed to achieve "net zero" GHG emissions for the project with the implementation of the project applicant's "zero net emission" proposal, which was made enforceable by the addition of 13 mitigation measures that correspond to the applicant's proposal, as further described in the AEA. The AEA states that the adoption and implementation of the 13 mitigation measures would reduce mobile source, electricity, natural gas, vegetation removal, and construction-related emissions by the amount of emissions estimated for the project and result in no net contributions of GHG emissions from the project, or "zero net emissions." The AEA further concludes that because the project would result in no net increase of GHG emissions after implementation of the mitigation measures, there would be no contribution of GHG emissions to cumulative GHG emissions influencing global climate change and the *Newhall* project would not conflict with any plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs. Consequently, the AEA concludes that project GHG and climate change impacts would be less than significant. (CDFW 2016, pp. 1-18).

Executive Order S-3-05 (Statewide GHG Targets)

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05, which proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce snowpack in the Sierra Nevada Mountains; could further exacerbate California's air quality problems; and could potentially cause a rise in sea levels. In an effort to avoid or reduce the impacts of climate change, Executive Order S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Executive orders do not have the same status as a law because in California's constitutional system, it is the Legislature, not the Governor, who is entrusted with the role of making statewide laws (California 1997 [p. 836], 1990). The Legislature declined to include the Executive Order's 2050 goal in AB 32 (discussed below), and again declined to use the EO's 2050 goal in adopting Senate Bill (SB) 375 (discussed below), nor has it incorporated it in any implementing legislation or applicable plans. Additionally, although CARB has the requisite authority to adopt whatever regulations are necessary beyond the AB 32 horizon year 2020 to meet the target set forth in S-3-05, the agency has not done so. Since the Legislature has never enacted EO S-3-05's 2050 target, and no expert agency has interpreted CEQA to require it, the 2050 target has only the force and effect of an executive order issued by a former Governor. There is no authority that suggests that the constitutional authority to establish CEQA significance thresholds resides in the Governor. CEQA is a statute, and the authority to amend and revise its requirements falls first to the Legislature. The Legislature alone has the authority to enact, amend, or revise legislation, absent some express delegation of authority to the Governor or an executive branch agency through statutory enactments

(California 2010 [p. 1015]). If the Legislature has delegated any of its authority to define CEQA's requirements, it delegated that authority to OPR and not to the Governor's office.

Moreover, CARB's Scoping Plan to implement AB 32 looked beyond 2020 to assess whether implementing the Scoping Plan would achieve the State's long-term climate goals and determined that it would do the following (CARB 2008a [p. 117]):

Climate scientists tell us that the 2050 target represents the level of greenhouse gas emissions that advanced economies must reach if the climate is to be stabilized in the latter half of the 21st century. Full implementation of the Scoping Plan will put California on a path toward these required long-term reductions. Just as importantly, it will put into place many of the measures needed to keep us on that path.

The 2014 Scoping Plan Update confirms that "California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" and it recognizes the potential for California to "reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050" (CARB 2014b, p. 2).

However, the 2014 Scoping Plan Update also concludes that additional actions will be needed to continue reducing emissions and meet the 2050 goals in the face of anticipated population and economic growth (CARB 2014b). In fact, significant technological innovation, well beyond the scope of an individual development project, are absolutely necessary components of any plausible path to achieving the EO S-3-05's 2050 target. For example, CARB has concluded that "California must transition to zero and near-zero emission transportation and freight movement technologies" which require expedited completing of "promising new heavy-duty vehicle technologies," and to "encourage additional needed technology innovation" CARB proposes to amend some of its regulatory requirements. [https://www.arb.ca.gov/msprog/itr/itr.htm] Similarly, in one of several reports CARB's Advanced Technology to Meet California's Climate Goals: Opportunities, Barriers & Policy Solutions (CARB, 2009) concludes that "(m)eeting California's long-term GHG goals will require the development and deployment of low and zero GHG advanced technologies in addition to the accelerated diffusion of currently available technologies."

These new technology innovations to change transportation engine and fuel technology, and energy generation and storage technology are generally outside the jurisdiction and control of the local government agency such as the County. Achieving these goals will require wholesale shifts in fuel and energy technology, neither of which are currently available, rendering any further analysis of a given development project's impacts relative to the 2050 target too speculative for purposes of determining CEQA significance.

The Court in the ***Newhall*** decision noted that an analysis of goals beyond 2020 may be necessary for new development; however, Court noted that the target set by EO S-3-05 and the interim goal set in EO B-30-15 (discussed below) were not required significance criteria in analyzing impacts related to GHG emissions and climate change under CEQA for the abovementioned reasons.

Executive Order B-30-15 (Statewide Interim GHG Targets)

California EO B-30-15 (April 29, 2015) set an "interim" statewide emission target to reduce GHG emissions to 40 percent below 1990 levels by 2030, and directed State agencies with jurisdiction over greenhouse gas emissions to implement measures pursuant to statutory authority to achieve this 2030 target and the 2050 target of 80 percent below 1990 levels. Specifically, the Executive Order directed CARB to update the Scoping Plan to express this 2030 target in metric tons. This new Executive Order is subject to all the same limitations as discussed above for EO S-03-05. However, EO B-30-15 is more specific in its direction to State agencies so it remains to be seen how it will be implemented, and like EO S-3-05, neither CARB nor the legislature have incorporated the target set forth in B-30-15 in any implementing legislation or applicable plans. However, SB 350 was signed into law and (discussed below) it requires the state to double energy efficiency savings in electricity and natural gas by retail customers by 2030 and raises the Renewable Portfolio Standard (RPS) so that half of the state's electricity must be procured from renewable sources by 2030.

Assembly Bill 32 (Statewide GHG Reductions)

The California Global Warming Solutions Act of 2006 (AB 32) was signed into law in September 2006 after considerable study and expert testimony before the Legislature (California 2006a). The law instructs CARB to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. The Act directed CARB to set a GHG emission limit based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020. Based on CARB's calculation of 1990 baseline emissions levels, California must reduce GHG emissions by approximately 28.5 percent below "business-as-usual" predictions of year 2020 GHG emissions to achieve this goal. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. Key AB 32 milestones for CARB's actions include the following:

- **June 30, 2007.** Identification of discrete early action GHG emissions reduction measures. On June 21, 2007, CARB satisfied this requirement by approving three early action measures (CARB 2007a). These were later supplemented by adding six other discrete early action measures (CARB 2007b).
- **January 1, 2008.** Identification of the 1990 baseline GHG emissions level; approval of a statewide limit equivalent to that level; and adoption of reporting and verification requirements concerning GHG emissions. On December 6, 2007, CARB approved a statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline (CARB 2007c).
- **January 1, 2009.** Adoption of the Scoping Plan for achieving GHG emission reductions. On December 11, 2008, CARB adopted *Climate Change Scoping Plan: A Framework for Change* (Scoping Plan), discussed in more detail below (CARB 2008a).

- **January 1, 2010.** Adoption and enforcement of regulations to implement the "discrete" actions. Several early action measures have been adopted and became effective on January 1, 2010 (CARB 2007a, 2007b).
- **January 1, 2011.** Adoption of GHG emissions limits and reduction measures by regulation. On October 28, 2010, CARB released its proposed cap-and-trade regulations, which would cover sources of approximately 85 percent of California's GHG emissions. On October 20, 2011, the Board adopted the final cap-and-trade regulation. The final rulemaking packing was approved by the Office of Administrative Law (OAL) on December, 14 2011, with an effective date of January 1, 2012 (CARB 2011a).
- **January 1, 2015.** Cap-and-trade compliance obligations were phased in for suppliers of natural gas, reformulated gasoline blendstock for oxygenate blending (RBOB), distillate fuel oils, and liquefied petroleum gas, with emissions that meet or exceed specified emissions thresholds. Emission offsets are allowed for up to eight percent of a facility's compliance obligation. According to the 2016 California Climate Investments Annual Report, $2.6 billion from the Greenhouse Gas Reduction Fund has been appropriated to State agencies, and $1.7 billion has been awarded to projects (CARB 2016a). CARB has confirmed that the Cap-and-Trade program will continue to be administered after 2020.

As noted above, on December 11, 2008, CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emission level would require a reduction of GHG emissions of approximately 28.5 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business as usual"). The Scoping Plan evaluates opportunities for sector-specific reductions; integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities; identifies additional measures to be pursued as regulations; and outlines the role of a cap-and-trade program. The key elements of the Scoping Plan (CARB 2008a) include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

In 2009, a coalition of environmental groups brought a challenge to the Scoping Plan alleging that it violated AB 32 and that the environmental review document (called a "Functional Equivalent Document" [FED]) violated CEQA by failing to appropriately analyze alternatives to the proposed cap-and-trade program. On May 20, 2011, the San Francisco Superior Court entered a final judgment in favor of the coalition and ordered that CARB take no further action with respect to cap-and-trade rulemaking until it complies with CEQA by properly analyzing alternatives in its FED to cap and trade (California 2011). CARB appealed the decision on May 23, 2011 (CARB 2011b). The Appellate Court stayed the Superior Court's injunction on June 3, 2011. The portions of the Scoping Plan that do not relate to cap and trade remain valid under the Court's judgment. On June 19, 2012, the California First District Court of Appeal upheld the Scoping Plan and affirmed CARB's approval of the Scoping Plan as in compliance with AB 32.

In connection with preparation of the supplement to the Functional Equivalent Document, CARB released revised estimates of the expected 2020 emission reductions in consideration of the economic recession and the availability of updated information from development of measure-specific regulations. Consideration of the economic recession and the effectiveness of adopted regulation reduced the projected 2020 BAU emissions from 596 $MMTCO_2e$ to 545 $MMTCO_2e$ (CARB 2011c). With the revised 2020 BAU projection, achieving the 1990 emissions level would require a reduction of GHG emissions of 118 $MMTCO_2e$, or 21.7 percent (down from 28.5 percent), to achieve in 2020 emissions levels in the BAU condition. CARB also updated its BAU evaluation to account for new laws and regulations mandating GHG reductions that had been implemented subsequent to the original Scoping Plan, such as the cleaner car mandates required by Pavley (vehicle model-years 2009–2016) and the renewable portfolio standard (12 percent–20 percent). Inclusion of these new GHG mandates further reduced the 2020 projected estimate of GHG emissions to 507 $MMTCO_2e$. As a result, based on both the economic recession and new GHG reduction implementation mandates, CARB determined in 2011 that achieving the 1990 emission level (and 2020 emissions limit of 427 $MMTCO_2e$) would require a reduction of GHG emissions of 80 $MMTCO_2e$, or a reduction by approximately 15.8 percent (down from 28.5 percent, but not directly comparable because of the change in methodology) to achieve in 2020 emissions levels in the "business as usual" or NAT condition (CARB 2011d).

CARB approved the final "First Update to the Climate Change Scoping Plan" on May 22, 2014. The first update describes California's progress towards AB 32 goals, stating that "California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32". Specifically, "if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts [MW] of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050" (CARB 2014b). This first update retains from the October 2013 draft the recalculated 1990 GHG emissions level of 431 $MMTCO_2e$, as well as the 509 $MMTCO_2e$ 2020 "business as usual" or NAT condition (CARB 2014b). Thus, under CARB's most current document, reducing the "business as usual" or NAT condition of 509 $MMTCO_2e$ to the 1990 emissions level of 431 $MMTCO_2e$ will require a reduction of 78 $MMTCO_2e$, or approximately a 15.3 percent reduction (compared to a

28.5 percent reduction as set forth in the original Scoping Plan but not directly comparable because of the change in methodology).

CARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target established in Executive Order B-30-15 (CARB 2015a) and in Senate Bill 32 (discussed below).

On January 20, 2017, CARB completed a draft 2030 Target Scoping Plan Update for which an extended public comment process is scheduled for completion in April 2016 (CARB 2016b). CARB estimates that adoption of the final 2030 Target Scoping Plan Update will be considered for approval by the CARB board at a public hearing conducted in Summer 2017. The 2030 Target Scoping Plan Update includes the new statutory GHG reduction requirements that were not included in the current Scoping Plan, including for example Senate Bill 32 (discussed below) which sets a 40% GHG reduction target below 1990 GHG levels to be achieved by 2030, SB 350 (which sets a 50% reduction in GHG emissions from electricity generation and other energy uses in existing structures, and a 50% renewable energy portfolio requirement), and SB 650 (which establishes priority GHG reduction targets for designated types of greenhouse gases such as methane). The key elements of the draft Scoping Plan proposal call for further GHG reductions from the refinery sector specifically, further reductions from other stationary sources through either a renewed and expanded cap and trade or carbon tax program, further reductions from other sectors such as transportation technologies and services, water and solid waste conservation and management, and land uses in both open space and urban areas. The additional state statutory requirements addressed by the draft 2030 Target Scoping Plan Update are described below. Ongoing statutory proposals (e.g., to increase the renewable portfolio standard to 100% instead of 50%, and to adopt and expand cap and trade as a tax rather than fee program), and uncertainties regarding the greenhouse gas reductions requiring federal concurrence or support, may result in modifications to the 2030 Target Scoping Plan Update which are unknown at this time.

Senate Bill 32

SB 32, signed into law on September 8, 2016, requires CARB to ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the 1990 statewide greenhouse gas level no later than December 31, 2030. Per SB 32, CARB is to achieve this 2030 GHG reduction target by "adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions[.]" See Health & Safety Code Section 38566. The new SB 32 GHG reduction mandate is the same as the GHG reduction included in Executive Order B-30-15 of 40 percent below 1990 levels by 2030. As discussed above, CARB is the process of preparing the 2030 Target Scoping Plan Update, which is intended to build upon and leverage the framework for achieving California's GHG reduction mandate established in the initial Scoping Plan and its first update, and to define the state's climate change priorities for the next 14 years and beyond.

Assembly Bill 197

AB 197 is a companion to, and was enacted on the same day as, SB 32 (i.e., September 8, 2016). AB 197 adds two non-voting members to the CARB board, establishes certain

qualifications for CARB board membership, and creates a six member Joint Legislative Committee on Climate Change Policies to determine facts and make recommendations to the Legislature regarding California climate change policy. Under AB 197, the CARB Chair is required to appear before this committee on an annual basis and present annual information regarding GHG emissions, toxic air contaminants, and criteria pollutants generated by all economic sectors covered by the Scoping Plan. AB 197 further authorizes the committee to establish an expert panel to independently analyze the State's climate change policies. In addition, AB 197 requires CARB to make available on its website, and updated annually, all GHG emissions, criteria pollutants, and toxic air contaminant information broken down to a local level for stationary sources and sub-county level for mobile sources. AB 197 also obligates CARB, when adopting rules and regulations that achieve emission reductions beyond statewide GHG emission limits to consider "social costs" and to prioritize (a) emissions reductions from large stationary sources of GHG emissions, and (b) direct emission reductions from mobile sources. For purposes of AB 197, "social costs" is defined to mean "an estimate of the economic damages, including, but not limited to, changes in net agricultural productivity; impacts to public health; climate adaptation impacts, such a property damages from increased flood risk; and changes in energy system costs, per metric ton of greenhouse gas emissions per year." Finally, AB 197 requires each Scoping Plan update to identify for each of its emission reduction measures (i) the range of air pollution reductions and GHG emissions reductions projected to result from each measure, and (ii) the cost-effectiveness, including avoided social costs, of each measure.

Senate Bill 375 (Land Use Planning)

SB 375 became law on (date) and it provides for a new planning process to coordinate land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32 (California 2008b). SB 375 requires Metropolitan Planning Organizations (MPOs) relevant to the project area (including SCAG) to incorporate a "sustainable communities strategy" (SCS) in their regional transportation plans (RTPs) that will achieve GHG emission reduction targets set by CARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. SB 375 will be implemented over the next several years.

SB 375 is similar to the Regional Blueprint Planning Program, established by the California Department of Transportation, which provides discretionary grants to fund regional transportation and land use plans voluntarily developed by MPOs working in cooperation with Councils of Governments. On April 22, 2009, the Metropolitan Transportation Commission (MTC) adopted the 2009 Regional Transit Plan (RTP) with AB 32 goals in mind. The 2012 RTP was SCAG's first plan subject to SB 375. The Scoping Plan, adopted by CARB in December of 2008, relies on the requirements of SB 375 to implement the carbon emissions reductions anticipated from land use decisions.

SB 375 also required CARB to appoint a Regional Targets Advisory Committee (RTAC) to recommend factors for CARB to consider and methodologies for it to use in setting GHG emission reduction targets for each region. The RTAC must include representation from the League of California Cities, the California State Association of Counties, MPOs, developers, planning organizations, and other stakeholders. In January 2009, CARB appointed 21

members to the RTAC. On September 29, 2009, the RTAC released its recommendations to CARB, representing a key step in the establishment of regional targets for inclusion in sustainable community strategies (RTAC 2009). The RTAC recommendations focus largely on the manner in which CARB staff should interact with various stakeholders during the target-setting process, and how staff should use empirical studies and modeling in establishing regional GHG targets.

Following the release of RTAC's recommendations, CARB began the process of developing regional GHG reduction targets (Regional Targets) for the State's MPOs. On September 23, 2010, CARB adopted Regional Targets applying to the years 2020 and 2035 (CARB 2011e). For the area under SCAG's jurisdiction—including the Project area—CARB adopted Regional Targets of 8 percent for 2020 and 13 percent for 2035. On February 15, 2011, the CARB's Executive Officer approved the final targets (CARB 2011f). CARB filed a Notice of Decision two days later on February 17, 2011 (CARB 2011e). CARB is considering further changes to the SB 375 MPO GHG reduction targets, with workshops scheduled in March of 2017 and new targets to be set following CARB approval of the 2030 Scoping Plan Target Update. The new targets will take effect as of the next MPO approval cycle for the Regional Transportation Plan/Sustainable Communities Strategy, which for SCAG will occur in 2020.

Senate Bill 605 and the Short-Lived Climate Pollutant Reduction Strategy

On September 21, 2014, Governor Jerry Brown signed Senate Bill 605 (SB 605), which requires CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants in the state no later than January 1, 2016. As defined in the statute, short-lived climate pollutant means "an agent that has a relatively short lifetime in the atmosphere, from a few days to a few decades, and a warming influence on the climate that is more potent than that of carbon dioxide." SB 605, however, does not prescribe specific compounds as short-lived climate pollutants or add to the list of GHGs regulated under AB 32. In developing the strategy, CARB must complete an inventory of sources and emissions of short-lived climate pollutants in the state based on available data, identify research needs to address any data gaps, identify existing and potential new control measures to reduce emissions, and prioritize the development of new measures for short-lived climate pollutants that offer co-benefits by improving water quality or reducing other air pollutants that impact community health and benefit disadvantaged communities. The draft strategy released by CARB in September 2015 focuses on methane, black carbon, and fluorinated gases, particularly hydrofluorocarbons, as important short-lived climate pollutants. The draft strategy recognizes emission reduction efforts implemented under AB 32 (e.g., refrigerant management programs) and other regulatory programs (e.g., in-use diesel engines, solid waste diversion) along with additional measures to be developed. On November 28, 2016, CARB released for 45-day public review and comment its Revised Proposed Short-Lived Climate Pollutant Reduction Strategy and the CARB board will consider its adoption at a public hearing scheduled for March 23 and 24, 2017 (CARB 2016d).

Senate Bills 1078, 107, and SBX1-2 (Renewable Portfolio Standards)

Established in 2002 under SB 1078 (California 2002b), and accelerated in 2006 under SB 107 (California 2006c) and again in 2011 under SBX1-2 (California 2011b), California's Renewable Portfolio Standard (RPS) requires retail sellers of electric services to increase

procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020. The 33 percent standard is consistent with the RPS goal established in the Scoping Plan (CARB 2008a). As interim measures, the Renewable Portfolio Standards require 20 percent of retail sales to be sourced from renewable energy by 2013 and 25 percent by 2016. Initially, the Renewable Portfolio Standard provisions applied to investor-owned utilities, community choice aggregators, and electric service providers. SBX1-2 added, for the first time, publicly owned utilities to the entities subject to RPS (California 2011b).

Senate Bill 1

Senate Bill 1 of 2006 (SB 1) established the statewide California Solar Initiative, also required the California Energy Commission (CEC) to implement regulations that require sellers of production homes to offer a solar energy system option to all prospective homebuyers. Besides offering solar as an option to prospective homebuyers, sellers of homes constructed on land for which an application for a tentative subdivision map has been deemed complete on or after January 1, 2011, must disclose to the prospective homebuyer the total installed cost of the solar option, the estimated cost savings associated with the solar energy system option, information about California solar energy system incentives, and information about the Go Solar California website. Sellers of production homes affected by this law may opt for the solar offset program rather than offer solar as an option to prospective homebuyers. The solar offset program requires sellers to install a solar system elsewhere which is equivalent to the aggregate capacity of solar that would have been installed in an affected subdivision if 20 percent of the buyers had opted for the solar option (California 2006d).

Assembly Bill 1109

Assembly Bill 1109 (AB 1109), the Lighting Efficiency and Toxic Reduction Act, requires the establishment of minimum energy efficiency standards for all general purpose lights. The standards are structured to reduce average statewide electrical energy consumption by not less than 50 percent from the 2007 levels for indoor residential lighting and not less than 25 percent from the 2007 levels for indoor commercial and outdoor lighting by 2018 (California 2007b).

Senate Bill 350

Senate Bill (SB) 350. Signed October 7, 2015, is the *Clean Energy and Pollution Reduction Act of 2015*. SB 350 is the implementation of some of the goals of EO B-30-15. The objectives of SB 350 are

(1) To increase from 33 percent to 50 percent, the procurement of our electricity from renewable sources.

(2) To double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation (California 2015b).

Title 24 Energy Efficiency Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6 of the *California Code of Regulations* [CCR]) were established in 1978 in response to a

legislative mandate to reduce California's energy consumption. The CEC adopted the 2008 changes to the Building Energy Efficiency Standards in order to (1) "Provide California with an adequate, reasonably-priced, and environmentally-sound supply of energy" and (2) "Respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its greenhouse gas emissions to 1990 levels by 2020". The current applicable standards are the 2013 Standards, effective July 1, 2014. The 2016 Code went into effect on January 1, 2017 (CBSC 2015). The 2016 code is at least 28 percent more efficient for than the 2013 Code (CEC 2015a). The requirements of the energy efficiency standards result in the reduction of natural gas and electricity consumption. Both natural gas use and electricity generation result in GHG emissions.

Title 24 Green Building Standards

The 2013 California Green Building Standards Code (24 CCR, Part 11), also known as the CALGreen code, contains mandatory requirements and voluntary measures for new residential and nonresidential buildings (including buildings for retail, office, public schools and hospitals) throughout California (CBSC 2014). The development of the CALGreen Code is intended to (1) cause a reduction in greenhouse gas (GHG) emissions from buildings; (2) promote environmentally responsible, cost effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

The CALGreen Code contains requirements for construction site selection, storm water control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, such as heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

The CALGreen Code provides standards for bicycle parking, carpool/vanpool/electric vehicle spaces, light and glare reduction, grading and paving, energy efficient appliances, renewable energy, graywater systems, water efficient plumbing fixtures, recycling and recycled materials, pollutant controls (including moisture control and indoor air quality), acoustical controls, storm water management, building design, insulation, flooring, and framing, among others.

Beyond the mandatory standards, optional Tier 1 status can be achieved by complying with voluntary measures for energy and water efficiency, material conservation, and other design features. An example of a Tier 1 requirement is 12 percent less indoor water use in nonresidential construction. Tier 2 status can be achieved by complying with additional voluntary measures; an example requirement is 20 percent less indoor water use in nonresidential construction.

Executive Order S-01-07 and the Low Carbon Fuel Standard

Executive Order S-01-07 (January 18, 2007) requires a ten percent or greater reduction (from current transportation fuels) in the average fuel carbon intensity for CARB-regulated transportation fuels in California (California 2007a). CARB identifies the Low Carbon Fuel Standard (LCFS) as a Discrete Early Action item under AB 32.

In 2009, CARB approved for adoption the LCFS regulation, which became fully effective in April 2010 and is codified in the *California Code of Regulations* (CCR, specifically Title 17, Sections 95480–95490). The LCFS will reduce greenhouse gas emissions by reducing the carbon intensity of transportation fuels used in California by at least 10 percent by 2020. Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the "lifecycle" of a transportation fuel. Following a federal lawsuit challenging the LCFS, on September 25, 2015, CARB re-adopted the LCFS regulation (CARB 2015b).

Assembly Bill 1493 (Mobile Source Reductions)

Assembly Bill (AB) 1493 required CARB to adopt regulations by January 1, 2005, to reduce GHG emissions from noncommercial passenger vehicles and light-duty trucks of model year 2009 and after (California 2002a). The bill required the California Climate Action Registry (CCAR) to develop and adopt protocols for the reporting and certification of GHG emissions reductions from mobile sources for use by CARB in granting emission reduction credits. The bill authorized CARB to grant emission reduction credits for reductions of GHG emissions prior to the date of the enforcement of regulations, using model year 2000 as the baseline for reduction.

In 2004, CARB applied to the USEPA for a waiver under the Federal Clean Air Act to authorize implementation of these regulations. The waiver request was formally denied by the USEPA in December 2007. In January 2008, the State Attorney General filed a lawsuit against the USEPA challenging the denial of California's request for a waiver to regulate and limit GHG emissions from these vehicles. In January 2009, President Barack Obama issued a directive to the USEPA to reconsider California's request for a waiver, which the USEPA granted on June 30, 2009, as discussed further below (USEPA 2009b). As part of this waiver, the USEPA specified that CARB may not hold a manufacturer liable or responsible for any noncompliance caused by emission debits generated by the manufacturer for the 2009 model year. The emission standards become increasingly more stringent through the 2016 model year. Regulations to make California emissions standards for model year 2017 and beyond consistent with federal standards were adopted in 2012 and are discussed further below.

CARB's Advanced Clean Cars Program

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

requires car manufacturers to offer for sale an increasing number of zero-emission vehicles (ZEVs) each year, including battery electric, fuel cell, and plug-in hybrid electric vehicles.

In December 2012, CARB adopted regulations allowing car manufacturers to comply with California's GHG emissions requirements for model years 2017–2025 through compliance with the EPA GHG requirements for those same model years (CARB 2012).

Cap and Trade

Pursuant to AB 32, CARB was allowed, but not required, to include among mechanisms intended to reduce GHG emissions a "system of market-based declining annual aggregate emission limits". As noted above, CARB developed a Scoping Plan that directed CARB staff to develop, among other programs, a cap-and-trade mechanism that would apply a declining aggregate cap on GHG emissions and provide a flexible compliance system using tradable instruments. On October 20, 2011, CARB adopted the final cap-and-trade regulation (17 CCR Subchapter 10, Article 5). The program imposes a "cap" on the total GHG emissions from covered entities in the state, and the quantity of emissions allowed under the cap will decrease each year, ultimately reaching the goal of returning statewide GHG emissions to 1990 levels by 2020. The quantity of allowed emissions actually increased between 2014 and 2015, but that is to account for the addition of the fuel importers and distributors and additional electricity importers to the program as discussed below. The net effect is to reduce overall GHG emissions.

The cap-and-trade program started on January 1, 2012, and will proceed in "compliance phases", the first of which began on January 1, 2013. In the first phase, the program applies to electric utilities, importers of electricity, and specified industries, including refineries. Approximately 350 electric utilities and approximately 600 industrial facilities were included in the initial phase of the program. On January 1, 2015, cap-and-trade compliance obligations were phased in for suppliers of natural gas, reformulated gasoline blendstock for oxygenate blending (RBOB), distillate fuel oils, and liquefied petroleum gas that meet or exceed specified emissions thresholds. The threshold that triggers a cap-and-trade compliance obligation for a fuel supplier is 25,000 metric tons or more of CO_2e annually from the GHG emissions that would result from full combustion or oxidation of quantities of fuels (including natural gas, RBOB, distillate fuel oil, liquefied petroleum gas, and blended fuels that contain these fuels) imported and/or delivered to California. Phasing in of cap-and-trade compliance obligations for transportation fuel providers further reduces GHG emissions attributable to mobile sources, beyond the GHG emissions reductions achieved by the Pavley Standard, LCFS, and Advanced Clean Cars Program discussed above. This analysis does not incorporate GHG emissions reductions based on cap-and-trade compliance obligations applicable to transportation fuel suppliers.

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (*California Public Resources Code,* Sections 40000 et seq.) requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows (1) diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities and (2) diversion of 50 percent of all solid waste on and after January 1, 2000, through source

reduction, recycling, and composting facilities. Additionally, jurisdictions are not prohibited from implementing source reduction, recycling, and composting activities designed to exceed these requirements.

Assembly Bill 341

Assembly Bill 341 amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is a policy goal of the State that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the State's policy goal. CalRecycle conducted several stakeholder workshops and published a discussion document in May 2012 titled California's New Goal: 75 Percent Recycling, which identifies concepts that CalRecycle believes would assist the State in reaching the 75 percent goal by 2020 (CalRecycle 2016a).

Assembly Bill 1826

In October 2014 Governor Brown signed AB 1826 Chesbro (Chapter 727, Statutes of 2014), 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 requires 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 (however, multifamily dwellings are not required to have a food waste diversion program). Organic waste (also referred to as organics) means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. This law phases in the mandatory recycling of commercial organics over time. In particular, the minimum threshold of organic waste generation by businesses decreases over time, which means an increasingly greater proportion of the commercial sector will be required to comply (CalRecycle 2016b).

California Water Code

Sections 10910 through 10915 of the *California Water Code* require preparation of a project-specific Water Supply Assessment for developments consisting of 500 or more dwelling units. Sections 10610.4, 10617, and 10620 of the *California Water Code* require urban water suppliers to develop water management plans to actively pursue the efficient use of available supplies.

State Model Water Efficient Landscape Ordinance (MWELO) and Executive Order B-29-15

The MWELO (23 CCR Division 2, Chapter 2.7) establishes an outdoor water budget for new landscaped areas that are 500 square feet or larger, and rehabilitated landscaped areas that are 2,500 square feet or larger (DWR 2015). Executive Order (EO) B-29-15 called for revisions to the MWELO in order to increase water efficiency standards for new and rehabilitated landscapes through more efficient irrigation systems, greywater usage, on-site storm water capture, and by limiting the portion of landscapes that can be covered in turf. It also established a goal of achieving a statewide reduction in potable urban water usage of

25 percent relative to water use in 2013 (California 2015b). The California Department of Water Resources (DWR) updated the MWELO in December 2015 to incorporate these elements and the emergency drought regulations set forth by EO B-29-15, which establish improved efficiency standards for water appliances.

Senate Bill X7-7 (Water Conservation Act of 2009)

The Water Conservation Act of 2009 sets an overall goal of reducing per-capita urban water use by 20 percent by December 31, 2020. The State is required to make incremental progress toward this goal by reducing per-capita water use by at least 10 percent by December 31, 2015. This in an implementation measure of the Water Sector of the AB 32 Scoping Plan. Reduction in water consumption directly reduces the energy necessary and the associated emissions to convey, treat, and distribute the water; it also reduces emissions from wastewater treatment.

The DWR adopted a regulation on February 16, 2011, that sets forth criteria and methods for exclusion of industrial process water from the calculation of gross water use for purposes of urban water management planning. The regulation would apply to all urban retail water suppliers required to submit an Urban Water Management Plan, as set forth in the *California Water Code* (specifically, Division 6, Part 2.6, Sections 10617 and 10620).

CARB Airborne Toxic Control Measures and Emission Standards

CARB adopted an airborne toxic control measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter (PM) and other toxic air contaminants, and promulgated emission standards for off-road diesel construction equipment such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles.

Senate Bill 97 (State CEQA Guidelines)

SB 97 required OPR to prepare amended the State CEQA Guidelines for submission to the California Natural Resources Agency (CNRA) regarding GHG analysis and feasible mitigation of the effects of GHG emissions as required by CEQA. These amendments became effective as of March 18, 2010. The adoption of SB 97 and subsequent CEQA amendments are widely recognized as confirmation that lead agencies are required to include an analysis of climate change impacts in CEQA documents.

CEQA Amendments

Pursuant to SB 97, OPR developed proposed amendments to the State CEQA Guidelines (CEQA Amendments) for the feasible mitigation of GHG emissions and their effects, which it first submitted to the Secretary of the CNRA on April 13, 2009. After a public review and comment period, on December 30, 2009, the CNRA adopted the CEQA Amendments, which became effective on March 18, 2010.

The CEQA Amendments for Greenhouse Gas Emissions state in Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Amendments note that an

agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance based standards" (CNRA 2009b). Section 15064.4(b) provides that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment (CNRA 2009b):

- The extent a project may increase or reduce GHG emissions as compared to the environmental setting.

- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

In addition, Section 15064.7(c) of the CEQA Amendments specifies that "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (CNRA 2009b). Similarly, the revisions to Appendix G, Environmental Checklist Form, which is often used as a basis for lead agencies' selection of significance thresholds, does not prescribe specific thresholds. Rather, Appendix G asks whether the project would conflict with a plan, policy or regulation adopted to reduce GHG emissions or would generate GHG emissions that would significantly affect the environment, indicating that the determination of what is a significant effect on the environment should be left to the lead agency.

Accordingly, the CEQA Amendments do not prescribe specific methodologies for performing an assessment; they do not establish specific thresholds of significance; and they do not mandate specific mitigation measures. Rather, the CEQA Amendments emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009b).

The CEQA Amendments indicate that lead agencies should consider all feasible means, supported by substantial evidence and subject to monitoring and reporting, of mitigating the significant effects of GHG emissions. As pertinent to the Project, these potential mitigation measures, set forth in Section 15126.4(c), may include (1) measures in an existing plan or mitigation program for the reduction of GHG emissions that are required as part of the lead agency's decision; (2) reductions in GHG emissions resulting from a project through implementation of project design features; (3) off-site measures, including offsets, to mitigate a project's emissions; and (4) carbon sequestration measures (CNRA 2009b).

Among other things, the CNRA noted in its Public Notice for these changes that impacts of GHG emissions should focus on the cumulative impact on climate change. The Public Notice states (CNRA 2009c):

> While the Proposed Amendments do not foreclose the possibility that a single project may result in greenhouse gas emissions with a direct impact on the environment, the evidence before [CNRA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of greenhouse gas emissions should center on whether a project's incremental contribution of greenhouse gas emissions is cumulatively considerable.

Thus the CEQA Amendments continue to make clear that the significance of greenhouse gas emissions is most appropriately considered on a cumulative level.

Other Potentially Applicable State Regulations or Policies

Executive Order S-13-08

On November 14, 2008, Governor Schwarzenegger issued Executive Order S-13-08 instructing California agencies to assess and prepare for the impacts of rising sea level associated with climate change (California 2008c).

The resulting 2009 California Climate Adaptation Strategy (CAS) report was developed by the CNRA in coordination with the Climate Action Team (CAT). The report presents the best available science relevant to climate impacts in California and proposes a set of recommendations for California decision-makers to assess vulnerability and promote resiliency in order to reduce California's vulnerability to climate change. Guidance regarding adaptation strategies is general in nature and emphasizes incorporation of strategies into existing planning policies and processes.

In addition to requiring the CAT to create a Climate Adaptation Strategy, Executive Order S-13-08 ordered the creation of a comprehensive Sea Level Rise Assessment Report. The report, published in June 2012, indicates that the sea level along most of California's coast is expected to rise about one meter over the next century and is likely to increase the risk of damage in the form of flooding, coastal erosion, and wetland loss due to storm surges and high waves. The sea level increase is slightly higher than projected for global sea levels (National Research Council 2012).

Executive Order S-13-08 also called for the California Ocean Protection Council (OPC) to work with the other CAT State agencies to develop interim guidance for assessing the potential impacts of sea level rise due to climate change in California. In coordination with National Academy of Sciences (NAS) efforts, the OPC drafted interim guidance recommending that State agencies consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability, reduce expected risks, and increase resiliency to sea level rise. The draft resolution and interim guidance document is consistent with the Ocean Protection Act (*California Public Resource Code,* Division 26.5, Section 35615[a][1]), which specifically directs the OPC to coordinate activities of State agencies to improve the effectiveness of State efforts to protect ocean resources (CNRA 2014; Sea Level Rise Task Force 2010). An update to the 2009 CAS report, the final "Safeguarding California Plan", was published in July 2014.

Assembly Bill 1613 (Waste Heat and Carbon Emissions Reduction Act)

AB 1613 directed the CEC, the California Public Utilities Commission (CPUC), and CARB to implement the Waste Heat and Carbon Emissions Reduction Act, which is designed to encourage development of new combined heat and power (CHP) systems in California with a generating capacity of not more than 20 megawatts. In June 2010 and updated in 2015, the CEC published modified final guidelines establishing technical criteria for eligibility of CHP systems for programs to be developed by the CPUC and publicly owned utilities (CEC 2015b). Section 2840 of the Act provides that the CEC's guidelines require that CHP systems:

- Be designed to reduce waste energy;
- Have a minimum efficiency of 60 percent;
- Have nitrogen oxides (NOx) emissions of no more than 0.07 pound per megawatt-hour;
- Be sized to meet the eligible customer generation thermal load;
- Operate continuously in a manner that meets the expected thermal load and optimizes the efficient use of waste heat; and
- Be cost-effective, technologically feasible, and environmentally beneficial.

As directed by AB 1613, the CPUC also established (1) a standard tariff for the sale of electricity to electricity corporations for delivery to the electrical grid and (2) a "pay as you save" pilot program requiring electricity corporations to finance the installation of qualifying CHP systems by non-profit and government entities. A January 2011 decision by an administrative law judge determined that the pilot program will not be established due to lack of customer interest and difficulties in instituting a program that meets California Department of Corporations requirements (Decision 11-01-010 Before the Public Utilities Commission of the State of California 2011).

Executive Order B-16-12

On March 23, 2012, Governor Brown issued EO-B-16-12, which orders CARB, the CEC, the CPUC, and other relevant agencies to facilitate the rapid commercialization of zero-emission vehicles (ZEVs), and sets a target for the number of ZEVs in California at 1.5 million by 2025. The Executive Order also directs that the California's state vehicle fleet increase the number of its ZEVs through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles be zero-emission by 2015 and at least 25 percent by 2020. Further, the Executive Order also sets a target for a reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050.

Senate Bill 391 and California Transportation Plan 2040

On October 11, 2009, Governor Brown signed into law SB 391, which directs the California Department of Transportation (Caltrans) to update the California Transportation Plan to address how the state will achieve maximum feasible emissions reductions in order to attain

a statewide reduction of GHG emissions to 1990 levels by 2020 and 80 percent below 1990 levels by 2050. Per SB 391, the California Transportation Plan update must be adopted by December 31, 2015 and updated every five years thereafter. Pursuant to SB 391, in June 2016, Caltrans adopted California Transportation Plan 2040 (CTP 2040), which provides a long-range policy framework to meet future statewide mobility needs and reduce greenhouse gas emissions for the transportation sector. (Caltrans 2016a) The CTP 2040 outlines goals and recommendations to achieve a safe, sustainable, accessible, and competitive transportation system that provides reliable mobility while meeting the state's GHG reduction goals over a 20 year planning horizon. Per SB 391, the CTP 2040 is scheduled to be updated every five years, starting in 2021.

Executive Order B-32-15 and the California Sustainable Freight Action Plan

Executive Order B-32-15 (July 17, 2015) requires the California State Transportation Agency, the California Environmental Protection Agency, the California Natural Resources Agency, CARB, Caltrans, the California Energy Commission, and the Governor's Office of Business and Economic Development to develop an integrated action plan by July 2016 to establish clear targets to improve freight efficiency and transition to zero-emission technologies, and to identify state policies, programs, and investments to meet these targets. Pursuant to Executive Order B-32-15, in July 2016, the participating agencies published the California Sustainable Freight Action Plan (Freight Action Plan) (CARB 2016b). The Freight Action Plan recommends a high-level vision for a sustainable freight transportation system and 11 guiding principles for state agencies to utilize when developing specific policies, investments, and programs related to the California freight transportation system. The Freight Action Plan also establishes targets to (i) improve freight system efficiency 25 percent by increasing the value of goods and services produced from the freight sector relative to amount of carbon that it produces by 2030, and (ii) deploy over 100,000 freight vehicles and equipment capable of zero emission operation and to maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030. Per the Freight Action Plan, its targets are not mandates, but rather aspirational measures of progress toward sustainability for the State to meet and try to exceed; under the plan, state agencies will measure and report progress on the statewide Freight Action Plan targets, and evaluate the targets to determine necessary adjustments.

California 2016 Mobile Source Strategy

On May 16, 2016, CARB published the updated Mobile Source Strategy 2016, which establishes a comprehensive statewide strategy to reduce emissions from mobile sources to meet climate change and air quality goals over a fifteen year planning horizon. (CARB 2016c) The Mobile Source Strategy sets forth several measures CARB is proposing to achieve its mobile source emission reduction goals, including a heavy-duty low NOx engine standards and a "last-mile" delivery regulation that would require the use of low-NOx engines as a stepping stone to zero-emission trucks. The Mobile Source Strategy also provides a framework to inform updates to the State Implementation Plan strategy, the California Sustainable Freight Action Plan, and the Short-Lived Climate Pollution Reduction Strategy, and revises the Advance Clean Transit strategy to include low-NOx engines to transit busses. Additional mobile source emission reduction measures described in the Mobile Source

Strategy include: expanding the requirements for cleaner low carbon fuels; incentives for the turnover of equipment and fleets to the cleanest technologies; pilot studies to demonstrate new clean technologies; programs to ensure that emission control systems remain durable over vehicle lifetimes.

California New Residential Zero Net Energy Action Plan

In June 2015, the California Energy Commission and the California Public Utilities Commission jointly published the *California New Residential Zero Net Energy Action Plan 2015-2020* (ZNE Plan) (CEC 2015c). The ZNE Plan is designed to operationalize the State's goal to have 100% of new homes achieve zero net energy (ZNE) by establishing guiding principles for establishing a regulatory framework achieving that goal by 2020 (CEC 2015c). Starting in 2008, the Title 24 energy efficiency requirements for residential homes have been periodically ratcheted up with the objective of eventually achieving the ZNE goal, with updates adopted in 2013 (effective 2014) and 2016 (effective 2017). With each update, the Title 24 standards efficiency requirements have increased at a rate of 12-15% in each cycle. The 2016 standards that went into effect on January 1, 2017 get still closer to ZNE by requiring, for example, high efficiency lighting, high efficiency walls and attics with increased continuous insulation, and high efficiency water heating systems. According to the ZNE Plan, the 2019 update to Title 24 (effective 2020) will require full ZNE for all new residential construction.

Regional

Antelope Valley Air Quality Management District

The AVAQMD has adopted GHG emissions requirements into the appropriate Rules and Regulations. The AVAQMD's *CEQA and Federal Conformity Guidelines* (2011) establishes a CEQA significance threshold of 100,000 tons (90,718 metric tons) of CO_2e per year for GHG emissions, as discussed in Section 5.21.6, Environmental Impacts.

South Coast Air Quality Management District

On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold for projects where the SCAQMD is the lead agency (SCAQMD 2008). Currently, the SCAQMD Governing Board has only adopted thresholds relevant to industrial (stationary source) projects. To achieve a policy objective of capturing 90 percent of GHG emissions from new residential/commercial development projects and implement a "fair share" approach to reducing emission increases from each sector, SCAQMD staff have proposed as a draft approach combining performance standards and screening thresholds. At this time, the SCAQMD has not adopted any significance thresholds for new residential, commercial, or mixed use development projects, but has proposed several draft thresholds over the last few years. The SCAQMD's latest iteration of proposed thresholds, as introduced in September 2010 (SCAQMD 2010), are discussed in Section 5.21.6, Environmental Impacts.

Since sharing the proposed approach to CEQA significance at its GHG CEQA Significance Threshold Stakeholder Working Group meeting in September 2010, the SCAQMD has

cancelled all subsequent meetings and no schedule has been issued for how or when thresholds will be established. The Working Group has not convened since the fall of 2010. As of the preparation of this Draft EIR, the proposal has not been considered or approved for use by the SCAQMD Board.

Southern California Association of Governments

As described above, SB 375 requires the MPOs to prepare a Sustainable Communities Strategy (SCS) in their regional transportation plan. SCAG's SCS is included in the SCAG 2012–2035 Regional Transportation Plan Sustainable Communities Strategy (RTP/SCS) (SCAG 2012a). The document was adopted by SCAG in April 2012. The goals and policies of the RTP/SCS that reduce vehicle miles traveled (VMT) focus on transportation and land use planning that include building infill projects, locating residents closer to where they work and play and designing communities so there is access to high quality transit service. The 2012–2035 RTP/SCS is expected to reduce per capita transportation emissions of 9 percent by 2020 and 16 percent by 2035. In June of 2012, CARB accepted SCAG's determination that the Final RTP/SCS would meet the region's GHG reduction target.

SCAG's SCS is now included in its 2016–2040 RTP/SCS. The document was adopted by SCAG on April 7, 2016. The 2016–2040 RTP/SCS is expected to reduce per capita transportation emissions by 8 percent by 2020 and by 18 percent by 2035 (SCAG 2016a).

Metro Countywide Sustainability Planning Policy and Implementation Plan

The *Metro Countywide Sustainability Planning Policy and Implementation Plan*, approved in December 2012, builds upon existing federal, State, regional, and local sustainability policies and plans. This policy serves as a guidance and implementation tool to increase coordination and collaboration across transportation modes, planning disciplines, and government agencies. The main goals of this policy are to improve air quality and increase transportation choices in Los Angeles County (Metro 2012).

Metro Complete Streets Policy

The *Metro Complete Streets Policy* was developed by the Los Angeles County Metropolitan Transportation Authority (Metro) in October 2014, and serves as a standard for comprehensive, multimodal transportation system design in Los Angeles County. This policy uses the existing policies established by the *Metro Countywide Sustainability Planning Policy and Implementation Plan* and builds upon them by clarifying and adding goals. These goals further encourage a multimodal transportation system by promoting active transportation, and add goals similar to those of the CTP 2040 by encouraging safety and healthy, equitable communities (Metro 2014).

Local – Los Angeles County

Countywide Energy and Environmental Policy

The Countywide Energy and Environmental Policy (Policy) was adopted by the Los Angeles County Board of Supervisors on January 16, 2007, to provide guidelines for the development and enhancement of energy conservation and environmental programs within County

departments. The Policy was also the County's response for the need for energy conservation and reduction in GHG emissions. It directs the County to track its GHG emissions with the California Climate Action Registry, and to reduce its facilities' energy consumption by 20 percent by the year 2015. Under this policy, the Los Angeles County Energy Program (LACEP) provides financing for energy efficiency or solar improvements, and the County's Capital Project Program requires all new County buildings (i.e., greater than 10,000 square feet) to be Leadership in Energy and Environmental Design (LEED™) Certified at the Silver Level (CCAR 2009a).

Revisions to the Policy, adopted on June 30, 2015, enhance the County's existing and future policies programs, and reporting with regard to environmental sustainability. Further, the 2015 revisions established a County Sustainability Council with responsibilities that include, but are not limited to, developing consistent approaches and metrics to provide County services in an environmentally sustainable manner and leading efforts to acquire funding for countywide or regional sustainability programs (LACISD 2015).

Additionally, the County has pledged to be a "Cool County" by establishing a GHG emissions footprint; developing a GHG mitigation plan; working with local entities to reduce regional GHGs by 80 percent by 2050; and supporting federal legislation to raise CAFE standards. In addition, the County has implemented various internal programs on energy conservation; water conservation; waste reduction and recycling; green purchasing and contracting; and alternative fuel vehicle purchasing. On January 13, 2009, the County created an action plan for developing a Comprehensive Renewable Energy Program to develop renewable energy projects on existing County facilities and properties.

In 2009, the Los Angeles County Board of Supervisors directed the Chief Executive Officer (CEO) to take actions toward the use of renewable energy. The actions focused upon cost-benefit analyses. The CEO was directed to examine the practicality of Los Angeles County offsetting between 10 percent and 100 percent of current electrical needs through the use of renewable energy, including the purchase of renewable energy credits. The CEO was also instructed to compare costs and benefits of purchasing electricity from renewable energy sources to the costs and benefits of investing money in improving the energy efficiency of the County's operations.

The CEO provided a report to the County with a proposal to include (1) a cost analysis feasibility assessment; (2) recommendations regarding constituent-focused initiatives to be included in the Program; (3) an analysis of community choice aggregation, home energy audits, financing of residential renewable energy products, and other initiatives as deemed appropriate. The May 5, 2014 Energy & Environmental Policy Report #9 updated the accomplishments and activities of the County Office of Sustainability. The Report identified the creation of the Los Angeles County Energy Program, which is a comprehensive home energy retrofit program, and staff training sessions to promote sustainable construction and building operations (LACISD 2014).

Los Angeles County General Plan

The Los Angeles County 2035 General Plan and Programmatic EIR were adopted by the Los Angeles County Board of Supervisors on October 6, 2015. There are five Guiding Principles

that serve as the foundation of the General Plan and all future growth within the County. The Guiding Principles are to (1) employ smart growth; (2) ensure community services and infrastructure are sufficient to accommodate growth; (3) provide the foundation for a strong and diverse economy; (4) promote excellence in environmental resource management; and (5) provide healthy, livable, and equitable communities (DRP 2015b). In addition to the Guiding Principles, the General Plan provides the policy framework for how and where the unincorporated County will grow through the year 2035, while recognizing and celebrating the County's wide diversity of cultures, abundant natural resources, and status as an international economic center. The Los Angeles County 2035 General Plan accommodates new housing and jobs within the unincorporated areas in anticipation of population growth in the County and the region (DRP 2014). The Final EIR addresses the environmental effects associated with the implementation on the Los Angeles County 2035 General Plan. The FEIR finds that Greenhouse Gas Emissions Impacts would be significant and unavoidable without the implementation of Community Climate Action Plan (DRP 2014).

Los Angeles County Community Climate Action Plan

The *Final Unincorporated Los Angeles County Community Climate Action Plan 2020* (CCAP) is part of the County General Plan under the Air Quality Element and was adopted along with the General Plan on October 6, 2015. The County acknowledges the consensus among leading scientists that without action to reduce GHG emissions, climate change due to global warming will pose a considerable threat to the environment and to human health and society (DRP 2015a).

The CCAP is being implemented by the County to mitigate and avoid GHG emissions associated with community activities in unincorporated Los Angeles County. The CCAP addresses emissions from building energy, land use and transportation, water consumption, and waste generation. The measures and actions outlined in the CCAP tie together with the County's climate change initiatives and provides a blueprint for a more sustainable future. To reduce the impacts of climate change, the County has set a target to reduce GHG emissions from community activities in the unincorporated areas of Los Angeles County by at least 11 percent below 2010 levels by 2020, which is consistent with AB 32 targets. The CCAP describes the County's plan for achieving this goal, including specific strategy areas for each of the major emissions sectors, and provides details on the 2010 and projected 2020 emissions in the unincorporated areas.

The actions in the CCAP are priority actions and intended for near-term implementation such that the County can achieve its GHG reduction goal for 2020 for the unincorporated areas of Los Angeles County. The County has designated a CCAP Implementation Team (CIT) to lead and coordinate the County's efforts on CCAP implementation, monitoring, and plan updates. The following is a list of general implementation steps that the County will undertake to implement each CCAP local action.

- Develop implementation plans for each CCAP action
- Estimate project-specific costs
- Adopt or update ordinances and/or codes

- Establish partnerships
- Pursue funding sources
- Create monitoring/tracking processes and indicators
- Engage the community and stakeholders in CCAP action implementation

The environmental impacts associated with implementation of the CCAP were analyzed in the *Los Angeles County General Plan Update Environmental Impact Report* (SCH# 2011081042) certified by the County on October 6, 2015.

Los Angeles County General Plan and Antelope Valley Area Plan

The *Los Angeles County General Plan* and the *Antelope Valley Area Plan* (AVAP) include goals and policies that address greenhouse gases in the unincorporated County. The AVAP goals and policies applicable to the analysis of greenhouse gas emissions with Project implementation are listed below.

Goal LU 5: A land use pattern that decreases greenhouse gas emissions.

> **Policy LU 5.1:** Ensure that development is consistent with the Sustainable Communities Strategy adopted in 2012, an element of the Regional Transportation Plan developed by the Southern California Association of Governments.
>
> **Policy LU 5.2:** Encourage the continued development of rural town centers that provide for the daily needs of surrounding residents, reducing the number of vehicle trips and providing local employment opportunities.
>
> **Policy LU 5.3:** Preserve open space areas to provide large contiguous carbon sequestering basins.
>
> **Policy LU 5.4:** Ensure that there is an appropriate balance of residential uses and employment opportunities within close proximity of each other.

Goal COS 17: Buildings are sustainable, conserving energy, water, and other resources, and limiting greenhouse gas emissions.

> **Policy COS 17.1:** Promote green building techniques for the construction and operation of public and private buildings in the unincorporated Antelope Valley.
>
> **Policy COS 17.2:** Require that new buildings be sited and designed in a manner that maximizes efficient use of natural resources, such as air and light, to reduce energy consumption, heat profiles, and greenhouse gas emissions.
>
> **Policy COS 17.4:** Promote the use of individual renewable energy systems and require appropriate development standards for such systems to minimize potential impacts to surrounding properties. Simplify the permitting process for individual renewable energy systems that meet these development standards.

Policy COS 17.5: Protect active and passive solar design elements and systems from shading by neighboring structures and trees through appropriate development standards.

Policy COS 17.6: Require new landscaping to comply with applicable water efficiency requirements in the County Code.

Policy COS 17.7: Require low-flow plumbing fixtures in all new developments.

Policy COS 17.9: Require reduction, reuse, and recycling of construction and demolition debris.

Los Angeles County Green Building Standards Code (Title 31)

In November 2013, the Board of Supervisors adopted the Los Angeles County Green Building Standards Code (Title 31) in response to the mandates set forth in the CALGreen Code (2010 Green Building Standards Code) (CBSC 2014). Title 31 became effective on January 1, 2014. Title 22 (Planning and Zoning Code) Green Building and Drought Tolerant Landscaping requirements are now found in Title 31. The purpose of Title 31 is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts that have a reduced negative impact or positive environmental impact and that encourage sustainable construction practices in planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental air quality (Title 31 of the Los Angeles County Code). Notably, Title 31 requires nonresidential buildings that are equal to or greater than 25,000 square feet (sf) to comply with the CALGreen Code (specifically, Section A5.601.2.4, Voluntary measures for CALGreen Tier 1). These measures include, but are not limited to, requirements for energy efficiency, parking for fuel-efficient vehicles, cool roofs, reduction of indoor potable water use, recycled content of construction materials, reduction in construction and demolition waste, and thermal insulation (Los Angeles County 2016).

The County's drought-tolerant landscaping requirements establish minimum standards for the design and installation of landscaping using drought-tolerant plants and native plants that require minimal use of water. These requirements include the following: (1) a minimum of 75 percent of total landscaped area must utilize non-invasive drought-tolerant plant and tree species appropriate for the climate zone region; (2) a maximum of 25 percent of landscaped areas may be turf grass; and (3) hydrozoning irrigation techniques shall be incorporated into the landscape design. Title 31 also establishes low-impact development (LID) standards for new construction that would conserve water, energy, and natural resources; divert waste from landfills; minimize impacts to existing infrastructure; and promote a healthier environment (County of Los Angeles 2016a).

Los Angeles County Tree Planting Ordinance (Title 22)

On March 29, 2016, the Board of Supervisors adopted the Tree Planting Ordinance that does the following (DRP 2016b):

- Amended Title 22 (Planning and Zoning) of the Los Angeles County Code ("County Code") to establish tree planting requirements for new projects and

- Amended Title 21 (Subdivisions) and Title 22 (Planning and Zoning) of the County Code to repeal drought tolerant landscaping and green building requirements that are now found in Title 31.

The Tree Planting Ordinance, effective April 28, 2016, includes the following requirements:

a. For projects that are primarily residential with 3 or fewer units per lot, a minimum of 2 trees shall be planted on each lot.

b. For projects that are primarily residential with 4 or more units per lot, a minimum of 1 tree shall be planted for every 5,000 square feet of building footprint per lot.

c. For projects that are nonresidential or mixed-use, a minimum of 3 trees shall be planted for every 10,000 square feet of developed lot area.

Trees planted must (1) provide adequate shade; (2) be resistant to local pests and diseases; (3) be non-invasive species; and (4) be appropriate for the planting location (DRP 2016b) pursuant to Section 22.56.2100.

Los Angeles County Roadmap for a Sustainable Waste Management Future.

On April 22, 2014, the Board of Supervisors adopted a motion directing the development of a Roadmap to achieve a Sustainable Waste Management Future for the County unincorporated communities. Accordingly, the Sustainable Waste Management Future Working Group was formed to collectively develop the Roadmap. The intent of the Roadmap is to guide the County in implementing the four strategies identified by the Working Group, which are as follows: (1) Programs and Services, (2) Measuring Results, (3) Facilities and Infrastructure, and (4) Outreach and Education. By implementing these strategies the Roadmap sets to achieve 80 percent diversion from landfills by 2025; 90 percent diversion from landfills by 2035; and 95 percent (or higher) diversion from landfills by 2045. To accomplish these goals, the Working Group identified specific recommended initiatives, which will be expanded in detailed implementation plans. Although the Roadmap does not contain currently enforceable regulations, development under the *Centennial Specific Plan* will comply with any implementation plans once adopted.

5.21.3 ENVIRONMENTAL SETTING

Global, National, State, and Regional Contributions to GHG Emissions

Table 5.21-2 compares the magnitude of GHG emissions on the global, national, State, and regional (i.e., Los Angeles County) scales.

TABLE 5.21-2
COMPARISON OF WORLDWIDE GHG EMISSIONS

Area and Data Year	Annual GHG Emissions ($MMTCO_2e$)
World (2012)	46,049
United States (2014)	6,870
California (2013)	459
Los Angeles County, Unincorporated (2010)	8.0
$MMTCO_2e$: million metric tons of carbon dioxide equivalent Source: WRI 2016; USEPA 2016; CARB 2015c; DRP 2015a.	

The U.S. contributes approximately 14.7 percent of worldwide GHG emissions per year; California contributes approximately 1.0 percent; and the unincorporated portion of the County contributes approximately 0.02 percent. CO_2 constitutes approximately 84 to 85 percent of all GHG emissions in the U.S. and California. The primary contributors to California GHG emissions are (1) transportation; (2) electric power production from both in-state and out-of-state sources; and (3) industrial uses. The primary contributors to unincorporated County GHG emissions are (1) building energy (49 percent) and (2) transportation (42 percent). The CCAP forecasts that unincorporated County GHG emissions will increase from 7.98 $MMTCO_2e$ per year in 2010 to 9.06 $MMTCO_2e$ per year in 2020 (DRP 2015a).

California GHG emissions have fallen from about 1.36% of the global total in 1990 to about 0.98% in 2011 (WRI 2016). The annual amount of global $C0_2e$ emissions increased by 12,936 $MtCO_2e$ from 1990 to 2011, or by more than 40% since 1990. For the same period, California's CO_2e emissions increased by only 8.3 $MTCO_2e$ (2%), and declined by approximately 10.7% from 2007 to 2011. Overall, California accounted for only 0.065% of the net global CO_2e emissions increase between 1990 and 2011. Moreover, California emits approximately 50% less CO_2e per capita than the rest of the United States, and far less than locations such as Texas or Canada. In 2011, California emitted 11.4 metric tons CO_2e per capita, whereas the US, Texas, and Canada emitted 22.3, 30.9, and 20.9 metric tons CO_2e per capita, respectively. Indeed, California's 2011 per capita GHG emission rate was on part with Germany (10.8 $MTCO_2e$ per capita), a country widely regarded as a world leader in the development of zero-emission energy sources (WRI 2016).

Project Site GHG Emissions

The Project site is currently undeveloped and used primarily for livestock grazing. Of the 12,323 acres of land comprising the Project site, approximately 10,950 acres (89 percent) are currently used for cattle grazing. Existing GHG emissions from the Project site occur from enteric fermentation (cattle digestive processes), which primarily produces CH_4, and from vehicles used on the property for grazing management. The extensive vegetation on the Project site sequesters CO_2, thereby reducing GHG emissions attributed to the existing condition. A portion of State Route (SR) 138 extends through the Project site, and vehicles traveling that roadway do emit GHGs. However, for the purposes of this analysis, it is

assumed that the existing emissions are not quantified, as they are not associated with activities at the site.

Local Climate Change Effects

The following descriptions of potential adverse effects are taken from the CCAP.

Large increases in global GHG concentrations could have substantial adverse effects on natural and human environments in the unincorporated areas. Current research efforts coordinated through the CARB and other State agencies examine the specific changes to California's climate that will occur as Earth's surface warms. California's *2012 Vulnerability and Adaptation Study*, the State's third major assessment on climate change, examines local and statewide vulnerabilities to climate change and includes new data and projections on climate changes in California. Dr. Alex Hall, from the University of California, Los Angeles (UCLA), in partnership with the Los Angeles Regional Collaborative for Climate Action and Sustainability (LARC), recently published several studies that develop climate change predictions that are specific to the greater Los Angeles area. These studies indicate that if GHG emissions continue to increase globally based on current trends, climate change could impact the natural environment in the following ways:

Increases in Ambient Temperatures: On average, the Los Angeles region is expected to warm 4 to 5°F over land by mid-century. The coasts and oceans will likely warm the slowest, whereas the mountains and deserts will experience more rapid warming. Warming across the region will be greatest in the summer and fall. For the unincorporated areas in particular, UCLA's high emissions modeling scenario predicts that mountain and inland areas may warm up to or greater than 4.5°F, and coastal and valley/urban areas warming up to 3.7 to 3.9°F.

Increases in Extreme Heat Conditions: Heat waves and very high temperatures could last longer and become more frequent. The number of extreme heat days is expected to triple in the coastal and central areas; the San Fernando Valley and San Gabriel Valley will witness almost a quadrupling of heat days. The number of extreme heat days in the desert and mountain areas will increase five to six times relative to the current amounts. For the unincorporated areas in particular, UCLA's high emissions modeling scenario predicts a nearly 12-fold increase in the number of heat days.

Decreased Snowfall and Winter Snowpack: The region's mountains could see a 42 percent reduction in annual snowfall by mid-century. The winter snowpack is also expected to melt 16 days earlier as a result of rising temperatures. As of March 2014, California is facing a severe drought and the snowpack in the Sierra Nevada is 12 percent of the annual average (DWR 2014). Changes in snowfall could exacerbate drought-like conditions, reducing water supplies and water security for all end users throughout the County.

Increased Frequency, Intensity, and Duration of Extreme Storms: Changes in storm events could create conditions that are conducive to air pollution formation, which further exacerbates air quality issues. Increased winter storm events could also affect peak stream flows and flooding as well as landslides.

Changes in Growing Season and Species Distribution: Changes in growing season conditions could cause variations in crop quality and yield. Plant and wildlife distributions may also be affected by changes in temperature, competition from colonizing species, regional hydrology, sea level, and other climate-related effects.

Rising Sea Levels: Sea levels are expected to steadily rise by mid-century, which could inundate portions of the coastline.

5.21.4 PROJECT DESIGN FEATURES

Green Development Program

The Project would implement a Green Development Program, included as Appendix 1-B to the *Centennial Specific Plan*. The Green Development Program includes but is not limited to:

- Project features that comply with and implement the CCAP and
- Additional Project features that comply with and implement State and federal GHG reduction mandates and goals.

The Project first applies land use planning principles to create a balanced master-planned community that includes mixed-use neighborhoods where residential, commercial, and other employment-generating uses and institutional/public uses are proximate to each other and connected by a network of pathways to reduce reliance on automobile use and off-site commuting. The bicycle and pedestrian trail system connects community uses such as neighborhood parks, elementary schools, and neighborhood-scale retail to reduce single-occupancy automobile travel for these neighborhood-scale destinations.

The Project then applies infrastructure and building design standards to reduce GHG emissions through energy and water conservation measures. The Project's integrated water resources management approach would (1) minimize water use and maximize water reuse through development of two wastewater reclamation facilities (WRF) that will produce recycled water for landscape irrigation use throughout the Project site and (2) incorporate a variety of water supply sources including State Water Project (SWP) water, banked water, groundwater, and other non-SWP supplies to reduce the GHG emissions associated with water supply delivery.

The Project includes components (e.g., the Mobility Plan, Green Development Program) to conserve and enhance open space, promote transit, and reduce waste. Development within established Significant Ecological Areas would be entirely avoided, thereby minimizing disturbance of high-value biological resources and preserving open space areas that sequester CO_2. As part of the Green Program the Project incorporates a comprehensive waste diversion and recycling program. In order to promote the use of alternative forms of transportation, the Project includes a Transportation Management Association (TMA) that develops strategic linkages with other Antelope Valley/Santa Clarita Valley TMAs or similar organizations in order to maximize transit efficiencies and services. The TMA's purpose is to coordinate and facilitate transit and rideshare usage to serve as many riders as possible thereby reducing GHG emissions from mobile sources.

Elements of the Green Development Program that would reduce GHG are stated in the project design features (PDF) listed below. The emissions reductions for some PDFs are quantifiable; others are not, but would reduce GHG emissions from the quantified levels and reduce associated GHG emissions impacts. PDFs that demonstrate quantifiable GHG emissions reductions are also stated as Mitigation Measures.

Operational – Energy Efficiency

PDF 21-1 The Green Development Program requires compliance with CALGreen voluntary measure A4.203.1.2.1 for low-rise residential buildings. Therefore, the energy efficiency of these buildings would exceed 2016 Title 24 requirements by 15 percent. Low-rise residential buildings are three stories or less.

PDF 21-2 The Green Development Program requires compliance with CALGreen voluntary measure A5.203.1.2.1 for nonresidential buildings. Therefore, the energy efficiency of nonresidential, hotel, and high-rise residential buildings would exceed 2016 Title 24 requirements by 10 percent. High-rise residential buildings are four stories or more.

PDF 21-3 The Green Development Program requires a minimum of 50 percent of the Project's anticipated electrical energy demand at buildout (i.e. household, business, civic/institutional, recreational, and public facilities) shall be satisfied from on-site renewable energy generation. "Anticipated electrical energy demand" shall be determined on the basis of the anticipated loads for each building as shown in the reports submitted at the time of building permit application pursuant to the Building Energy Efficiency Standards of Title 24 or equivalent. "On-site renewable energy generation" includes, but is not limited to, solar, wind, geothermal, biofuel and hydroelectric systems. These systems shall be installed in connection with the development of one or more of the following: residential units, nonresidential buildings, public buildings, or Specific Plan utility facilities located either within the Specific Plan area or within its immediate vicinity.

PDF 21-4 The Green Development Program requires that a minimum of 70 percent of public and community pools and spas would be equipped with active solar heating systems where heating is necessary or desired. The applicant for a pool permit shall provide the proposed plan for compliance with this provision prior to obtaining a permit for the pool.

PDF 21-5 The Green Development Program requires that deeds, CC&Rs (Covenants, Conditions and Restrictions), or similar legal documents contain the following requirement: The owners of all single-family and multi-family residential units shall be required, upon resale, to present to the buyer a written energy audit checklist prepared by a qualified third party at the time the seller provides the buyer with the Real Estate Transfer Disclosure Statement required by Section 1102 et seq. of the *California Civil Code.* The energy audit checklist shall certify that all heating, ventilation, and air conditioning (HVAC) systems,

thermostats, appliances, windows and swimming pools (if applicable) are the same as those originally installed or, if changed, otherwise comply with Centennial's Green Development Program. The CC&Rs of the master homeowners association or other applicable association shall require compliance with the provisions of this measure and shall provide notice to individual owners of the resale energy audit checklist requirement. The master homeowners association or other applicable association shall monitor compliance and provide the County with an annual report of compliance with this measure.

PDF 21-6 The Green Development Program requires that deeds, CC&Rs, or similar legal documents contain the following requirement: For nonresidential buildings, within 90 days after the end of the first full calendar year following the issuance of the certificate of occupancy and within 90 days after each 5-year period thereafter, the owner or tenant in possession thereof shall submit to the master commercial owners association or other applicable association a report prepared by the owner or a qualified, independent third party that evaluates whether all major building systems such as heat furnace, air conditioner, and other mechanical fixtures are working within the design standards established for each system. The master commercial owners association or other applicable association shall monitor compliance and provide the County with an annual report of compliance with this measure.

PDF 21-7 The Green Development Program requires builders to install energy efficient major appliances and HVAC systems which meet the more stringent of applicable California Energy Commission (CEC) requirements or ENERGY STAR requirements. Major appliances subject to this requirement include dishwashers, clothes washers, refrigerators, and room air conditioners.

PDF 21-8 The Green Development Program requires that the Project's wastewater reclamation facilities (WRF) will include equipment to capture and reuse biogas for energy production.

Operational – Vehicle Trip and Vehicle Miles Traveled Reductions

PDF 21-9 The Green Development Program requires that the Project establish a Transportation Management Association (TMA) that develops strategic linkages with other Antelope Valley/Santa Clarita Valley TMAs or like organizations in order to maximize transit efficiencies and services. The TMA's purposes are to coordinate and facilitate transit and rideshare usage to serve as many riders as possible; to promote multi-modal transportation services and options; and to reduce resident and employee use of single-occupancy automobiles for off-site commuting, and for internal travel within the Specific Plan. PDF 21-9 is required for implementation through MM 10-1, detailed in Section 5.10, Traffic, Access, and Circulation.

PDF 21-10 The Centennial Affordable Housing Implementation Plan (see Appendix 3-H of the Centennial Specific Plan, which is in Appendix 4.0-A of the EIR) will be

adopted in conjunction with the Specific Plan, which includes dedication of a minimum of ten percent of all homes in Centennial communities that permit housing, with the exception of the lowest density area (Community 8-2) will be affordable. The California Air Pollution Control Officers Association's (CAPCOA's) 2010 document entitled *Quantifying Greenhouse Gas Mitigation Measures* identifies affordable housing as a quantifiable measure for reducing GHG emissions as it allows lower income families to live closer to jobs centers.

PDF 21-11 The Centennial Specific Plan's Green Development Program requires the installation of one 208/240 volts of alternating current (VAC) receptacle that may be used for charging electric vehicles in each detached and attached single-family residence. The installation shall comply with requirements of Section 4.106.4.1 of the 2016 CALGreen Code, or the most applicable code at the time of construction.

PDF 21-12 The *Centennial Specific Plan's* Green Development Program requires each applicant for an applicable construction permit to install "alternative energy fueling stations" as listed below. An "alternative energy vehicle fueling station" is a 208/240 VAC electrical vehicle charging station (allowing simultaneous charging of two or more vehicles) or a station providing another new or improved technology (e.g. compressed natural gas [CNG] and hydrogen fuel cell) that provides refueling for vehicles that do not use fossil fuel.

- Business Park and Institutional land use designations shall provide a minimum of one alternative energy vehicle fueling station on site for the first 50,000 square feet of usable floor space and additional alternative energy vehicle fueling stations for each additional 50,000 square feet of usable floor space thereafter.
- Multi-family residential buildings of at least 20 residential units shall provide a minimum of one alternative energy vehicle fueling station for the first 20 residential units and an additional alternative energy vehicle fueling station for each additional 20 residential units thereafter.
- The Town Center and each Village Center shall provide a minimum of one alternative energy vehicle charging station.
- Designated Transit Hubs shall provide a minimum of one alternative energy vehicle charging station.

PDF 21-13 The Green Development Program requires that, prior to the issuance of each nonresidential construction permit, the Project Applicant/Developer shall provide plans and specifications to the County demonstrating that the following features have been incorporated into the building designs:

- Bicycle parking spaces at a rate of 5 percent of minimum required vehicle parking spaces for nonresidential land uses or as required by Section 22.52.1225B of the County Code, whichever is more stringent

- For new nonresidential buildings with over 10 tenant-occupants, provide secure bicycle parking spaces at a rate of 5 percent of tenant parking being added, with a minimum of 1 space. Acceptable parking facilities shall be conveniently reached from the street and may include, but not be limited to:

    - Covered, lockable enclosures with permanently anchored racks for bicycles.
    - Lockable bicycle rooms with permanently anchored racks.
    - Lockable, permanently anchored bicycle lockers.

PDF 21-14 The Green Development Program requires that prior to the issuance of an applicable construction permit for each residential building permit, the Project Applicant/Developer shall provide plans and specifications to the County demonstrating that the following features have been incorporated into the building designs or specifications.

- Visitor parking shall include preferentially located parking spaces for alternative-fueled vehicles.
- Bicycle parking shall be provided as specified in Section A4.106.9, Residential Voluntary Measures, of the CALGreen Code or as required by Section 22.52.1225B of the County Code, whichever is more stringent.

PDF 21-15 The Green Development Program requires that prior to issuance of an applicable construction permit for each parking structure and parking lots with 20 or more parking spaces, the Project Applicant/Developer shall provide plans and specifications to the County demonstrating that the following features have been incorporated into the parking facility:

- The parking facility shall include a minimum of five percent preferentially located parking spaces for alternative-fueled (electric, natural gas, or similar low-emitting technology) vehicles.
- The parking facility shall include at least one electric vehicle charging station. Electrical lines shall be designed and sized to add additional charging stations for up to three percent of the total parking spaces when a demand is demonstrated. The design and installation shall be consistent with Section A4.106.8.2, Residential Voluntary Measures, of the CALGreen Code.

PDF 21-16 The Green Development Program requires that the Project Applicant/Developer provide:

- Internet infrastructure and high-speed broadband access to facilitate telecommuting.

- A community intranet (or similar) with access for homeowners associations; interest groups; local event scheduling; schools, library, carpool and transit services; and other on-site entertainment and amenities reduce the need for people to use automobile travel to obtain the information that is provided.

Compliance shall be required prior to the issuance of building permit for the 1,000th residential unit.

Operational – Water Conservation to Reduce Emissions Associated with Water Supply, Treatment, and Distribution

PDF 21-17 The Green Development Program requires each applicant for an applicable construction permit for a nonresidential or multi-family building to install recycled water infrastructure to serve common areas for these facilities, except where prohibited by law. To the extent recycled water is produced within the Project and available, recycled water shall be used for landscape irrigation within those common areas. Compliance with these measures shall be established prior to the issuance of a building permit for nonresidential and multi-family facilities and at the time of County approval of final landscaping plans submitted by the applicant after final map recordation for homeowners association common areas. Covenants, conditions and restrictions shall require the owners of such common areas to maintain, repair and replace irrigation systems and plantings in accordance with County approved plans.

PDF 21-18 The Green Development Program requires each applicant for an applicable construction permit for a nonresidential building to install indoor plumbing fixtures and fixture fittings that would reduce the overall use of potable water within the building by 12 percent, consistent with 2016 CALGreen Tier 1 nonresidential voluntary measures as prescribed in Section A5.303.2.3.1 of the code.

PDF 21-19 The Green Development Program requires each applicant for an applicable construction permit for a single or multi-family residential building to install kitchen faucets and appliances that comply with 2016 CALGreen code residential voluntary measures specified in Sections A4.303.1 and A4.303.3 of the code.

PDF 21-20 Implement MM 18-1, which requires water rates to be based on the assigned water budget for each parcel, to assure that outdoor landscaped areas for single-family and multi-family homes do not exceed the assigned outdoor water budget for the parcel through excessive watering or excessive turf planting.

Construction – Vehicle Emissions Reduction

PDF 21-21 The Green Development Program requires that, prior to the issuance of each construction permit, the Project Applicant/Developer shall require in contract

specifications that contractors set goals to limit unnecessary construction equipment idling to three minutes and provide a program to encourage equipment operators to achieve the three-minute goal. This requirement exceeds State regulations (*California Code of Regulations* [CCR], Title 13, 2449[d][2]) that limit idling to five minutes.

5.21.5 THRESHOLD CRITERIA

CEQA Thresholds

The following significance threshold criteria are derived from the County of Los Angeles Environmental Checklist and track the thresholds recommended in the State CEQA Guidelines as amended by the California Natural Resources Agency (CNRA) (CNRA 2009a). The Project would result in a significant impact if it would:

Threshold 21-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Threshold 21-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Neither the County's Environmental Checklist nor the State CEQA Guidelines prescribe specific methodologies and significance criteria for determining the significance of GHG emissions impacts. The State CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate thresholds consistent with the manner in which other impact areas are handled in CEQA. CEQA cases have upheld local agencies discretion to determine the significance of GHG emissions.

As with all determinations made in preparing an EIR, pursuant to Section 15064.7(b) of the State CEQA Guidelines, even without the express discretion as is the case for GHG, the substantial evidence standard applies to an agency's determination of the significance of an impact. Under Section 15384, substantial evidence is defined as "facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts". Under the substantial evidence standard, even if there is other information that supports a contrary conclusion, or a disagreement among experts as to the methodology or significance criteria, so long as the agency decision is supported by substantial evidence, it will be upheld even if there is other substantial evidence or expert opinions to the contrary (California 1988, p. 407). As such, an agency determination of significance is upheld so long as it is based on substantial evidence.

Determining how to analyze the significance of a project's climate change impacts poses a difficulty for lead agencies. The science in this area is evolving constantly. At the same time, local agencies do not specialize in this area, and there are currently no local, regional, or statewide significance criteria for determining whether a mixed-use residential development in the County of Los Angeles has a "significant" impact on climate change. Although the CNRA has adopted the CEQA Amendments developed by OPR pursuant to SB 97, as discussed above, the CEQA Amendments pose two questions that agencies should

evaluate, they leave considerable discretion to lead agencies to develop appropriate methodologies and significance criteria in evaluating these questions. As such, the County's analysis of GHG significance is a good faith effort to consider all potential significance criteria under the current state of the guidance, policy, and regulation.

Under Threshold 21-1, this impact analysis evaluates consistency with regulatory programs designed to reduce GHG emissions and that contribute to the achievement of AB 32's goals as the primary significance criterion. In addition, for informational purposes, this impact analysis also evaluates the Project's estimated emissions as compared to the Antelope Valley Air Quality Management District (AVAQMD) significance thresholds for impacts related to GHG emissions, as well as certain significance thresholds for impacts related to GHG emissions proposed by staff of South Coast Air Quality Management District (SCAQMD), but not adopted by SCAQMD Board.

Under Threshold 21-2, this impact analysis evaluates consistency with the Los Angeles County Community Climate Action Plan (CCAP) and consistency with SCAG's RTP/SCS as primary significance criteria. For informational purposes, this impact analysis also evaluates consistency with the GHG emissions-related goals and policies of the *Antelope Valley Area Plan* (AVAP).

Therefore, this impact analysis utilizes the "potential compliance pathways" described by the Court in the *Newhall* decision, namely compliance with a local climate action plan and/or other geographically specific GHG emission reduction plans (i.e., the CCAP, the SCAG RTP/SCS, and, for informational purposes, the AVAP); compliance with regulatory programs designed to reduce GHG emissions and that contribute to the achievement of AB 32's goals; and, for informational purposes, consistency with numerical GHG significance thresholds (AVAQMD and staff-proposed SCAQMD significance thresholds).

As discussed in Section 5.21.5, following the Supreme Court's decision in *Newhall*, on November 2016, the CDFW released a draft Additional Environmental Analysis (AEA) intended to address that agency's CEQA compliance obligations at issue in that case. (CDFW 2016) As described in the AEA, the *Newhall* project applicant (Five Point LLC) voluntarily modified its project and proposed to achieve "net zero" GHG emissions for the project with the implementation of 13 mitigation measures described in the AEA. On that basis, the AEA concludes that, since the *Newhall* project will result in no net increase in GHG emissions, it would not contribute to cumulative GHG emissions influencing global climate change and thus would not conflict with any plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs. Consequently, the AEA concludes that project GHG and climate change impacts would be less than significant (CDFW 2016, pp. 1-18).

It is important to note that the *Newhall* AEA does not establish a new significance criteria of any kind, much less a "net zero" GHG threshold under CEQA. In fact, agencies that have considered a zero threshold approach have rejected it. For example, despite having been urged to propose a zero-emissions CEQA threshold in its proposed amendments to the CEQA guidelines regarding the analysis of GHG emissions released in April 2009 (Proposed Guidelines), the state Office of Planning and Research (OPR) responded in its *Initial Statement of Reasons for Regulatory Action: Proposed Amendments to the State CEQA*

Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97 that Section 15064.4(b)(1) of the Proposed Guidelines is not intended to suggest a zero emission threshold, as CEQA does not include a "one molecule" rule. (CRNA 2009a, p. 20; *see also*, SJVAPCD 2009b, p. 34 [explaining that OPR's Proposed Guidelines confirm that a lead agency is not responsible for wholly eliminating all GHG emissions from a project]). In addition, in its report to the Ventura County Air Pollution Control Board on GHG significance thresholds, staff reported that "[n]ot a single California air pollution agency is considering either of the first two approaches for GHG significance thresholds [a "no threshold approach" or a "zero threshold approach"].

Moreover, with respect to the *Newhall* AEA, the applicant imposed a "net zero emissions" program for GHG; it was not imposed under CEQA by the State of California, which is acting as the lead agency, and unlike a local city or county has direct statutory and regulatory authority to reduce GHG emissions from all sectors of the California economy, including most notably the major sectors producing GHG emissions (electricity production, transportation fuels, and large-scale industrial facilities such as refineries and cement plants). In the *Newhall* AEA, for example, CARB and Cal/EPA were directly involved in – and contemporaneously produced a letter affirming the achievement of – the *Newhall* applicant's "net zero" voluntary proposal. With respect to the project analyzed in this EIR, the County's land use jurisdiction does not extend to having jurisdiction or control over the vast majority of GHG emissions within the state. With respect to consideration of land use project, particularly large-scale projects, this EIR considers – and the Project complies with – SB 375, which is the state's statutory program for ensuring GHG reductions from land use and transportation projects, as discussed in Section 5.21.6.

5.21.6 ENVIRONMENTAL IMPACTS

On-Site Impacts

Threshold 21-1 Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Compliance with Regulatory Programs Designed to Reduce GHG Emissions and Project GHG Emissions

In addition to complying with the policies and regulations of the CCAP (discussed in Table 5.21-11 below), the Project will incorporate the project design features and comply with applicable regulations designed to reduce GHG emissions, thus contributing to the achievement of AB 32's goals. Some regulatory measures were promulgated prior to or independently of AB 32, and others were identified in CARB's 2008 Climate Change Scoping Plan and promulgated subsequent to approval of the Scoping Plan. A full list and description of these project design features and regulatory programs are presented in detail above in Sections 5.21.4 and 5.21.2, respectively. Following the Newhall Court's direction, the following highlight key project design features and regulatory programs, organized by emission source category, in order to clarify which measures apply to each emission source, thus contributing to the reduction of GHG emissions associated with that source. After a brief

discussion of the methodology used to calculate the Project's GHG emissions, this analysis is organized by the following emissions source categories:

- Construction emissions
- Vegetation changes
- Annual operational emissions
    - Area sources (lawn mowers; natural gas fire places)
    - Energy use
    - Water supply, treatment, and distribution
    - Solid waste
    - Mobile source

Calculation Methodology

GHG emissions were calculated by using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 as described in Section 5.11, Air Resources. In addition to the construction and operational inputs described in Section 5.11, Air Resources, the GHG emissions analysis includes the following input data or estimates:

- Electrical energy use
- Water use – indoor and outdoor, potable and recycled
- Solid waste generation
- Carbon sequestration loss from vegetation removal and gain from planting of trees
- Renewable generation of 50 percent of the Project's electrical energy use as specified in PDF 21-3, as implemented by MM 21-1.
- For the calculation of GHG emissions for the electrical energy used by the Project, including direct Project consumption of electricity and the electricity used to supply, distribute, and treat water used by the Project, it was assumed that Southern California Edison (SCE) would achieve the 50 percent renewable energy goal for 2030 established by EO B-30-15 and SB 350. It was not assumed that renewable energy would exceed 50 percent by 2035. (Note that under the modeling methodology, this 50 percent renewable energy assumption was made only for electricity consumption, and did not extend to transportation, etc.)
- Energy efficiency was assumed to exceed the 2016 code requirements as specified in PDF 21-1 and PDF 21-2, as implemented by MM 21-2 and 21-3, respectively. No credit was taken for additional energy efficiency that may be required by the 2019 and subsequent codes.

One-Time Emissions

Construction Emissions

The major construction phases included in this analysis are as follows:

- **Demolition** involves tearing down of buildings or structures and removal of asphalt and concrete parking areas and walkways.
- **Site Preparation** involves clearing vegetation (grubbing and tree/stump removal) and stones prior to grading.
- **Grading** involves cut and fill of land to ensure the proper base and slope for the construction foundation.
- **Building Construction** is the construction of structures and buildings.
- **Architectural Coating** is the application of coatings to both the interior and exterior of buildings or structures
- **Paving** is the laying of concrete or asphalt such as in parking lots or roads.

These phases would occur in connection with anticipated construction at the Project site and related off-site Project impact areas, as described in Section 4.0, Project Description. GHG emissions from these construction phases are largely attributable to fuel use from construction equipment and worker commuting. Additional indirect GHG emissions would result from the supply and delivery of water used during site grading.

Construction GHG emissions were calculated by using CalEEMod Version 2016.3.1 as described in Section 5.11, Air Resources. Specific inputs to CalEEMod include but are not limited to the start and finish dates of construction phases; inventories of construction equipment to be used during each phase; areas to be paved; and areas to be painted. Output emissions data are provided for off-road equipment and on-road vehicles.

Once construction begins (in Year 1), it will proceed continuously for approximately 20 years, with full buildout completed after 20 years. Construction emissions are calculated for the following construction activities: grading, building, paving, and architectural coating (painting).[2] The rate of construction would vary with a variety of factors including, but not limited to, market demand, weather, and as-found site conditions. The estimation of the quantities of grading, building, paving, and painting on a year-by-year basis for a 20-year project would be highly speculative. Therefore, the construction effort is initially evaluated assuming that each construction activity would be spread equally over the applicable years. Additionally, as further explained below, construction emissions are evaluated for a peak grading year.

Grading would occur from Year 1 through Year 18. Preliminary grading engineering design indicates that approximately 127 million cubic yards (mcy) of earth would be moved for the total Project. Based on the preliminary grading estimates, the average daily grading quantity

2 Emissions modeling often includes demolition and site preparation (clearing and grubbing) activities. Demolition required for the proposed Project would be negligible. Clearing and grubbing would be predominantly grassland, and would occur concurrently with grading.

over the 18 years of grading would be approximately 26,500 to 36,500 cubic yards (cy), depending on the number of days of grading. For a conservative estimate, it is assumed that grading would be limited by weather and other factors to 200 days per year, and the average daily grading quantity would be 36,500 cy. Cut and fill would be balanced on the Project site and no off-site export or import is anticipated. Soil movement within the site would be by scraper. Equipment used for the average year grading analysis is shown in Table 5.21-3 Further below in Table 5.21-10, all summary of all Project-related GHG emissions are presented.

TABLE 5.21-3
GRADING, BUILDING, PAVING, AND ARCHITECTURAL COATING EQUIPMENT FOR AVERAGE YEAR EMISSIONS ESTIMATES

Equipment Type	Number of Equipment
Grading	
Scrapers	10
Dozers	7
Compactors	2
Water trucks	2
Graders	1
Building	
Cranes	4
Forklifts	12
Tractor/Loader/Backhoes	12
Welders	4
Generator Sets	4
Paving	
Paving Machine	1
Roller	3
Architectural Coating	
Compressors	4

For the purposes of the GHG modeling assumptions, the Project construction is assumed to begin in 2016, with buildout complete in 2035, although the actual start of construction and buildout are likely to occur later than 2016 and 2035, respectively. The 2035 buildout date is consistent with the Project traffic impact analysis (see Section 5.10, Traffic, Access, and Circulation) and also with the CalEEMod model, which does not include on-road emissions factors beyond 2035. This is a conservative approach; if the actual start of construction occurs later than 2016 and buildout occurs later than 2035, both the construction equipment fleet and on-road vehicles are assumed to be "cleaner" than would be the case if construction starts in 2016 and buildout occurs in 2035, as described CARB's 2016 Mobile Source Strategy. This is so because such later model vehicles will be subject to more stringent emission controls and fuel standards and thus generate less unit emissions with each future

year. As such, assuming development of the Project site occurs sooner than is likely to occur provides a more conservative assessment of construction GHG emissions.

It is estimated that construction grading would use 9,744 acre-feet (3,176 million gallons) of water for dust control during the estimated 20-year construction period. This estimation accounts for climatic conditions (i.e., dry and windy conditions) in the Project area. The water would come from previously imported water, banked, and stored north of the Project site. GHG emissions associated with this water use were calculated using energy data from CAPCOA's 2010 publication, *Quantifying Greenhouse Gas Mitigation Measures* and the SCE GHG intensity factor for 2025 (CAPCOA 2010).

The estimated Project construction GHG emissions for the Project's 20-year construction period are estimated at 134,692 $MTCO_2e$. CalEEMod data for construction emissions are included in Appendix 5.11-A.

Regulatory Requirements

SCAQMD Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Thresholds. Because construction activity impacts are relatively short in duration, they contribute a relatively small portion of the total lifetime GHG emissions of a project. In addition, GHG emissions-reduction measures for construction equipment are relatively limited. Therefore, in its *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Thresholds*, the SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies (SCAQMD 2008). That method is used in this analysis. Emissions generated during the operational phase of the Project are considered in addition to the amortized construction phase emissions.

USEPA and NHTSA CO_2 Standards. The USEPA and NHTSA have adopted standards for CO_2 emissions and fuel consumption, respectively, tailored to each of three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to USEPA, this program will reduce GHG emissions and fuel consumption for affected vehicles by 6 percent to 23 percent.

CARB Airborne Toxic Control Measures and Emission Standards. CARB adopted an airborne toxic control measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel PM and other toxic air contaminants. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways. This measure also does not allow diesel-fueled commercial vehicles to idle for more than five minutes at any given time. In addition to limiting exhaust from idling trucks, CARB promulgated emission standards for off-road diesel construction equipment such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. This regulation aims to reduce emissions through installation of diesel particulate filters and encouraging the replacement of older, dirtier engines with newer emission-controlled models. Implementation is staggered based on fleet size, with the largest operators beginning compliance in 2014.

Title 24 Green Building Standards Code. The 2013 California Green Building Standards Code (24 CCR Par 11), also known as the CALGreen Code, contains mandatory requirements aimed to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction. For example, projects must recycle and/or salvage for reuse a minimum of 50 percent of nonhazardous construction and demolition debris or meet local ordinance, whichever is more stringent (Section 5.408.3). In addition, 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled (Section 5.408.4).

Los Angeles Green Building Standards Code. Title 31 of the Los Angeles County Code of Ordinances was adopting in 2013 in response to the mandates set forth in the CALGreen Code. The purpose of Title 31 is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact, or positive environmental impact, and encouraging sustainable construction practices in planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental air quality.

Antelope Valley Area Plan (AVAP). Policy COS 17.1 promotes green building techniques for the construction and operation of public and private buildings in the unincorporated Antelope Valley. Policy COS 17.9 requires reduction, reuse, and recycling of construction and demolition debris.

Project Design Features

PDF 17-2. PDF 17-2 of Section 5.17, Other Services, states that the Project has committed to diverting from landfill disposal 100 percent of soil during grading activities, and at least 70 percent of nonhazardous construction and demolition waste, which exceeds the 65 percent diversion requirement with the Tier I voluntary measure in Section A5.408.3.1 of the California Green Building Standards Code. This goal also exceeds the 50 percent reduction required by Section 20.87.040 of the County Code and Sections 4.408.5/5.408.1.4 of the CALGreen Code. PDF 17-2 is required for implementation through MM 17-9.

PDF 21-21. The Green Development Program requires that, prior to the issuance of each construction permit, the Project Applicant/Developer shall require in contract specifications, that contractors set goals to limit unnecessary construction equipment idling to three minutes and include a program to encourage equipment operators to achieve the three-minute goal.

As the Project will incorporate these project design features and must comply with these applicable regulations imposed by law, the Project would contribute to the achievement for AB 32's goals related to construction emissions.

PDF 21-21 is required for implementation through MM 21-4.

Vegetation Changes

Permanent vegetation changes that would occur as a result of Project development constitute a change in the carbon sequestration capacity of the Project site.

The loss of vegetation would occur concurrently with construction. Therefore, the increase in GHG emissions attributable to the loss of carbon sequestration is also amortized over 30 years. However, the reduction in GHG emissions resulting from the planting of new trees would occur more slowly and this reduction is conservatively amortized over 100 years in accordance with IPCC recommendations.

The removal of an estimated 6,416 acres of grassland and other vegetative covers on the Project site during construction would result in an estimated reduction in current levels of sequestration of 27,653 $MTCO_2$ as shown in Table 5.21-4. The planting of an estimated 35,123 new trees, as required by the adopted County Tree Planting Ordinance would result in an estimated long-term sequestration of 24,867 $MTCO_2e$. Therefore, in total the Project would result in an overall reduction in the amount of carbon sequestration on the Project site, resulting in an overall increase in GHG emissions of 2,786 $MTCO_2$ (27,653–24,867 $MTCO_2$). A summary of all Project-related greenhouse gas emissions is presented in Table 5.21-10 later in this section.

TABLE 5.21-4
VEGETATION CHANGE GREENHOUSE GAS EMISSIONS

Type of Vegetation	Acres in Current Condition	Acres in Buildout Condition	Net Change	GHG Emissions $MTCO_2$
Grassland	6,416[a]	0	-6,416 acres	+ 27,653
Annual Increase in CO_2 over 30 year Amortization				**+922**
Type of Tree	**Replacement Trees in Current Condition**	**Replacement Trees in Buildout Condition**	**Net Change**	
Miscellaneous	0	35,123	+35,123 trees	-24,867
Annual Decrease in CO_2 over 100 year Amortization				**-249**

GHG: greenhouse gas; $MTCO_2e$: metric tons of carbon dioxide

Regulatory Requirement

Los Angeles County Tree Planning Ordinance. On March 29, 2016, the Board of Supervisors adopted the Tree Planting Ordinance, effective April 28, 2016, includes the following requirements:

a. For projects that are primarily residential with 3 or fewer units per lot, a minimum of 2 trees shall be planted on each lot.

b. For projects that are primarily residential with 4 or more units per lot, a minimum of 1 tree shall be planted for every 5,000 square feet of building footprint per lot.

c. For projects that are nonresidential or mixed-use, a minimum of 3 trees shall be planted for every 10,000 square feet of developed lot area.

Trees planted must (1) provide adequate shade; (2) be resistant to local pests and diseases; (3) be non-invasive species; and (4) be appropriate for the planting location (DRP 2016b).

Annual Operational Emissions

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

The proposed Project incorporates elements that reduce Project-generated emissions during operation. In addition, the Project would be required to comply with applicable federal, State, and local rules and regulations to further reduce long-term operational emissions. A wide range of regulatory measures have been enacted through legislation or promulgation of regulations (see Section 5.21.2) that would assist with the reduction of GHG emissions associated with the proposed Project, both directly and indirectly. Some measures were promulgated prior to or independently of AB 32, and others were identified in CARB's 2008 Climate Change Scoping Plan and promulgated subsequent to approval of the Scoping Plan. These measures were evaluated and re-emphasized in the First Update to the Scoping Plan. Project elements have been incorporated to further reduce GHG emissions associated with operation. A discussion of the regulatory measures and Project elements to reduce Project-generated GHG emissions follows under each emissions source.

Area Sources

The area source GHG emissions included in this analysis result primarily from natural gas fireplaces with additional emissions from landscaping-related fuel combustion sources, such as lawn mowers. GHG emissions due to natural gas combustion in buildings other than from fireplaces are excluded from area sources since they are included in the emissions associated with building energy use. Emissions were calculated with CalEEMod. The input for fireplace emissions is specified in PDF 11-2 in Section 5.11, Air Resources, which limits fireplaces to a maximum of 13,954 natural gas fireplaces and no wood-burning fireplaces. Landscape maintenance emissions are based on Project land use data. The Project's area source GHG emissions are estimated at 11,297 $MTCO_2e$ per year, as shown in Table 5.21-5. Further below in Table 5.21-10, all summary of all Project-related greenhouse gas emissions are presented.

TABLE 5.21-5
AREA SOURCE GREENHOUSE GAS EMISSIONS

Source	Emissions ($MTCO_2e$/yr)
Fireplaces (Hearth)	11,056
Landscape maintenance	240
Total	**11,297**

$MTCO_2e$/yr: Metric tons of carbon dioxide equivalent per year
Total does not add due to rounding
Emissions calculations can be found in Appendix 5.11-A.

Regulatory Requirements

SCAQMD Rule 445. SCAQMD Rule 445 requires the use of natural gas to power all cooking stoves and fireplaces.

As the Project must comply with this applicable regulation imposed by law, the Project would contribute to the achievement for AB 32's goals related to area sources.

Energy Use

GHGs are emitted from buildings as a result of activities for which electricity and natural gas are typically used as energy sources. Combustion of any type of fuel emits CO_2 and other GHGs directly into the atmosphere; these emissions are considered direct emissions associated with a building. GHGs are also emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions. The CalEEMod default natural gas use and emissions calculations are modified by application of the 2016 State Energy Efficiency Standards for Residential and Nonresidential Buildings, PDF 21-1 and PDF 21-2. PDF 21-1, and PDF 21-2 commit the Project to comply with CALGreen voluntary Tier 1 measures to exceed the 2016 code for residential and nonresidential buildings, respectively. The combined effect is a 32.4 percent reduction from the CalEEMod base data for Title 24 natural gas and electricity uses. The SCE GHG intensity factor for 2030 was used based on the SB 350 requirement for 50 percent renewable power by 2030. The carbon intensity factor was not extrapolated to 2035. Therefore, if SCE power content is greater than 50 percent in 2035, the Project's GHG emissions would be less than calculated. The Project's estimated 2035 GHG emissions from the direct burning of natural gas and the indirect generation of electricity are 49,412 $MTCO_2e$ per year as shown in Table 5.21-6. Further below, in Table 5.21-9, a summary of all Project-related greenhouse gas emissions is presented.

TABLE 5.21-6
ENERGY USE AND GREENHOUSE GAS EMISSIONS

Land Use*	Energy Use		GHG Emissions ($MTCO_2e$/yr)		
	Electricity (MWh/yr)	Natural Gas (MBTU/yr)	from Electricity Use	from Natural Gas Use	Total
Elementary School	1,834	4,958	312	266	578
General Light Industry	1,007	2,620	171	141	312
Government (Civic Center)	9,219	11,280	1,566	606	2,172
Health Club	689	1,792	117	96	213
High School	1,273	3,442	216	185	401
Office Park	46,430	49,430	7,888	2,654	10,542
Regional Shopping Center	6,465	1,318	1,098	71	1,169
Single-Family Housing	59,030	340,900	10,028	18,300	28,328
Apartments Mid Rise	11,060	71,130	1,879	3,818	5,697
Total	**137,007**	**486,870**	**23,275**	**26,137**	**49,412**

$MTCO_2e$/yr: Metric tons of carbon dioxide equivalent per year; MWh/yr: megawatt hours per year; MBTU/yr: million British thermal units per year

* Land use categories shown are CalEEMod standard names. "Health Club" is Project "Recreation/Entertainment"

Some totals do not add due to rounding.

Emissions calculations can be found in Appendix 5.11-A.

Regulatory Requirements

Title 24 Energy Efficiency Standards. Title 24 (Part 11) serves to enhance and regulate California's building standards. Single-family homes built to the 2016 standards will use about 22 percent less energy for lighting, heating, cooling, ventilation and water heating compared to those built pursuant to the standards adopted in 2013. According to the ZNE Plan, the 2019 update to Title 24 (effective 2020) will require all new residential construction to be zero net energy (CEC 2015c).

SB X1 2 and SB 350. SB X1 2 established a use target of 33 percent for renewable energy sources for all electricity providers in California by 2020. SB 350 provides for further development of renewable energy with a target of a 50 percent generation rate by 2030. Conservatively, the estimates below do not include the higher renewable energy target established by SB 350. However, as disclosed previously, a Project design feature requires Project buildings to be 35 percent more energy efficient than 2008 standards, that 60 percent of the commercial building roofs have solar panels and that residences have energy friendly radiant roofs that are "Solar Ready". As the Project will comply with or exceed the applicable regulatory measures, the Project is consistent with the energy related regulatory programs designed to achieve AB 32's goals.

Countywide Energy and Environmental Policy. The Countywide Energy and Environmental Policy (Policy) was adopted by the Los Angeles County Board of Supervisors

on January 16, 2007, to provide guidelines for the development and enhancement of energy conservation and environmental programs within County departments. The Policy was also the County's response for the need for energy conservation and reduction in GHG emissions. It directs the County to track its GHG emissions with the California Climate Action Registry, and to reduce its facilities' energy consumption by 20 percent by the year 2015. Under this policy, the Los Angeles County Energy Program (LACEP) provides financing for energy efficiency or solar improvements. Revisions to the Policy, adopted on June 30, 2015, enhance the County's existing and future policies programs, and reporting with regard to environmental sustainability.

Los Angeles Green Building Standards Code. Title 31 of the Los Angeles County Code of Ordinances was adopted in 2013 in response to the mandates set forth in the CALGreen Code. The purpose of Title 31 is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact, or positive environmental impact, and encouraging sustainable construction practices in planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental air quality. Title 31 includes such measures as requirements for energy efficiency, parking for fuel-efficient vehicles, cool roofs, reduction of indoor potable water use, recycled content of construction materials, reduction in construction and demolition waste, and thermal insulation. Title 31 was updated in April 2016 to relocate drought tolerant landscaping and green building requirements from Titles 21 and 22 to Title 31 (DRP 2016a).

Antelope Valley Area Plan (AVAP). AVAP Policy COS 17.2 requires that new buildings be sited and designed in a manner that maximizes efficient use of natural resources, such as air and light, to reduce energy consumption, heat profiles, and GHG emissions. Policy COS 17.4 promotes the use of individual renewable energy systems, by directing the County to require appropriate development standards for individual renewable energy systems to minimize potential impacts and to simplify the permitting process for such systems that meet these development standards. Policy 17.5 calls for the County to protect active and passive solar design elements and systems from shading by neighboring structures and trees through appropriate development standards.

Project Design Features

PDF 21-1. The Green Development Program requires compliance with CALGreen voluntary measure A4.203.1.2.1 for low-rise residential buildings. Therefore, the energy efficiency of these buildings would exceed 2016 Title 24 requirements by 15 percent. PDF 21-1 is required for implementation through MM 21-2.

PDF 21-2. The Green Development Program requires compliance with CALGreen voluntary measure A5.203.1.2.1 for nonresidential buildings. Therefore, the energy efficiency of nonresidential, hotel, and high-rise residential buildings would exceed 2016 Title 24 requirements by 10 percent. PDF 21-2 is required for implementation through MM 21-3.

PDF 21-3. The Green Development Program requires a minimum of 50 percent of the Project's anticipated electrical energy demand at buildout must be satisfied from on-site renewable energy generation. "Anticipated electrical energy demand" shall be determined

on the basis of the anticipated loads for each building as shown in the reports submitted at the time of building permit application pursuant to the Building Energy Efficiency Standards of Title 24. "On-site renewable energy generation" includes, but is not limited to, solar, wind, geothermal, biofuel and hydroelectric systems. PDF 21-3 is required for implementation through MM 21-1.

PDF 21-4. The Green Development Program requires that a minimum of 70 percent of public and community pools and spas would be equipped with active solar heating systems where heating is necessary or desired. The applicant for a pool permit shall provide the proposed plan for compliance with this provision prior to obtaining a permit for the pool. PDF 21-4 is required for implementation through MM 21-5.

PDF 21-5. The Green Development Program requires that deeds, CC&Rs, or similar legal documents contain the following requirement: The owners of all single-family and multi-family residential units shall be required, upon resale, to present to the buyer a written energy audit checklist prepared by a qualified third party at the time the seller provides the buyer with the Real Estate Transfer Disclosure Statement required by Section 1102 et seq. of the California Civil Code The energy audit checklist shall certify that all HVAC systems, thermostats, appliances, windows and swimming pools (if applicable) are the same as those originally installed or, if changed, otherwise comply with Centennial's Green Development Program. All residential pool covers shall be removable, and shall not be automatic retractable covers.

The CC&Rs of the master homeowners association or other applicable association shall require compliance with the provisions of this measure and shall provide notice to individual owners of the resale energy audit checklist requirement. The master homeowners association or other applicable association shall monitor compliance and provide the County with an annual report of compliance with this measure. PDF 21-5 is required for implementation through MM 21-6.

PDF 21-6. The Green Development Program requires that deeds, CC&Rs, or similar legal documents contain the following requirement: For nonresidential buildings, within 90 days after the end of the first full calendar year following the issuance of the certificate of occupancy and within 90 days after each 5-year period thereafter, the owner or tenant in possession thereof shall submit to the master commercial owners association or other applicable association a report prepared by the owner or a qualified, independent third party that evaluates whether all major building systems such as heat furnace, air conditioner, and other mechanical fixtures are working within the design standards established for each system. The master commercial owners association or other applicable association shall monitor compliance and provide the County with an annual report of compliance with this measure. PDF 21-6 is required for implementation through MM 21-7.

PDF 21-7. The Green Development Program requires builders to install energy efficient major appliances and HVAC systems which meet the more stringent of applicable CEC requirements or ENERGY STAR requirements. Major appliances subject to this requirement include dishwashers, clothes washers, refrigerators, and room air conditioners. PDF 21-7 is required for implementation through MM 21-8.

PDF 21-8. The Green Development Program requires that the Project's wastewater reclamation facilities (WRF) will include equipment to capture and reuse biogas for energy production. PDF 21-8 is required for implementation through MM 21-9.

As the Project will incorporate these project design features and must comply with these applicable regulations imposed by law, the Project would contribute to the achievement for AB 32's goals related to energy use.

Water Supply, Treatment, and Distribution

Indirect GHG emissions result from the production of electricity used to convey, treat and distribute water and wastewater. The amount of electricity required to convey, treat and distribute water depends on the volume of water as well as the sources of the water. Additional emissions from wastewater treatment include CH_4 and N_2O, which are emitted directly from the wastewater. Estimated indoor and outdoor water use quantities and source are shown in Table 5.21-7 and are summarized from the data provided in Section 5.18, Water Resources. GHG emissions were calculated in CalEEMod using energy data from the CAPCOA publication, *Quantifying Greenhouse Gas Mitigation Measures* (CAPCOA 2010). As shown in Table 5.21-7 GHG emissions from water use at buildout are estimated at 7,387 $MTCO_2e$ per year. A summary of all Project-related greenhouse gas emissions is presented in Table 5.21-10 later in this section.

TABLE 5.21-7
WATER USE AND GREENHOUSE GAS EMISSIONS

Water Use/Source	Water Use (afy)		GHG Emissions ($MTCO_2e$/yr)
	Indoor	Outdoor	
Indoor/Imported	5,436		6,329
Outdoor/Imported		1,518	434
Outdoor/Water bank		4,578	624
Total	**5,436**	**6,096**	**7,387**

afy: acre-feet per year; GHG: greenhouse gas; $MTCO_2e$/yr: Metric tons of carbon dioxide equivalent per year.

Regulatory Requirements

California Water Code. Sections 10910 through 10915 of the *California Water Code* require preparation of a project-specific Water Supply Assessment for developments like the Project. Sections 10610.4, 10617, and 10620 of the *California Water Code* require urban water suppliers to develop water management plans to actively pursue the efficient use of available supplies.

SB X7-7 (Water Conservation Act of 2009). The Water Conservation Act of 2009 sets an overall goal of reducing per-capita urban water use by 20 percent by December 31, 2020. The State is required to make incremental progress toward this goal by reducing per-capita water use by at least 10 percent by December 31, 2015. This in an implementing measure of the Water Sector of the AB 32 Scoping Plan. Reduction in water consumption reduces the

energy necessary and the associated emissions to convey, treat, and distribute the water; it also reduces emissions from wastewater treatment.

State Model Water Efficient Landscape Ordinance (MWELO) and Executive Order B-29-15. The MWELO (CCR Title 23, Division 2, Chapter 2.7) establishes an outdoor water budget for new landscaped areas that are 500 square feet or larger, and rehabilitated landscaped areas that are 2,500 square feet or larger (DWR 2015). EO B-29-15 called for revisions to the MWELO in order to increase water efficiency standards for new and rehabilitated landscapes through more efficient irrigation systems, greywater usage, on-site storm water capture, and by limiting the portion of landscapes that can be covered in turf. It also established a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013 (California 2015b). The California Department of Water Resources updated the MWELO in December 2015 to incorporate these elements.

Title 24 Green Building Standards Code As Adopted by the Building Standards Commission. The Building Standards Commission, which regulates construction of public schools and community colleges in California, approved a modified version of the MWELO that applies to public schools and community colleges within the Project site.

Title 24 Green Building Standards Code. The California Green Building Code includes water efficiency requirements for new residential and nonresidential structures, including the requirement that indoor potable water use be reduced by 12 percent through the use of water saving fixtures and or flow restrictors.

Los Angeles Green Building Standards Code. Title 31 of the Los Angeles County Code of Ordinances was adopted in 2013 in response to the mandates set forth in the CALGreen Code. The purpose of Title 31 is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact, or positive environmental impact, and encouraging sustainable construction practices in planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental air quality. Title 31 includes specific measures concerning drought-tolerant landscaping that require: (1) turf area shall be water-efficient and shall not exceed 25 percent of the total landscaped area; (2) non-invasive drought-tolerant plant and tree species appropriate for the climate zone region shall be utilized in at least 75 percent of the total landscaped area; and (3) hydrozoning irrigation techniques shall be incorporated into the landscape design.

Antelope Valley Area Plan (AVAP). AVAP Policy COS 2.1 requires new landscaping to comply with applicable water efficiency requirements in the County Code (including the measures discussed above). Policy COS 2.2 requires low flow plumbing fixtures in all new developments.

Project Design Features

PDF 21-17. The Green Development Program requires each applicant for an applicable construction permit for a nonresidential or multi-family building to install recycled water infrastructure to serve common areas for these facilities, except where prohibited by law. To the extent recycled water is produced within the Project and available, recycled water shall

be used for landscape irrigation within those common areas. Compliance with these measures shall be established prior to the issuance of a building permit for nonresidential and multi-family facilities and at the time of County approval of final landscaping plans submitted by the applicant after final map recordation for homeowners association common areas. Covenants, conditions, and restrictions shall require the owners of such common areas to maintain, repair and replace irrigation systems and plantings in accordance with County approved plans. PDF 21-17 is required for implementation through MM 21-10.

PDF 21-18. The Green Development Program requires each applicant for an applicable construction permit for a nonresidential building to install indoor plumbing fixtures and fixture fittings that would reduce the overall use of potable water within the building by 12 percent, consistent with 2016 CALGreen Tier 1 nonresidential voluntary measures as prescribed in Section A5.303.2.3.1 of the code. PDF 21-18 is required for implementation through MM 21-11.

PDF 21-19. The Green Development Program requires each applicant for an applicable construction permit for a single or multi-family residential building to install kitchen faucets and appliances that comply with 2016 CALGreen code residential voluntary measures specified in Sections A4.303.1 and A4.303.3 of the code. PDF 21-19 is required for implementation through MM 21-12.

PDF 21-20. The Green Development Program requires that landscaped areas of single-family detached residential front yards and multi-family residential common areas contain no more than 25 percent turf. PDF 21-20 is required for implementation through MM 21-13.

As the Project will incorporate these project design features and must comply with these applicable regulations imposed by law, the Project would contribute to the achievement for AB 32's goals related to water supply, treatment, and distribution.

Solid Waste

Solid waste may be disposed in landfills or diverted for recycling, composting, reuse, or other means to avoid landfilling. Any waste not diverted will be disposed of at a landfill. GHG emissions from landfills are associated with the anaerobic breakdown of material. Solid waste GHG emissions were calculated using Project land use data and CalEEMod default emission factors. As shown in Table 5.21-8, solid waste GHG emissions are estimated at 10,214 $MTCO_2e$ per year. Further below in Table 5.21-10, a summary of all Project-related greenhouse gas emissions is presented.

TABLE 5.21-8
SOLID WASTE GENERATION AND
GREENHOUSE GAS EMISSIONS

Land Use	Solid Waste (tons/yr)	GHG Emissions ($MTCO_2e$/yr)
City Park	9	5
Elementary School	730	367
General Light Industry	118	60
Government (Civic Center)	4,469	2,248
Health Club	372	187
High School	319	161
Office Park	3,424	1,722
Regional Shopping Center	543	273
Single-Family Housing	9,087	4,570
Apartments Mid Rise	1,237	622
Total	20,308	10,214

$MTCO_2e$/yr: Metric tons of carbon dioxide equivalent per year
Totals may not add due to rounding.
Emissions calculations can be found in Appendix 5.11-A.

Regulatory Requirements

AB 341. AB 341 established a statewide diversion rate for solid waste of not less than 75 percent through measures such as source reduction, recycling, or composting by the year 2020, and annually thereafter. That legislation increased the solid waste diversion rate by 25 percent compared to the California Integrated Waste Management Act of 1989 that it replaced.

Los Angeles County Roadmap for a Sustainable Waste Management Future. As discussed above, the County's Roadmap for a Sustainable Waste Management Future sets to achieve 80 percent diversion from landfills by 2025; 90 percent diversion from landfills by 2035; and 95 percent (or higher) diversion from landfills by 2045. To accomplish these goals, the Working Group identified specific recommended initiatives, which will be expanded in detailed implementation plans. Although the Roadmap does not contain currently enforceable regulations, development under the Centennial Specific Plan will comply with any implementation plans once adopted.

Project Design Features

PDF 17-3. PDF 17-3 of Section 5.17, Other Services, states that the Project includes a Solid Waste Management Plan to achieve the goal of diverting 75% of operational solid waste from the Project requiring landfill disposal. Property Owners shall process on-site, contract with a waste management company and/or recyclers, and/or self-haul to waste and recycling facilities to properly recycle, divert, and dispose of solid wastes generated on-site, such as metals, paper, household plastics, glass, cardboard, food waste, and green waste. The waste

hauler shall be required by contract to maintain records showing the diversion from landfills of not less than 75 percent of the operational waste generated by the Project. PDF 17-3 is required for implementation through MM 17-10.

As the Project will incorporate this project design feature and must comply with this applicable regulation imposed by law, the Project would contribute to the achievement for AB 32's goals related to solid waste.

Mobile Sources

The GHG emissions associated with on-road mobile sources are generated from residents, workers, customers, and delivery vehicles visiting the land use types in the Project. The emissions associated with on-road mobile sources includes running and starting exhaust emissions, evaporative emissions, brake and tire wear, and fugitive dust from paved and unpaved roads. Mobile source emissions were calculated in CalEEMod. Trip generation rates were adjusted to be consistent with the trip generation data provided in the Project traffic impact analysis (TIA) (Stantec 2016). Average trip distance inputs were adjusted based on VMT data in the Project TIA. VMT and GHG emissions results are shown in Table 5.21-9. GHG emissions based on 2035 on-road emissions factors are calculated to be 160,904 $MTCO_2e$ per year. Further below in Table 5.21-10, a summary of all Project-related greenhouse gas emissions is presented.

TABLE 5.21-9
MOBILE SOURCE VEHICLE MILES TRAVELED AND GREENHOUSE GAS EMISSIONS

Land Use	Vehicle Miles Traveled (VMT/yr)	GHG Emissions ($MTCO_2e$/yr)*
City Park	750,300	194
Elementary School	15,864,160	4,098
General Light Industry	4,087,962	1,056
Government (Civic Center)	45,359,777	11,718
Health Club	7,694,986	1,988
High School	8,950,942	2,312
Office Park	128,855,027	33,287
Regional Shopping Center	79,419,401	20,516
Single-Family Housing	249,898,307	64,556
Apartments Mid Rise	81,986,191	21,179
Total	622,867,052	160,904

VMT/yr: vehicle miles traveled per year; $MTCO_2e$/yr: Metric tons of carbon dioxide equivalent per year

* CalEEMod does not output mobile source GHG emissions by land use; emissions apportioned based on VMT.

Total may not add due to rounding.

Emissions calculations can be found in Appendix 5.11-A.

Regulatory Requirements

Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards. The USEPA and the NHTSA have been working together on developing a National Program of regulations to reduce GHG emissions and to improve the fuel economy of light-duty vehicles. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking establishing standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. The rules require these vehicles to meet an estimated combined average emissions level of 295 grams of CO_2 per mile by 2012, decreasing to 250 grams per mile by 2016, and finally to an average industry fleet-wide level of 163 grams per mile in model year 2025. The 2016 standard is equivalent to 35.5 miles per gallon (mpg) and the 2025 standard is equivalent to 54.5 mpg if the levels were achieved solely through improvements in fuel efficiency. These standards would cut GHG emissions by an estimated 2 billion metric tons and 4 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2017–2025).

AB 1493 (Pavley Standard). The Pavley Standard requires CARB to adopt regulations by January 1, 2005, to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks of model year 2009 and thereafter. The CalEEMod model includes emission reductions for non-commercial passenger vehicles and light-duty trucks of model year 2017–2025.

Executive Order S-01-07 and CARB's Low Carbon Fuel Standard (LCFS). Executive Order S-01-07 (January 18, 2007) requires a ten percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB. The LCFS regulation went into effect on April 15, 2010, and requires a reduction in the carbon intensity of transportation fuels used in California by at least ten percent by 2020. It imposes fuel requirements on fuel that will be sold in California that will decrease GHG emissions by reducing the full fuel-cycle and the carbon intensity of the transportation fuel pool in California.

Advanced Clean Cars Program. The Advanced Clean Cars program, introduced in 2012, combines the control of smog, soot causing pollutants and greenhouse gas emissions into a single coordinated package of requirements for model years 2017 through 2025.

Cap-and-Trade Regulation. Emissions associated with transportation (largely in the form of consumption of transportation fuels) are the largest portions of Project GHG emissions. Transportation fuels are subject to the cap-and-trade regulation discussed previously in this section. The regulation requires that emissions generated by the combustion of fuels be reduced over time. Although not accounted for under the CalEEMod estimates of the Project's GHG emissions, the cap-and-trade regulations relating to fuels will reduce the Project GHG emissions beyond the estimates included in this section.

Antelope Valley Area Plan (AVAP). Under AVAP Policy M 2.3, the County must require trip reduction measures to relieve congestion and reduce air pollution form vehicle emissions when evaluating new development proposals.

Project Design Features

PDF 21-9. The Green Development Program requires that the Project establish a Transportation Management Association (TMA) that develops strategic linkages with other Antelope Valley/Santa Clarita Valley TMAs or like organizations in order to maximize transit efficiencies and services. The TMA's purpose is to coordinate and facilitate transit and rideshare usage to serve as many riders as possible; to promote multi-modal transportation services and options; and to reduce resident and employee use of single-occupancy automobiles for off-site commuting, and for internal travel within the Specific Plan. PDF 21-9 is required for implementation through MM 10-1, detailed in Section 5.10, Traffic, Access, and Circulation. Elements of MM 10-1 that would reduce fossil fuel VMT and thereby reduce GHG emissions include, but are not limited to:

- Providing residents and employees with multiple modes of accessibility for internal and external trips by future residents and visitors;
- Providing residents and employees on the Project site with multiple modes of transportation;
- Allowing for 60 percent of residential units to be located within one-half mile of a Village center that includes retail uses;
- Providing parks within a 5-minute walk of all residences;
- Locating 90 percent of residents within a 10-minute bike ride of retail;
- Locating 70 percent of residents within a 15-minute bike ride of employment center;
- Locating 85 percent of residents within walking or biking distance of a school;
- Requiring TMA implementation of combination of transit and transportation measures to reduce on-site single-occupancy automobile use by 30 percent in relation to standard ITE-generation rates for the overall Project;
- Requiring TMA implementation of a combination of measures to reduce off-site peak hour commutes to and from the Project site in single-occupancy automobiles by 20 percent; and
- Incorporating Transportation Demand Management (TDM) features to reduce dependence on the automobile, provide for a more efficient use of transportation resources among Project occupants, and thereby reduce pollutant emissions. The key TDM elements that are inherent in the overall Mobility Plan are
    - Sidewalks, greenway trails, and community trails that link residential, schools, shopping, and employment areas;
    - Creation and ongoing operation of a Transportation Management Association (TMA) to fund and manage the operation of ongoing transportation programs, including but not limited to transit and on-demand services.
    - Small- to medium-sized streets and blocks that allow for shorter walking distances to retail, parks, schools, and other destinations;
    - Pedestrian environments incorporated with public streets;
    - Parking behind buildings to encourage walking in retail areas along street

frontage; and

- Parks within 0.25 mile of all residences.

PDF 21-10. The Centennial Affordable Housing Implementation Plan (see Appendix 3-H of the Centennial Specific Plan, which is in Appendix 4.0-A of the EIR) will be adopted in conjunction with the Specific Plan and will include dedication of a minimum of ten percent of all homes in Centennial communities that permit housing, with the exception of the lowest density area (Community 8-2) to be affordable housing units. A range of employment opportunities will be created within the community; therefore, a range of housing needs will be provided to reduce the number of vehicle trips (particularly long trips outside the Project). CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* identifies affordable housing as a quantifiable measure for reducing GHG emissions as it allows lower income families to live closer to jobs centers (CAPCOA 2010). PDF 21-10 is required for implementation through MM 21-14.

PDF 21-11. The *Centennial Specific Plan's* Green Development Program requires the installation of one 208/240 VAC receptacle that may be used for charging electric vehicles in each detached and attached single-family residence. The installation shall comply with requirements of Section 4.106.4.1 of the 2016 CALGreen Code. PDF 21-11 is required for implementation through MM 21-15.

PDF 21-12. The *Centennial Specific Plan's* Green Development Program requires each applicant for an applicable construction permit for a Business Park or Institutional land use to install "alternative energy fueling stations" as listed below. An "alternative energy vehicle fueling station" is a 208/240 VAC electrical vehicle charging station or a station providing another new or improved technology (e.g. CNG) and hydrogen fuel cell) that provides refueling for vehicles that do not use fossil fuel.

- Business Park and Institutional land use designations shall provide a minimum of one alternative energy vehicle fueling station on site for the first 50,000 square feet of usable floor space and additional alternative energy vehicle fueling stations for each additional 50,000 square feet of usable floor space thereafter.

- Multi-family residential buildings of at least 20 residential units shall provide a minimum of one alternative energy vehicle fueling station for the first twenty (20) residential units and an additional alternative energy vehicle fueling station for each additional twenty (20) residential units thereafter.

- The Town Center and each Village Center shall provide a minimum of one alternative energy vehicle charging station.

- Designated Transit Hubs shall provide a minimum of one alternative energy vehicle charging station.

PDF 21-12 is required for implementation through MM 21-16.

PDF 21-13. The Green Development Program requires that prior to the issuance of each nonresidential construction permit, the Project Applicant/Developer shall provide plans and specifications to the County demonstrating that the following features have been incorporated into the building designs for non-residential buildings:

- Bicycle parking spaces at a rate of 5 percent of minimum required vehicle parking spaces for non-residential land uses.
- Preferential parking for low-emitting, fuel-efficient, and carpool/van vehicles shall be provided as specified in Section A5.106.5.1, Nonresidential Voluntary Measures, of the CALGreen Code.

PDF 21-13 is required for implementation through MM 21-17.

PDF 21-14. The Green Development Program requires that prior to the issuance of an applicable construction permit for each multi-family residential building permit, the Project Applicant/Developer shall provide plans and specifications to the County demonstrating that the following features have been incorporated into the building designs or specifications:

- Visitor parking shall include preferentially located parking spaces for alternative-fueled vehicles.
- Bicycle parking shall be provided as specified in Section A4.106.9, Residential Voluntary Measures, of the CALGreen Code or as required by Section 22.52.1225B of the County Code, whichever is more stringent.

PDF 21-14 is required for implementation through MM 21-18.

PDF 21-15. The Green Development Program requires that, prior to issuance of an applicable construction permit for parking structures and parking lots with 20 or more parking spaces, the Project Applicant/Developer shall provide plans and specifications to the County demonstrating that the following features have been incorporated into the parking facility:

- The parking facility shall include a minimum of five percent preferentially located parking spaces for alternative-fueled (electric, natural gas, or similar low-emitting technology) vehicles.
- The parking facility shall include at least one electric vehicle charging station. Electrical lines shall be designed and sized to add additional charging stations for up to three percent of the total parking spaces when a demand is demonstrated. The design and installation shall be consistent with Section A4.106.8.2, Residential Voluntary Measures, of the CALGreen Code.
- For residential parking facilities, bicycle parking shall be provided as specified in Section A4.106.9, Residential Voluntary Measures, of the CALGreen code or as required by Section 22.52.1225B of the County Code, whichever is more stringent.

PDF 21-15 is required for implementation through MM 21-19.

PDF 21-16. The Green Development Program requires that the Project Applicant/Developer provide:

- Internet infrastructure and high-speed broadband access to facilitate telecommuting, and
- A community intranet (or similar) with access for homeowners associations; interest groups; local event scheduling; schools, library, carpool and transit services; and other on-site entertainment and amenities reduce the need for people to use automobile travel to obtain the information that is provided.

Compliance shall be required prior to the issuance of building permit for the 1,000th residential unit. PDF 21-16 is required for implementation through MM 10-2 in Section 5.10, Traffic, Access, and Circulation.

As the Project will incorporate these project design features and must comply with these applicable regulations imposed by law, the Project would contribute to the achievement for AB 32's goals related to mobile source emissions.

Estimated Project operational GHG emissions are shown in Table 5.21-10. Table 5.21-10 also shows the combined operational, construction, and vegetation change GHG emissions.

As previously described in Section 5.21.5, under Threshold 21-1, this impact analysis evaluates consistency with applicable regulatory programs designed to reduce GHG emissions and that contribute to achievement of AB 32's goals as the primary significance criteria, a method of analysis that is consistent with pathways to compliance described in the *Newhall* decision. The quantitative emissions data in Tables 5.21-4 through 5.21-10 are provided for information purposes. Also for information purposes, Table 5.21-10 compares the emissions with the AVAQMD project-level CEQA significance threshold and the SCAQMD project-level recommended GHG efficiency threshold, both discussed in more detail below.

TABLE 5.21-10
OPERATIONAL AND TOTAL GHG EMISSIONS

GHG Sources	Emissions $MTCO_2e$	Percent of Operational Emissions
Operational	239,215	
Area	11,297	5%
Energy	49,414	21%
Mobile	160,904	67%
Solid waste	10,214	4%
Water	7,387	3%
Construction	4,490	
Vegetation loss	922	
New trees	-249	
Total	**244,379**	
AVAQMD Project-Level CEQA significance threshold	***100,000***	
Exceeds threshold?	Yes	
Service population (SP)	80,825	
GHG Efficiency	**3.02**	
SCAQMD Plan-Level staff- proposed "plan-level" GHG efficiency threshold ($MTCO_2e$/SP/Year)	***4.1***	
Exceeds threshold?	No	
SCAQMD Plan-Level staff- proposed "project-level" recommended GHG efficiency threshold ($MTCO_2e$/SP/Year)	***3.0***	
Exceeds threshold?	Yes	

GHG: greenhouse gas; MTCO2e: metric tons of carbon dioxide equivalent; AVAQMD: Antelope Valley Air Quality Management District; SCAQMD: South Coast Air Quality Management District.

Emissions calculations can be found in Appendix 5.11-A.

AVAQMD Thresholds

The AVAQMD's *CEQA and Federal Conformity Guidelines* (2011) establishes significance thresholds to assess the regional impact of project-related air pollutant emissions in the AVAQMD. The AVAQMD threshold for GHG emissions is 100,000 $MTCO_2e$ per year. A project with emission rates below this threshold is considered to have a less than significant effect on regional air quality throughout the AVAQMD portion of the MDAB.

For informational purposes, the Project's estimated combined operational, construction, and vegetation change GHG emissions are 244,379 $MTCO_2e$, thus exceeding AVAQMD's 100,000 $MTCO_2e$ threshold.

SCAQMD Thresholds

In April 2008, SCAQMD convened a Working Group to develop GHG significance thresholds. On December 5, 2008, the SCAQMD Governing Board (Board) adopted its staff proposal for an interim CEQA GHG significance threshold for projects where the SCAQMD is the lead agency. As to all other projects, where the SCAQMD is not the lead agency, the Board has, to date, only adopted an interim threshold of 10,000 $MTCO_2e$ per year for industrial stationary source projects (SCAQMD 2008).

For all other projects, SCAQMD staff proposed a multiple tier analysis to determine the appropriate threshold to be used. The draft proposal suggests the following tiers: Tier 1 is any applicable CEQA exemptions; Tier 2 is consistency with a GHG reduction plan; Tier 3 is a screening value or bright line; Tier 4 is a performance based standard; and Tier 5 is GHG mitigation offsets (SCAQMD 2008). According to the presentation given at the September 28, 2010 Working Group meeting, SCAQMD staff proposed a Tier 3 draft threshold of 1,400 to 3,500 $MTCO_2e$/year depending on if the project was commercial, mixed use, or residential (SCAQMD 2010). For the Tier 4 draft threshold SCAQMD staff presented a percent emission reduction target option but did not provide any specific recommendation for a percent emission reduction target; instead it referenced the San Joaquin Valley Air Pollution Control District (SJVAPCD) approach.

The percent reduction target is based on consistency with AB 32 as it was based on the same numeric reductions calculated in the Scoping Plan to reach 1990 levels by 2020. As discussed in Section 5.21.2, Relevant Plans, Policies, and Regulations, the First Update to the AB 32 Scoping Plan states the following (CARB 2014b):

California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32." Specifically, "if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts [MW] of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050.

The second Tier 4 option is to utilize an efficiency target. The targets for 2020 are 4.8 $MTCO_2e$ per year per service population (SP) for project level thresholds where SP is project residents plus employees and 6.6 $MTCO_2e$ per year per SP for a plan level threshold (SCAQMD 2010). The targets for 2035 are 3.0 $MTCO_2e$ per year per SP for project level thresholds and 4.1 $MTCO_2e$ per year per SP for a plan level threshold.

The Working Group has not convened since the fall of 2010. As of the writing of this EIR, the proposal has not been considered or approved for use by the SCAQMD Board.

The Project's estimated combined operational, construction, and vegetation change GHG emissions are 244,379 $MTCO_2e$ and its estimated service population is 57,150 residents and 23,675 employees for a total of 80,825, resulting in annual emissions of 3.02 $MTCO_2e$ per service population. Thus, for informational purposes, the Project's estimated emissions would exceed the 2035 "project-level" efficiency threshold of 3.0 $MTCO_2e$ proposed by

SCAQMD staff, which threshold has not been adopted by the SCAQMD Board. However, Project's estimated emissions would not exceed the 2035 "plan-level" efficiency threshold of 4.1 $MTCO_2e$ proposed by SCAQMD staff.

Threshold 21-2 Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Consistency with the Los Angeles County Community Climate Action Plan

The Los Angeles County CCAP is designed to support the State's overall GHG reduction goals for 2020 under AB 32. The Project's consistency with the CCAP is shown in Table 5.21-11. If the Project is consistent with the CCAP, it would not have significant GHG emissions relative to the CCAP's 2020 planning horizon and the AB 32 reduction target. Since the Project has a phased implementation schedule with full buildout beyond the CCAP's 2020 planning horizon, consistency with the CCAP is only one *Newhall* compliance pathway used in this Section 5.21.6 to evaluate the significance of the Project's GHG emissions. However, the Project's consistency with the CCAP is important for determining the significance of GHG emissions for the current CCAP planning horizon.

As demonstrated in detail in Section 5.8, Land Use, Entitlements, and Planning, the Project would be consistent with the goals and policies of the AVAP, would implement the AVAP and would not conflict with it. Since the CCAP relies on the AVAP to inform its socioeconomic assumptions, and since the Project is consistent with the AVAP, it follows that the Project is also consistent with the socioeconomic assumptions contained in the County's CCAP.

The CCAP builds on existing County programs, and adds new actions, as shown in Table 5.21-11. Mandatory new actions are identified in ***bold and italic*** text, but this consistency analysis includes both mandatory and voluntary new actions. Centennial Implementation Actions, as shown in the Table 5.21-11 below, include a brief summary listing of Project Design Features (PDFs) and Mitigation Measures (MMs) presented in applicable topical sections 5.1 through 5.21 of this Draft EIR. The CCAP is a countywide program, and this analysis evaluates elements of the CCAP that are relevant to the Centennial Project.

TABLE 5.21-11
CENTENNIAL PROJECT COMPLIANCE WITH THE LOS ANGELES COUNTY COMMUNITY CLIMATE ACTION PLAN

Existing Initiatives and New CCAP Actions	Centennial Implementation Actions
CATEGORY 1: GREEN BUILDING AND ENERGY	
Existing County Initiatives	
Energy Upgrades to Existing Structures provides rebates and incentives for energy retrofit efficiency projects.	Because Centennial will be a new community, energy efficiency is required for buildings, infrastructure (e.g., outdoor irrigation), and appliances. The Project does not include any existing structures, and thus this CCAP action is not applicable.
Los Angeles County Code (Title 31) requires implementation of sustainable policies for new building design.	Title 31 applies to the Project, and is implemented through a variety of measures including, for example (1) landscape design restrictions related to minimizing turf grass and the use of non-invasive and drought tolerant plants and tree species; (2) recycling and/or salvaging a minimum of 75% of the non-hazardous construction and demolition debris; and (3) compliance with a water budget for landscape irrigation use conforms to the California Department of Water Resources Model Water Efficient Landscape Ordinance.
Commercial Building Performance Partnership provides financial mechanisms for energy conservation upgrades to existing buildings.	Energy conservation is required for new structures, and no retrofits of existing structures are included in the Project and thus this CCAP action is not applicable.
Renewable Energy and Clean Fuels Program implements projects to accelerate the use of compressed natural gas as an alternative fuel.	Renewable energy produced within the Project will be primarily rooftop solar, and at minimum 50% of the Project's anticipated electricity demand will be satisfied from on-site renewable energy generation. It is anticipated that the dominant alternative transportation fuel will be electricity (e.g., electric and hybrid-electric vehicles); however, compressed natural gas (CNG) will also be made available as a transportation fuel to the extent consistent with then-applicable recommendations and/or requirements from the California Air Resources Board (CARB) and County.
New CCAP Actions	
BE-1: Green Building Development encourages energy reductions in new development through voluntary reductions that exceed the minimum standards set forth in the State's CALGreen Building Code (Title 24).	The Project exceeds the CALGreen Building Code minimum requirements in several ways, including: 1. Compliance with CALGreen voluntary measure A4.203.1.2.1 for low-rise residential buildings, resulting in buildings that would exceed 2016 Title 24 requirements by 15% (PDF 21-1). 2. Compliance with CALGreen voluntary measure A5.203.1.2.1 for nonresidential buildings and residential buildings taller than 4 stories,

TABLE 5.21-11
CENTENNIAL PROJECT COMPLIANCE WITH THE LOS ANGELES COUNTY COMMUNITY CLIMATE ACTION PLAN

Existing Initiatives and New CCAP Actions	Centennial Implementation Actions
	resulting in buildings that would exceed 2016 Title 24 requirements by 10%. 3. Owners of all single-family units and multi-family residential structures are required, upon resale, to present to the buyer a written energy audit checklist at the time the seller provides the buyer with the Real Estate Transfer Disclosure Statement required by Section 1102 et seq. of the *California Civil Code*. The energy audit checklist shall certify that all heating, ventilation, and air conditioning (HVAC) systems, thermostats, appliances, windows, and swimming pools are either the same as originally installed or otherwise comply with the Green Development Program. 4. For nonresidential buildings, within 90 days after the end of the first full calendar year following the issuance of the certificate of occupancy, and within 90 days after each 5-year period thereafter, the owner or tenant in possession thereof shall submit to the master commercial owners association or other applicable association a report prepared by the owner or a qualified, independent third party that evaluates whether all major building systems such as a heat furnace, air conditioner, and other energy-consuming mechanical fixtures are working within the design standards established by the manufacturer of such equipment. 5. Residential appliances offered by builders shall consist exclusively of low-energy and/or low-water consuming appliances that are Energy-Star compliant for each appliance that is rated by Energy Star (e.g., refrigerator, clothes washer, dishwasher, and room air conditioner). These project design features meet and exceed the requirements of Section 22.52.2130 of the County Code (Green Building).
BE-2: Energy Efficiency retrofits will be further encouraged for existing buildings and structures.	The Project does not include any existing buildings, so this measure is not applicable.
BE-3: Solar Installations are encouraged for new and existing buildings	Renewable energy produced within the Project would be generated at a minimum of 50% of the Project's anticipated electricity demand would be satisfied from on-site renewable energy generation. Specific metrics to achieve this goal include:

TABLE 5.21-11
CENTENNIAL PROJECT COMPLIANCE WITH THE LOS ANGELES COUNTY COMMUNITY CLIMATE ACTION PLAN

Existing Initiatives and New CCAP Actions	Centennial Implementation Actions
	1. A minimum of 100% of all single-family detached residential units at buildout shall have solar energy collection equipment installed on roof areas or on top of other structures on the site (e.g., patio covers or pergolas). 2. Single-family detached residential units with roof areas that are within 30 degrees of true south shall include plumbing appropriate for a solar water heating running from the installed water heater to the solar-ready roof areas, and those with roof areas that are not within 30 degrees of true south shall be plumbed to accommodate an on-demand tankless water heater. 3. A minimum of 10% of all single-family detached residential units at buildout shall either include an installed solar water heater, tankless water heater, or other energy efficient water heater technology approved by the County. 4. A minimum of 30% of all multi-family residential units at buildout shall have solar energy collection equipment, which shall be installed on roof areas facing within 30 degrees of true south. 5. All swimming spools constructed within the Project shall be heated by a solar water heating system or renewable power system that provides electricity for water heating. 6. A minimum of 60% of buildings located within Business Park land use designations at buildout shall have solar panel systems installed on roof areas. Such systems shall be installed on roof areas facing within 30 degrees of true south.
BE-4: Alternative Renewable Energy Programs are designed to encourage the use of non-solar renewable energy technology such as wind, hydropower, and geothermal resources, as feasible.	The Project site does not have hydropower or geothermal resources. Utility-scale wind plants present a potential hazard to sensitive biological resources such as the California Condor, and utility-scale solar plants are not an authorized use on the Project site or vicinity under the Antelope Valley Area Plan.
BE-5: Wastewater Treatment Plant Biogas recovery and reuse	The Project's wastewater reclamation facilities (WRF) will include equipment to capture and reuse biogas for energy production.
BE-6: Energy Efficiency Retrofits of Wastewater Equipment promotes efficient treatment equipment	There is no existing wastewater treatment facility at the Project site, so this measure is not applicable.
BE-7 Landfill Biogas encourages renewable biogas projects at regional landfills.	There is no existing or proposed landfill at the Project site, so this measure is not applicable.

TABLE 5.21-11
CENTENNIAL PROJECT COMPLIANCE WITH THE LOS ANGELES COUNTY COMMUNITY CLIMATE ACTION PLAN

Existing Initiatives and New CCAP Actions	Centennial Implementation Actions
CATEGORY 2: LAND USE AND TRANSPORTATION	
Existing County Initiatives	
Healthy Design Ordinance (Ordinance 2013-001, amending Title 21 (Subdivisions) and Title 22 (Planning and Zoning)) is designed to require projects to have better walking environments (e.g., with wider sidewalks and more shade trees), encourage more bicycling (e.g., by requiring bike parking), improve access to healthy foods (e.g., with weekly farmer's markets and permissible community gardens), and enhance project review requirements to provide an opportunity to review healthy design features such as landscaping, lighting, street furniture and bike parking spots.	The Project design complies with all of the substantive standards of the Healthy Design Ordinance, including but not limited to requirements for right-of-way widths; pedestrian crossings; tree plantings in lot frontages; and bicycle parking facilities. The Project allows community gardens as legally permitted uses in residential and mixed use areas of the Project. The Project Transportation Demand Management (TDM) Program includes bicycle program metrics, discussed below.
Bicycle Master Plan promotes bicycle ridership and bike-friendly designs throughout the County.	The Project includes a safe and aesthetically pleasing dedicated bicycle network and pedestrian system into all development designs, and distribute community uses such as neighborhood parks, elementary schools, and neighborhood-scale retail in key locations throughout the Project to reduce single-occupancy automobile travel for these neighborhood-scale destinations. The Project TDM Program includes bicycle program metrics, discussed below.
Sustainable Transportation Programs to increase the efficiency of the transportation network.	The Project includes the following measures to reduce single-occupancy commuter travel to and from the Project site: 1. Land use planning principles that create a balanced master-planned community that includes: A. Mixed-use neighborhoods where residential, commercial, and other employment-generating uses and institutional/public uses are proximate to each other and connected by a network of trails to reduce reliance on automobile use within the Project site. B. A diverse range of residential product types, including dedication of a minimum of 10% of residential units as affordable housing, to compliment the diverse range of employment opportunities within the Project and help minimize the off-site employment commuter trips. 2. Establishment of a Transportation Management Association (TMA) that develops strategic linkages with other Antelope Valley/Santa Clarita Valley TMAs or like organizations in order to maximize

TABLE 5.21-11
CENTENNIAL PROJECT COMPLIANCE WITH THE LOS ANGELES COUNTY COMMUNITY CLIMATE ACTION PLAN

Existing Initiatives and New CCAP Actions	Centennial Implementation Actions
	transit efficiencies and services. The TMA's purpose is also to coordinate and facilitate transit and rideshare usage to serve as many riders as possible, and to reduce the volume of automobile trips within and from the Project site, as described in more detail in the Project TDM Program below.
New CCAP Actions	
LUT-1: Bicycle Programs and Supporting Facility improvements to expand the County's existing bicycle network.	As a new community, the Project includes a network of multi-purpose trails and community trails, in addition to the greenways and paseos. The Project trail system will connect to the Pacific Crest Trail (PCT), which is designated as a National Scenic Trail that traverses approximately 2,650 miles through 3 states (California, Oregon, and Washington) will be relocated to the west side of 300th Street West, which travels through the Project site. This realignment is not a part of the Project, but is assumed to be the future alignment for evaluation purposes in this EIR. Project requires bicycle parking facilities that meet or exceed the requirements of County Section 22.52.1225B, to encourage and support bicycle use.
LUT-2: Pedestrian Network improvements to expand the County's existing pedestrian network.	As a new community, the Project implements a Complete Streets design approach that includes sidewalks and dedicated bicycle network and pedestrian system incorporated into all development designs and throughout the community to reduce single-occupancy automobile travel for neighborhood-scale destinations.
LUT-3: Transit Expansion to create priority bus lanes and improve the existing efficiency of the transportation network.	As a new community, the Project implements a TDM Program that includes strategic linkages with other Antelope Valley/Santa Clarita Valley TMAs or like organizations in order to maximize transit efficiencies and services. The TMA's purpose is to coordinate and facilitate transit and rideshare usage to serve as many riders as possible.
LUT-4: Travel Demand Management to encourage ride-sharing and employer-sponsored vanpools to reduce peak-period vehicle trips.	The Project TDM Program encourages ride-sharing and employer-sponsored vanpools, as well as other measures to reduce automobile trips within and from the Project site. The TDM will be managed by the TMA.
LUT-5: Car-Sharing Program promotes the shared use of private and employer-owned vehicles.	The Project TDM Program includes formation of strategic partnerships with car sharing services (e.g., Uber or Lyft) and other innovation/technology approaches to increase transportation efficiency, as described in more detail below.

TABLE 5.21-11
CENTENNIAL PROJECT COMPLIANCE WITH THE LOS ANGELES COUNTY COMMUNITY CLIMATE ACTION PLAN

Existing Initiatives and New CCAP Actions	Centennial Implementation Actions
LUT-6: Land Use Design and Density targets land use patterns to support mobility, and improve the diversity of urban and suburban developments	The Project includes a balanced mix of housing, employment, and community uses including schools, retail, and public services, to minimize off-site trips. The Project design also encourages pedestrian and bicycle use, and includes a diverse range of housing types.
LUT-7: Transportation Signal Synchronization Program Improve the network of traffic signals on the major streets throughout Los Angeles (LA) County.	The Project does not include any existing traffic signals, but will use synchronized traffic signals to ensure the efficient use of future Project roadways.
LUT-8: Electric Vehicle Infrastructure. Install EV charging facilities at County-owned public venues and ensure that at least one-third of these charging stations will be available for visitor use.	The Project requires electric vehicle infrastructure, specifically: 1. Builders will be required to install one 240 volt of alternating current (VAC) outlet available for use to charge electric vehicles in the garage or other suitable location for each single-family home. 2. For business park and institutional land uses, a minimum of 1 electric vehicle charging station (consisting of a 208/240 VAC or alternative electric charging technology approved by the County, serving 2 adjacent parking spaces) will be installed for the first 50,000 square feet (sf) of building space, and an additional fueling station will be installed for each subsequent 50,000 sf of building space. 3. For multi-family residential projects that include at least 20 units, a minimum of 1 electric vehicle charging station be installed for the first 20 units and an additional charging station will be installed for each subsequent 20 units. 4. Preferential parking for low-emitting, fuel-efficient, and carpool/van vehicles shall be provided for nonresidential structures larger than 20,000 sf and made available for employees and visitors. 5. For parking facilities and parking lots with more than 20 spaces, the parking facility or lot must include: A. A minimum of 5% preferentially located parking spaces for alternative-fueled vehicles. B. Electrical lines designed and sized to provide electric vehicle charging stations for

TABLE 5.21-11
CENTENNIAL PROJECT COMPLIANCE WITH THE LOS ANGELES COUNTY COMMUNITY CLIMATE ACTION PLAN

Existing Initiatives and New CCAP Actions	Centennial Implementation Actions
	up to 3% of parking space when demand is demonstrated.
LUT-9: Idling Reduction Goal. Encourage idling limits of 3 minutes for heavy-duty construction equipment as feasible within manufacturer's specifications.	The Project includes as a mandatory contract specification for all construction contractors a restriction to limit unnecessary construction equipment idling to 3 minutes, and include methods to encourage equipment operators to achieve the 3-minute goal.
LUT-10: Efficient Goods Movement is designed to improve cargo transport on existing roadways and transportation infrastructure.	The Project includes contributions to California Department of Transportation (Caltrans) to avoid any adverse Project-related impact to goods movement on Interstate (I) 5 and State Route (SR) 138. Contributions are described in mitigation measures in Section 5.10, Traffic, Access and Circulation.
LUT-11: Sustainable Pavements Program is designed to improve the resiliency of, and reduce the GHG emissions associated with, existing paved roadways.	The Project will use durable roadway paving materials that will be determined upon consideration of aggregates, asphalt materials, cementitious materials, recycled materials, and other roadway materials that are commonly used in pavement construction in order to assess from a life-cycle perspective the role they play in contributing to the sustainability of the Project's pavement system. "Cool" pavements will be used to reduce heat island effects.
LUT-12: Electrify Construction and Landscaping Equipment. Utilize electric equipment wherever feasible for construction projects. Reduce the use of gas-powered landscaping equipment.	All landscape maintenance equipment at Centennial will be electric. The Project will incorporate an outreach and education program for the Centennial property owners, in collaboration of SCAQMD, to reduce the use of gasoline-or diesel-powered landscaping equipment.
CATEGORY 3: WATER CONSERVATION AND WASTEWATER	
Existing County Initiatives	
Conservation rebates, smart gardening workshops and stormwater controls provide water and wastewater improvements in existing communities	This measure does not apply to new communities. The Project includes compliance with drought-response State measures including the Model Water Efficient Landscape Ordinance (MWELO), which are more stringent than required by CALGreen (DWR 2015). The Project includes 2 WRFs that will provide a reliable supply of recycled water for landscaping, to reduce reliance on potable water supplies.
New CCAP Actions	
WAW-1: Per Capita Water Use Reduction Goal. Meet the State established per capita water use reduction goal as identified by Senate Bill (SB) X7-7 for 2020. The State goal is a 20 percent reduction in per capita water use compared to baseline levels.	The final EIR for the Antelope Valley Area Plan (AVAP) update utilized the Antelope Valley Integrated Regional Water Management Plan (AVIRWMP) average Antelope Valley estimate of per capita water use (199 gallons per capita per day

TABLE 5.21-11
CENTENNIAL PROJECT COMPLIANCE WITH THE LOS ANGELES COUNTY COMMUNITY CLIMATE ACTION PLAN

Existing Initiatives and New CCAP Actions	Centennial Implementation Actions
	[gpcd]) to evaluate the water demand growth that could occur from the implementation of the AVAP. At full buildout, the Project's total per capita water use would be approximately 177.5 gpcd. The Project would reduce water demand by approximately 10% below the per capita average consumption in the Antelope Valley. The analysis compared the Project to the baseline per capita consumption in the Project vicinity since the Project site is undeveloped there is not an established baseline of water consumption on the Project site.
WAW-2: Recycled Water, Water Supply Improvement Programs, and Stormwater Runoff. Promote the use of wastewater and gray water to be used for agricultural, industrial, and irrigation purposes. Manage stormwater, reduce potential treatment, and protect local groundwater supplies.	The Project includes a comprehensive water resources management program, including: 1. *Recycled Water.* The Project includes water recycling facility to recycle, and reuse, wastewater piped to the Project WRF. All nonresidential and multi-family development must install recycled water infrastructure to irrigate common areas for these facilities (except where prohibited by law), and all available recycled water shall be used for such irrigation uses. 2. *Potable Water Conservation.* The Project includes numerous potable water conservation measures, including: A. Establishing maximum available water allocations for each residential and commercial parcel, and monitoring and enforcing such allocations through a metering system and rate structure and/or penalty structure for those exceeding their water allocations. B. Restricting outdoor landscaping planting in private yards to a designated low-water plant pallets to minimize use of potable water for private landscaping, prohibiting turf in commercial projects, and restricting turf to 25% of landscaped areas on private residential projects. C. Requiring the exclusive use of Energy Star or equivalent major appliances, as described above, that use less water (as well as less energy). D. Requiring the exclusive use of kitchen and bathroom faucets that comply with 2013

TABLE 5.21-11
CENTENNIAL PROJECT COMPLIANCE WITH THE LOS ANGELES COUNTY COMMUNITY CLIMATE ACTION PLAN

Existing Initiatives and New CCAP Actions	Centennial Implementation Actions
	CALGreen code residential voluntary measures specified in Sections A4.303.1 and A4.303.3 of the code. 3. *Storm Water Management.* The Project's integrated water resources management approach will comply with County requirements related to hydrology and flood control considerations through compliance with Low Impact Development (LID) standards and best management practices (BMPs) for sediment management through hydromodification techniques. The Project includes 2 WRFs that will provide a reliable supply of recycled water for landscaping, to reduce reliance on potable water supplies. The Project provides a reliable water supply through use of an integrated water resources management approach that incorporates water conservation measures; uses recycled water for non-potable uses; uses multiple sources of water supply to ensure that the Project's water needs are met without the need to solely rely on the annual delivery of a fixed amount of imported water; provides a high degree of water supply reliability for each stage of Project buildout; and minimizes the impacts of additional water demand on the state's water supply.
CATEGORY 4: WASTE REDUCTION, REUSE AND RECYCLING	
Existing Initiatives	
Community waste diversion programs to redirect 50 percent of solid wastes to recycling or re-use instead of landfills	The Project will exceed this existing measure by implementing a 100 percent diversion of soil during grading activities, and at least 70 percent of non-hazardous construction and demolition waste. The Project will also divert 75 percent of operational solid waste.
New CCAP Action	
SW-1: Waste Diversion Goal. For the County's unincorporated areas, adopt a waste diversion goal to comply with all State mandates to divert at least 75 percent of waste from landfill disposal by 2020.	The Project includes both a construction and operational waste reduction measures. 1. The Project must implement a plan and monitoring program to ensure recycle or reuse of a minimum of 75% by weight of construction and demolition debris, exclusive of soil, rock, and gravel. This quantity exceeds the 50% requirement of Section 20.87.040 of the County Code and the 75% target proposed in the CCAP.

TABLE 5.21-11
CENTENNIAL PROJECT COMPLIANCE WITH THE LOS ANGELES COUNTY COMMUNITY CLIMATE ACTION PLAN

Existing Initiatives and New CCAP Actions	Centennial Implementation Actions
	2. The Developer must provide the County with a contract establishing an on-site waste recycling and composting program, including the collection of metals, paper, household plastics, glass, cardboard, green waste and food waste. The waste hauler should be required by contract to maintain records showing the diversion of not less than 75% of the operational waste generated by the Project. The Project will include a minimum of five acres for a Materials Recovery Facility/Transfer Station (MRF/TS), which may include mulching and composting operations and a Household Hazardous Waste Permanent Collection Center. An MRF/TS could be privately or publicly operated. The MRF/TS would allow for all materials that are recyclable to be sorted and compacted for shipment to an off-site recycling processing facility. The Developer shall encourage a waste management company to build these facilities within the Project site by grading, improving, and providing utility hookups by the end of the first phase of construction. The CC&R for the MRF/TS will require that the lot provided within the site remain as a Non-Disposal Solid Waste Processing Facility.

TABLE 5.21-11
CENTENNIAL PROJECT COMPLIANCE WITH THE LOS ANGELES COUNTY COMMUNITY CLIMATE ACTION PLAN

Existing Initiatives and New CCAP Actions	Centennial Implementation Actions
CATEGORY 5: LAND CONSERVATION AND TREE PLANTING	
Existing Initiatives	
Implementation of the urban forestry plan and oak woodlands conservation management plan.	The Project's Natural Resources/Open Space Management Plan includes both on-site and off-site preserve areas. Approximately 5,116 acres of open space are available for use as on-site mitigation and off-site mitigation areas total 23,547 acres, for a combined total of 28,663 acres of preserved open space resulting from Project implementation. The Project avoids development within established Significant Ecological Areas, minimizes disturbance of high-value biological resources, including native grasslands, oak savannas, and oak woodlands, and preserve contiguous open space areas in order to keep its viability as wildlife habitat. Open spaces will be provided within the Business Park that allow for wildlife movement between the southern portion of the Project site through to the drainage located on the northern side of SR 138.
New CCAP Actions	
LC-1: Develop Urban Forests. Support and expand urban forest programs within the unincorporated areas.	The Project's Natural Resources/Open Space Management Plan includes both on-site and off-site preserve areas. Approximately 5,116 acres of open space are available for use as on-site mitigation and off-site mitigation areas total 23,547 acres, for a combined total of 28,663 acres of preserved open space resulting from Project implementation. The Project avoids development within established Significant Ecological Areas, minimize disturbance of high-value biological resources, including native grasslands, oak savannas, and oak woodlands, and preserve contiguous open space areas in order to keep its viability as wildlife habitat. The planting of an estimated 35,123 new trees, as required by the County Tree Planting Ordinance would result in an estimated long-term sequestration of 24,867 metric tons of carbon dioxide equivalent ($MTCO_2e$). This is a conservative analysis, as it is likely that many more trees would be planted than the minimum required by the County ordinance.
LC-2: Create New Vegetated Open Space. Restore and revegetate previously disturbed land and/or unused urban and suburban areas.	This action is not directly applicable to new development projects. However, the Project's Natural Resources/Open Space Management Plan includes both on-site and off-site preserve areas. Approximately 5,116 acres of open space are available for use as on-site mitigation and off-site mitigation areas total 23,547 acres, for a combined

TABLE 5.21-11
CENTENNIAL PROJECT COMPLIANCE WITH THE LOS ANGELES COUNTY COMMUNITY CLIMATE ACTION PLAN

Existing Initiatives and New CCAP Actions	Centennial Implementation Actions
	total of 28,663 acres of preserved open space resulting from Project implementation. The Project avoids development within established Significant Ecological Areas, minimize disturbance of high-value biological resources, including native grasslands, oak savannas, and oak woodlands, and preserve contiguous open space areas in order to keep its viability as wildlife habitat. Additionally, the Project would plant an estimated 35,123 new trees, as required by the County Tree Planting Ordinance. This would result in an estimated long-term sequestration of 24,867 $MTCO_2e$. This is a conservative analysis, as it is likely that many more trees would be planted than the minimum required by the County ordinance
LC-3: Promote the Sale of Locally Grown Foods and/or Products. Establish local farmers markets and support locally grown food.	The Project will include a weekly Farmer's Market sponsored by the homeowners association (HOA) or other entity selected by the Master Applicant/Developer, and will allow for community gardens as a permitted use in commercial and residential areas.
LC-4: Protect Conservation Areas. Encourage the protection of existing land conservation areas.	The Project's Natural Resources/Open Space Management Plan includes both on-site and off-site preserve areas. Approximately 5,116 acres of open space are available for use as on-site mitigation and off-site mitigation areas total 23,547 acres, for a combined total of 28,663 acres of preserved open space resulting from Project implementation. The Project avoids development within established Significant Ecological Areas, minimize disturbance of high-value biological resources, including native grasslands, oak savannas, and oak woodlands, and preserve contiguous open space areas in order to keep its viability as wildlife habitat.

As shown in Table 5.21-11, the Project would be consistent with, and would not conflict with, all applicable actions of the CCAP and its greenhouse gas reduction strategy.

The CCAP also recognizes the importance of ongoing implementation of statewide GHG reduction statutory mandates, including the following:

- **STATE-1:** Renewable Portfolio Standard, which requires California utilities to generate 50 percent of the state's electricity from renewable sources by 2030.
- **STATE-2:** CALGreen Building Code Standards (Title 24), which reduces GHG emissions through energy and water efficiency standards to be implemented in Commercial and Residential Buildings.

- **STATE-3:** Pavley/Advanced Clean Cars fuel efficiency standards, and Low Carbon Fuel Standards for on-road transportation, to reduce GHG emissions from fossil fuel use in transportation.
- **STATE 4:** Low Carbon Fuel Standard for Off-road Equipment and Vehicles, to reduce GHG emissions from fossil fuel use in construction equipment and other off-road equipment and vehicles.
- **STATE 5:** California Cap-and-Trade Program, to reduce GHG from stationary sources like factories and power plants, and from fossil fuel use.

These statewide mandates apply to Centennial-related buildings and activities, and will further reduce Project-related GHG emissions.

Consistency with the SCAG 2016–2040 RTP/SCS

The 2016-2040 RTP/SCS is the regional sustainable community strategy prepared pursuant to SB 375. The 2016–2040 RTP/SCS, prepared pursuant to SB 375 includes the same land use designations and density assumptions for Centennial Project site as the approved 2012–2035 RTP/SCS. As demonstrated in Section 5.9, Population, Housing, and Employment, the regional projections formally adopted by SCAG in its 2012–2035 RTP/SCS are used to determine Project conformity with these projections.

Demographic projections included as part of the adopted SCAG 2016–2040 RTP/SCS include development of the Project and are the most recently updated demographic projections available for the Project site and regional vicinity. The County and regional projections were formally adopted by SCAG and the Project has been analyzed to determine conformity with these projections in Section 5.9, Population, Housing, and Employment, of this EIR. Thus, the Project is consistent with, and would not conflict with, the regional blueprint prepared in accordance with SB 375 to reduce the regional share of GHG emissions attributable to the land use sector.

Off-Site Impacts

Construction of the off-site Project features (i.e., roadway improvements, water infrastructure, and utilities connections), as described in Section 4.7 of the EIR, would generate short-term GHG emissions. These construction activities and their associated emissions would be emissions would be a small part of the estimated on-site emissions, quantified above in Table 5.21-10. Upon completion of construction, the Project off-site roadway, water infrastructure, and utility improvements would not generate GHG emissions.

Impact Summary

Under AB 32, CARB, which is the agency in charge of regulating sources of emissions of GHGs in California, has been tasked with adopting regulations for reduction of GHG emission. The effects of the Project are evaluated based on whether the Project implements reduction strategies identified in applicable statutes such as AB/SB 32 and its implementing plans and regulations and other legal requirements and plans to reduce GHG to meet statutory requirements. As discussed above in Section 5.21.5, this impact analysis evaluates the

Project's compliance with applicable regulatory programs designed to reduce GHG emissions and that contribute to achievement of the State's GHG reduction goals in order to determine whether the Project would generate direct or indirect GHG emissions that may have a significant impact on the environment, a "pathway to compliance" recognized by the Supreme Court in the *Newhall* decision. As discussed under Threshold 21-1, the Project would comply with, and would be consistent with, applicable regulatory programs designed to reduce GHG emissions and would thus contribute to the achievement of AB 32's greenhouse gas reduction goals. Since the Project would comply with applicable regulatory programs designed to reduce GHG emissions, the Project-level impact related to GHG emissions could be considered less than significant under Threshold 21-1.

Furthermore, as discussed above under Threshold 21-2, this impact analysis evaluates whether the project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases by examining its consistency with the CCAP and SCAG's RTP/SCS, another "pathway to compliance" recognized by *Newhall*. As discussed above, the Project would be consistent with, and would not conflict with, the Los Angeles County CCAP, which meets the requirements for a programmatic climate action plan specified in Section 15183.5 of the State CEQA Guidelines, as well as the RTP/SCS, the regional sustainable communities strategy prepared pursuant to SB 375. Since the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and would be consistent with, and not conflict with, an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions, the Project-level impact related to GHG emissions could be considered less than significant under Threshold 21-2.

However, climate change is a global phenomenon and the significance of greenhouse gas emissions is inherently cumulative in nature. Accordingly, the Project's impact related to GHG emissions is most appropriately considered on a cumulative level, not on a project level. As described above, the Project would emit GHGs at an estimated rate of 278,577 metric tons per year that would contribute to the global inventory of GHGs.

To date, California remains a global leader in in mandating GHG emission reductions across a broad spectrum of economic sectors, and most other nations and states have not enacted regulations similar to those adopted in California. California also already has nearly the lowest level of GHG per capita of any state. The County of Los Angeles has no jurisdictional control or responsibility for GHG reductions in other parts of California (and certainly not in the context of global action), which all contribute to climate change. In addition, the County does not have jurisdiction to enforce statewide implementation of all of the applicable GHG-reducing regulatory programs with which the Project (and other statewide projects) must comply. Although many other agencies with the necessary jurisdiction are currently taking action to reduce GHG emissions, the County cannot assure that these measures would ultimately be implemented or sufficient to address climate change. In light of these considerations, as well as the global nature climate change related to GHG emissions and the Project's total estimated GHG emissions, the Project's incremental contribution to the global GHG emissions inventory would be considered cumulatively considerable and this cumulative impact is significant and unavoidable, even though the Project satisfies several "pathways to compliance" identified by the *Newhall* court.

5.21.7 MITIGATION MEASURES

The mitigation measures included below were informed by a review of potentially feasible GHG reduction measures identified by staff from the Attorney General of California, included on lists of potentially feasible measures from other agencies (e.g., Air Districts, planning associations), and measures suggested by the applicant.

Because the Office of Planning and Research (OPR) and other expert agencies and scientists agree that GHG emissions are inherently a cumulative impact issue relative to global climate change, the CEQA requirements for mitigating the project's contribution to a significant cumulative impact apply. The Supreme Court in the Newhall case identified several compliance pathways for assessing the significance of GHG emissions from projects, as described above. The project complies with each applicable pathway, and thus has a less than significant impact at a project level.

At a cumulative level, the project contributes GHG emissions to the global inventory of GHG emissions which are collectively causing climate change; however, on this global scale the GHG emissions of a single development project are insufficient to cause a significant adverse global climate change impact since all of California's anthropomorphic activities taken together account for only about 1% of global anthropomorphic GHG emissions based on US EPA data (2015). This conclusion that the project alone does not cause or substantially contribute to a significant adverse cumulative GHG impact is further supported by the fact that this project is designed to accommodate forecast population and economic growth based on growth allocations made by the state Department of Community Development, and assigned by regions and local jurisdictions as part of the Regional Housing Needs Assessment and Sustainable Communities Strategies programs described further in Section 5.9, and the project does not itself cause this population or economic growth. In fact, if this forecast growth does not occur on the Project site, it is likely to occur in other locations where per capita GHG emissions are equal to or higher than average per capita emissions in California. Per capita GHG emissions can vary by local jurisdiction, but locations with the lowest per capita emissions (San Francisco and New York City) also have housing costs that are among the highest in the nation as well as the state. Due to the widespread shortage and very high cost of California housing, numerous studies have confirmed that over 600,000 people have moved from California to other states over the past several years, and since most of those states (e.g., Texas, Arizona, Nevada) have much higher per capita GHG emissions than California the net effect of continuing to provide insufficient housing opportunities for California is to cause a net increase in global GHG for people who relocate to states with more housing opportunities.

Finally, courts have consistently held that single projects cannot be required to bear a greater than proportional share of mitigating a cumulative significant impact. Because GHG emissions from transportation, water and waste management and use, heating and cooling of buildings, and a myriad of other activities are common to all new and modified development projects, and are common attributes of simply residing, working or producing goods or services in California, the feasibility of the mitigation measures required for this project must be commensurate with a fair share allocation and not with a hypothetical "net zero" or "net reduction" threshold. Within this cumulative impact mitigation measure framework, all feasible mitigation measures to reduce the Project's GHG emissions impacts have been required and are described below:

MM 21-1 The Project Applicant/Developer shall provide the County with plans and specifications that demonstrate 50 percent of the Project's anticipated electrical energy demand at buildout shall be satisfied from on-site renewable energy generation. "Anticipated electrical energy demand" shall be determined on the basis of the anticipated loads for each building as shown in the reports submitted at the time of building permit application pursuant to the Building Energy Efficiency Standards of Title 24. "On-site renewable energy generation" includes, but is not limited to, solar, wind, geothermal, biofuel and hydroelectric systems. These systems shall be installed in connection with the development of one or more of the following: residential units, nonresidential buildings, public buildings, or Specific Plan utility facilities located either within the Specific Plan area or within its immediate vicinity.

MM 21-2 The Project's plans and specifications shall demonstrate compliance with California Green Building Standards (CALGreen) Code voluntary measure A4.203.1.2.1 Tier 1 for newly-constructed low-rise residential buildings. Therefore, the energy efficiency of these buildings would exceed 2016 Title 24 requirements by 15 percent. Low rise buildings are three stories or less. The Project shall incorporate the Green Development Program (Centennial Specific Plan, Appendix 2A), and the Project Applicant/Developer shall be responsible for the implementation of this requirement, which may include energy reduction measures such as use of high performance glazing, radiant heat roof barriers, insulation of all pipes, programmable thermostats, fluorescent and LED bulbs, solar access, sealed ducts, strategic placement of trees and other shading devices. All single-family homebuyers shall have the option to include a photovoltaic array system.

MM 21-3 The Project's plans and specifications shall demonstrate compliance with CALGreen voluntary measure A5.203.1.2.1 Tier 1 for nonresidential buildings (e.g. hotel, high-rise residential), thereby exceeding the 2016 Title 24 energy efficiency requirements for these buildings by 10 percent. The Project shall incorporate the Green Development Program (*Centennial Specific Plan*, Appendix 2A), and the Project Applicant/Developer shall be responsible for the implementation of this requirement, which may include energy reduction measures such as high performance glazing, radiant heat roof barriers, high-

efficient HVAC with hot-gas reheat, insulation of all pipes, programmable thermostats, fluorescent and LED bulbs, solar access, sealed ducts, zero use of CFC refrigerants in commercial buildings, strategic placement of trees, and other shading devices. Commercial structures shall include passive solar design techniques, such as a north-south panel orientation on buildings, and shall install operable windows designed to maximize natural ventilation by opening into prevailing west winds at inlets and away outlets, thereby reducing use of interior climate controls.

MM 21-4 The Project Applicant/Developer shall require, in contract specifications, that contractors limit construction equipment idling to 3 minutes and include a program to ensure that equipment operators comply with the 3-minute limit.

MM 21-5 The Project Applicant/Developer shall provide plans and specifications to the County demonstrating that a minimum of 70 percent of public and community pools and spas shall be equipped with active solar heating systems where heating is necessary or desired. The Project Applicant/Developer shall provide the proposed plan for compliance with this provision prior to obtaining a permit for the pool.

MM 21-6 Deeds, CC&Rs or similar legal documents shall contain the following requirement: The owners of all single-family and multi-family residential units shall be required, upon resale, to present to the buyer a written energy audit checklist prepared by a qualified third party at the time the seller provides the buyer with the Real Estate Transfer Disclosure Statement required by California Civil Code, Section 1102 et seq. The energy audit checklist shall certify that all HVAC systems, thermostats, appliances, windows and swimming pools (if applicable) are the same as those originally installed or, if changed, otherwise comply with Centennial's Green Development Program. All residential pool covers shall be removable, and shall not be automatic retractable covers.

The CC&Rs of the master homeowners association or other applicable association shall require compliance with the provisions of this measure and shall provide notice to individual owners of the resale energy audit checklist requirement. The master homeowners association or other applicable association shall monitor compliance and provide the County with an annual report of compliance with this measure.

MM 21-7 Deeds, CC&Rs, or similar legal documents shall contain the following requirement: For nonresidential buildings, within ninety (90) days after the end of the first full calendar year following the issuance of the certificate of occupancy and within ninety (90) days after each five year period thereafter, the owner or tenant in possession thereof shall submit to the master commercial owners association or other applicable association a report prepared by the owner or a qualified, independent third party that evaluates whether all major building systems such as heat furnace, air conditioner, and

other mechanical fixtures are working within the design standards established for each system. The master commercial owners association or other applicable association shall monitor compliance and provide the County with an annual report of compliance with this measure.

MM 21-8 Energy efficient major appliances and HVAC systems that meet the more stringent of applicable California Energy Commission (CEC) requirements or ENERGY STAR requirements, or equivalent, shall be exclusively offered by residential builders. Major appliances subject to this requirement include dishwashers, clothes washers, refrigerators, and room air conditioners.

MM 21-9 The Project Applicant/Developer shall provide plans and specifications to the County that have been prepared in accordance with the Project Water Purveyor or alternate qualified public utility district requirements and standards, demonstrating that the Project's wastewater reclamation facilities (WRFs) shall include equipment to capture and reuse biogas for energy production.

MM 21-10 The Project Applicant/Developer shall provide plans and specifications to the County demonstrating that nonresidential or multi-family buildings shall be constructed with recycled water infrastructure to serve common areas for these facilities, except where prohibited by law. To the extent recycled water is produced within the Project and available, recycled water shall be used for landscape irrigation within those common areas. Compliance with these measures shall be established prior to the issuance of a construction permit for nonresidential and multi-family facilities and at the time of County approval of final landscaping plans submitted by the Project Applicant/Developer after final map recordation for homeowners association common areas. Covenants, conditions and restrictions (CC&Rs) shall require the owners of such common areas to maintain, repair and replace irrigation systems and plantings in accordance with County approved plans.

MM 21-11 The Project Applicant/Developer shall provide plans and specifications to the County demonstrating that non-residential building shall be constructed with indoor plumbing fixtures and fixture fittings that would reduce the overall use of potable water within the building by 12 percent, consistent with 2016 CALGreen Tier 1 non-residential voluntary measures as prescribed in Section A5.303.2.3.1 of the code.

MM 21-12 The Project Applicant/Developer shall provide plans and specifications to the County demonstrating that single or multi-family residential building shall be constructed with kitchen faucets and appliances that comply with 2016 CALGreen code residential voluntary measures specified in Sections A4.303.1 and A4.303.3 of the code.

MM 21-13 The outdoor residential (single-family and multi-family) water budget for water-budget-based ratemaking shall be based on having no more than 25

percent turf grass allowed in landscaped areas of single-family detached residential front yards and multi-family residential common areas.

MM 21-14 Ten percent of all homes in Centennial communities that permit housing, with the exception of the lowest density area (Community 8-2) will be affordable, in conformance with the Affordable Housing Implementation Plan (see Appendix 3-H of the *Centennial Specific Plan*).

MM 21-15 The Project Applicant/Developer shall provide plans and specifications to the County demonstrating that one 208/240 VAC receptacle that may be used for charging electric vehicles, shall be installed in each detached and attached single-family residence. The installation shall comply with requirements of the 2016 CALGreen Code Section 4.106.4.1, or the most applicable code at the time of construction.

MM 21-16 The Project Applicant/Developer shall provide plans and specifications to the County demonstrating that "alternative energy fueling stations" shall be installed as follows. An "alternative energy vehicle fueling station" is a 208/240 VAC electrical vehicle charging station or a station providing another new or improved technology (e.g. compressed natural gas (CNG) and hydrogen fuel cell) that provides refueling for vehicles that do not use fossil fuel. An electric charging station shall allow for simultaneous charging of two electric vehicles.

- Business Park and Institutional land use designations shall provide a minimum of one alternative energy vehicle fueling station on site for the first 50,000 square feet of usable floor space and additional alternative energy vehicle fueling stations for each additional 50,000 square feet of usable floor space thereafter.
- Multi-family residential buildings of at least 20 residential units shall provide a minimum of one alternative energy vehicle fueling station for the first twenty (20) residential units and an additional alternative energy vehicle fueling station for each additional twenty (20) residential units thereafter.
- The Town Center and each Village Center shall provide a minimum of one alternative energy vehicle charging station.
- Designated Transit Hubs shall provide a minimum of one alternative energy vehicle charging station.

MM 21-17 The Project Applicant/Developer shall provide plans and specifications to the County demonstrating that the following features have been incorporated into the building designs for non-residential buildings:

- Bicycle parking spaces at a rate of 5 percent of minimum required vehicle parking spaces for non-residential land uses.

- Preferential parking for low-emitting, fuel-efficient, and carpool/van vehicles shall be provided as specified in Section A5.106.5.1, Nonresidential Voluntary Measures, of the CALGreen Code.

MM 21-18 The Project Applicant/Developer shall provide plans and specifications to the County demonstrating that the following features have been incorporated into the building designs or specifications for multi-family residential buildings:

- Visitor parking shall include preferentially located parking spaces for alternative-fueled vehicles.
- Bicycle parking shall be provided as specified in Section A4.106.9, Residential Voluntary Measures, of the CALGreen Code or as required by County Code Section 22.52.1225B, whichever is more stringent.

MM 21-19 For parking structures and parking lots with 20 or more parking spaces, the Project Applicant/Developer shall provide plans and specifications to the County demonstrating that the following features have been incorporated into the parking facility:

- The parking facility shall include a minimum of five percent preferentially located parking spaces for alternative-fueled (electric, natural gas, or similar low-emitting technology) vehicles.
- The parking facility shall include at least one electric vehicle charging station. Electrical lines shall be designed and sized to add additional charging stations for up to three percent of the total parking spaces when a demand is demonstrated. The design and installation shall be consistent with Section A4.106.8.2, Residential Voluntary Measures, of the CALGreen Code.
- For residential parking facilities, bicycle parking shall be provided as specified in Section A4.106.9, Residential Voluntary Measures, of the CALGreen code or as required by County Code Section 22.52.1225B, whichever is more stringent.

MM 21-20 The Project Applicant/Developer shall ensure that the implementation of the Green Development Program takes into account compliance with the following regulations:

1. Regulations that are quantified inputs into the CalEEMod analysis, resulting in GHG Reductions:

    a. Pavley Motor Vehicle Standards (AB 1493)

    b. Low Carbon Fuel Standard (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 7, Section 95480 et seq.)

c. Title 24 (part 6 [Energy Code] and part 11 [CALGreen Code]) of the California Code of Regulations

d. Renewable Portfolio Standard (SB X1 2 and SB 350)

e. Solid Waste Diversion (AB 341)

f. Statewide reduction in potable urban water usage of 25 percent relative to water use in 2013 (Executive Order B-29-15)

g. Model Water Efficient Landscape Ordinance (MWELO) (California Code of Regulations, Title 23, Division 2, Chapter 2.7)

h. Los Angeles Tree Planting Ordinance (Los Angeles County Code, Title 22, Division 1, Chapter 22, Part 20, Sections 22.52.2100 et seq.)

i. Los Angeles County Green Building Standards Code (Los Angeles County Code, Title 31, Chapter 1, Sections 100 et seq.)

j. California Water Code (California Code of Regulations, Division 6, Part 2.10, Sections 10910–10915)

k. Los Angeles County Community Climate Action Plan

2. Regulations that are not quantified inputs into the CalEEMod analysis, but should be considered for incorporation as appropriate:

a. EPA and NHTSA GHG and CAFE standards for passenger cars, light-duty trucks, and medium-duty passenger vehicles (75 FR 25324–25728 and 77 FR 62624–63200) and for medium- and heavy-duty vehicles (76 FR 57106–57513)

b. Cap-and-Trade Program for Electricity, Stationary Sources, and Fuels (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, Article 5, Section 95801 et seq.)

c. Advanced Clean Cars Program (California Code of Regulations, Title 13, Division 3, Chapter 1, Articles 1, 2, 6 (parts); Chapter 2, Articles 1, 2.1, 2.3, 2.4 (parts); Chapter 4.4 (parts); Chapter 8 (parts).

d. Under Inflated Vehicle Tires (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 8, Section 95550 et seq.)

e. Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Regulation (California Code of Regulations, Title 17, Division 3,

Chapter 1, Subchapter 10, Article 4, Subarticle 1, Section 95300 et seq.)

f. Management of High Global Warming Potential Refrigerants for Stationary Sources (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 5.1, Section 95380 et seq.)

g. Small Containers of Automotive Refrigerant (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 5, Section 95360 et seq.)

h. High-Global Warming Potential Greenhouse Gases in Consumer Products (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 8.5, Article 2)

i. CALGreen Code as Adopted by the Building Standards Commission (California Code of Regulations, Title 24, Part 11 Emergency Building Standard DSA-SS EF-02/15)

j. Natural Gas Cooking Stoves and Fireplaces (SCAQMD Rule 445)

5.21.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Although the Project would comply with various "pathways to compliance" for CEQA GHG analysis identified by the *Newhall* court, as discussed in Sections 5.21.6, even with implementation of all reasonable and feasible mitigation measures, as described in Section 5.21.7, the Project's climate change impacts would remain significant and unavoidable.

5.21.9 REFERENCES

American Recovery and Reinvestment Act of 2009 (ARRA). 2009 (February 17). Pub.L. 111-5. 111th U.S Congress. Washington D.C.

Bay Area Air Quality Management District (BAAQMD). 2011 (May). *California Environmental Quality Act, Air Quality Guidelines.* San Francisco, CA: BAAQMD. http://www.baaqmd.gov/~/media/Files/Planningpercent20andpercent20Research/CEQA/BAAQMDpercent20CEQApercent20Guidelines_Maypercent202011_5_3_11.ashx

———. 2010 (June). *Adopted Air Quality Thresholds of Significance*. San Francisco, CA: BAAQMD. http://www.baaqmd.gov/~/media/Files/Planningpercent20andpercent20Research/CEQA/Adoptedpercent20Thresholdspercent20Table_6_2_10.ashx.

———.2009a (April). *Workshop Draft Options Report: California Environmental Quality Act Thresholds of Significance*. San Francisco, CA: BAAQMD.

http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/workshop-draft-ceqa-thresholds-options-report-4-28-2009.pdf?la=en.

———. 2009b (December). *California Environmental Quality Act: Air Quality Guidelines*. San Francisco, CA: BAAQMD. http://www.baaqmd.gov/~/media/Files/Planningpercent20andpercent20Research/CEQA/Draftpercent20BAAQMDpercent20CEQApercent20Guidelines_Decpercent207percent202009.ashx.

Brekke, L.D., N.L. Miller, K.E. Bashford, N.W.T. Quinn, and J.A. Dracup. 2004. Climate Change Impacts Uncertainty for Water Resources in the San Joaquin River Basin, California. *Journal of the American Water Resources* Association*.* 40(1): 149–164. Malden, MA: Blackwell Synergy for AWRA.

California Air Pollution Control Officers (CAPCOA). 2010 (August). *Quantifying Greenhouse Gas Mitigation Measures.* http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf.

———. 2008 (January). *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act.* CAPCOA. http://www.energy.ca.gov/2008publications/CAPCOA-1000-2008-010/CAPCOA-1000-2008-010.PDF .

California Air Resources Board (CARB) 2016a (March). California Climate Investments. Annual Report to the Legislature on California Climate Investments Using Cap-and-Trade Auction Proceeds. Sacramento, CA: CARB. http://arb.ca.gov/cc/capandtrade/auctionproceeds/cci_annual_report_2016_final.pdf.

———**.** 2016b (December 2). 2030 Target Scoping Plan Update, Discussion Draft. Sacramento, CA: CARB. https://www.arb.ca.gov/cc/scopingplan/2030target_sp_dd120216.pdf.

———. 2016c (May 16). 2016 Mobile Source Strategy. Sacramento, CA: CARB. https://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc.pdf.

———.2016d (November). Revised Proposed Short-Lived Climate Pollution Reduction Strategy. Sacramento, CA: CARB. https://www.arb.ca.gov/cc/shortlived/meetings/11282016/revisedproposedslcp.pdf.

———. 2015a (October 5, last reviewed). AB 32 Scoping Plan. Sacramento, CA: CARB. http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

———. 2015b (October 5, last reviewed). Low Carbon Fuel Standards Regulation. Sacramento, CA: CARB. http://www.arb.ca.gov/regact/2015/lcfs2015/lcfs2015.htm.

———.2015c (June 30). California Greenhouse Gas Inventory - 2015 Edition). Sacramento, CA: CARB. http://www.arb.ca.gov/cc/inventory/data/data.htm.

———. 2014a (July 17, last reviewed). Lev III and ZEV Regulation Amendments for Federal Compliance Option, December 31. Sacramento, CA: CARB. http://www.arb.ca.gov/regact/2012/leviiidtc12/leviiidtc12.htm.

———. 2014b (May). *First Update to the Climate Change Scoping Plan*. Sacramento, CA: CARB. http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

———. 2013 (October). Climate Change Scoping Plan First Update, Discussion Draft for Public Review and Comment. Sacramento, CA: CARB. http://www.arb.ca.gov/cc/scopingplan/2013_update/discussion_draft.pdf, accessed October 2, 2013).

———. 2012 (September). Cap-and-Trade Regulation Instructional Guidance. Sacramento, CA: CARB. http://www.arb.ca.gov/cc/capandtrade/guidance/chapter1.pdf, accessed October 28, 2015).

———. 2011a. *Rulemaking To Consider The Adoption Of A Proposed California Cap On Greenhouse Gas Emissions And Market-Based Compliance Mechanisms Regulation, Including Compliance Offset Protocols*. Sacramento, CA: CARB. http://www.arb.ca.gov/regact/2010/capandtrade10/capandtrade10.htm.

———. 2011b (March 24). Update on Litigation Challenging Scoping Plan for the Global Warming Solutions Act, AB 32. Sacramento, CA: CARB. http://docs.nrdc.org/air/files/air_11032501a.pdf.

———. 2011c. Supplement to the AB 32 Scoping Plan Functional Equivalent Document, approved by Resolution 11-27, August 24, 2011. Sacramento, CA: CARB. http://www.arb.ca.gov/cc/scopingplan/fed.htm.

———. 2011d (July 28). Commitment Letter to National Program. Sacramento, CA: CARB. https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/carb_2017-2025_commitment_letter.pdf.

———.2011e (February 17, approval date). *Notice of Decision: Regional Greenhouse Gas Emissions Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375*. Sacramento, CA: CARB. https://www.arb.ca.gov/cc/sb375/notice%20of%20decision.pdf.

———. 2011f. (February) *Executive Order No. G-11-024: Relating to Adoption of Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375*. Sacramento, CA: CARB. http://www.arb.ca.gov/cc/sb375/executive_order_g11024.pdf.

———. 2009 (November). Greenhouse Gas Inventory – 2020 Forecast. Sacramento, CA: CARB. http://www.arb.ca.gov/cc/inventory/data/forecast.htm#summary_forecast. [Last Updated 10/28/2010]

———. 2008a (December). *Climate Change Scoping Plan: A Framework for Change*. Sacramento, CA: CARB. https://www.arb.ca.gov/cc/scopingplan/ document/adopted _scoping_plan.pdf.

———. 2008b. *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases Under the California Environmental Quality Act.* Sacramento, CA: CARB.

———. 2007a. (June 21). *Summary of Board Meeting: Consideration of Recommendations for Discrete Early Actions for Climate Change Mitigation in California*. Sacramento, CA: CARB.

———. 2007b. (October 25). *Summary of Board Meeting: Public Meeting to Consider Approval of Additions to Reduce Greenhouse Gas Emissions under the California Global Warming Solutions Act of 2006 and to Discuss Concepts for Promoting and Recognizing Voluntary Early Actions.* Sacramento, CA: CARB.

———. 2007c. (November) *California Greenhouse Gas Inventory (millions of metric tonnes of CO_2 equivalent) by IPCC Category*. Sacramento, CA: CARB. http://www.arb.ca.gov/ cc/inventory/archive/tables/ghg_inventory_ipcc_90-04_all_2007-11-19.pdf.

———. 2007d. (November) *Staff Report: California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit*. Sacramento, CA: CARB. http://www.arb.ca.gov/cc/ inventory/pubs/reports/staff_report_1990_level.pdf.

———. 2007e (December 14). Sector-Based Workshop: Land Use and Local Initiatives (PowerPoint Presentation by J. Weir and Annmarie Mora). Sacramento, CA: CARB. http://www.arb.ca.gov/cc/scopingplan/meetings/12_14_07/12_14slides/ landuselocalaction_sector.pdf.

California Building Standards Commission (CBSC). 2015 (accessed November 16). Adopted 2013 Code, Triennial California Building Standards Commission (CBSC). Adopted 2013 Code, Triennial Edition. Sacramento, CA: CBSC. http://www.bsc.ca.gov/Codes.aspx.

———. 2014 (January, effective date). CALGreen Code. Sacramento, CA; CBSC. http://www.bsc.ca.gov/Home/CALGreen.aspx.

California Climate Action Registry (CCAR). 2009a (January). *California Climate Action Registry General Reporting Protocol (Version 3.1)*. Los Angeles, CA: CCAR. http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2 009.pdf.

———. 2009b (June). *Local Government Operations Protocol.* Los Angeles, CA: CCAR. http://www.theclimateregistry.org/downloads/2009/05/LGO_Protocol.pdf.

California Climate Change Center (CCCC). 2012. *Reports on the Third Assessment from the California Climate Change Center.* Sacramento, CA: CCCC. http://climatechange.ca.gov/climate_action_team/reports/third_assessment/index.html.

California Department of Fish and Wildlife (CDFW). 2016 (December 16, site accessed) *Draft Additional Environmental Analysis for the Newhall Ranch Resource and Development Plan and Spineflower Conservation Plan Final Environmental Impact Report.* Sacramento, CA: CDFW. https://nrm.dfg.ca.gov/documents/ContextDocs.aspx?cat=NewhallRanchDraftAEA.

California Department of Resources Recycling and Recovery (CalRecycle). 2016a (April 22, site accessed). Mandatory Commercial Recycling. Sacramento, CA: CalRecycle. http://www.calrecycle.ca.gov/recycle/commercial/.

———. 2016b (April 22, site accessed). Mandatory Commercial Organics Recycling (MORe). Sacramento, CA: CalRecycle. http://www.calrecycle.ca.gov/recycle/commercial/organics/default.htm.

California Department of Transportation (Caltrans). 2016a. (June). California Transportation Plan 2040. Sacramento, CA: Caltrans. http://www.dot.ca.gov/hq/tpp/californiatransportationplan2040/Final%20CTP/FINALCTP2040-Report-PRINT-NoBleed_secured.pdf.

———. 2016b (July). California Sustainable Freight Action Plan 2016. Sacramento, CA: Caltrans. http://www.dot.ca.gov/casustainablefreight/theplan.html.

California Department of Water Resources (DWR). 2015 (September 18). Model Water Efficient Landscape Ordinance (Title 23, Chapter 2.7). Sacramento, CA: DWR. http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/Title%2023%20extract%20-%20Official%20CCR%20pages.pdf.

———. 2006 (July). *Progress on Incorporating Climate Change into Management of California Water Resources.* Sacramento, CA: DWR. http://www.water.ca.gov/climatechange/docs/ClimaticChange_DWRarticle_Mar08.pdf.

———. 2005 (December). *Final California Water Plan Update 2005. (Volume 4: Reference Guide).* Sacramento, CA: DWR. http://www.water.ca.gov/waterplan/cwp/previous/2005/index.cfm.

California Energy Commission (CEC) 2015a (Accessed October 27). 2016 Building Energy Efficiency Standards, Frequently Asked Questions. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf

———. 2015b (February). (Accessed February 3, 2017). Guidelines for Certification of Combined Heat and Power Systems Pursuant to the Waste Heat and Carbon Emissions Reduction Act, Public Utilities Code, Section 2840Et Seq. http://www.energy.ca.gov/2015publications/CEC-200-2015-001/CEC-200-2015-001-CMF.pdf.

———. 2015c (June). (Accessed January 6, 2017). *California Energy Efficiency Strategic Plan: New Residential Zero Net Energy Action Plan 2015-2020*. http://www.californiaznehomes.com/links-and-resources http://californiaznehomes.epaperflip.com/v/New-Residential-ZNE-Action-Plan-2015-2020

———. 2008. *Statement of Reasons for Adopting 2008 Building Energy Efficiency Standards*. Sacramento, CA: CEC. http://www.energy.ca.gov/title24/2008standards/.

———.2006 (December). *Refining Estimates of Water-Related Energy Use in California* (prepared by Navigant Consulting). Sacramento, CA: CEC. http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF.

California Governor's Office of Planning and Research (OPR). 2009a. Proposed Guidelines Amendments & Related Materials: Notice of Proposed Action. Sacramento, CA: OPR. http://www.ceres.ca.gov/ceqa/docs/Notice_of_Proposed_Action.pdf.

———. 2009b. Proposed Guidelines Amendments & Related Materials: Text of Proposed Guideline Amendments. Sacramento, CA: OPR. http://resources.ca.gov/ceqa/guidelines/proposed_guidelines_amendments_and_related_materials.html.

———. 2009c. *Transmittal of the Governor's Office of Planning and Research's Proposed SB97 CEQA Guidelines Amendments to the Natural Resources Agency.* Sacramento, CA: OPR. http://resources.ca.gov/ceqa/guidelines/proposed_guidelines _amendments_and_related_materials.html .

California Legislative Information 2015. 2015 (November 16, last accessed). SB-350 Clean Energy and Pollution Reduction Act of 2015. Sacramento, CA: California Legislative Information. https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=201520160SB350.

California Natural Resources Agency (CNRA). 2014 (July). Safeguarding California: Reducing Climate Risk; An update to the 2009 California Climate Adaptation Strategy. Sacramento, CA: CNRA. http://resources.ca.gov/docs/climate/Final_Safeguarding_CA_Plan_July_31_2014.pdf.

———. 2009a. (July). *Initial Statement of Reasons for Regulatory Action: Proposed Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of*

Greenhouse Gas Emissions Pursuant to SB97. Sacramento, CA: CNRA. http://resources.ca.gov/ceqa/docs/Initial_Statement_of_Reasons.pdf.

———. 2009b. Revised Text of Proposed Guideline Amendments. Sacramento, CA: CNRA. http://ceres.ca.gov/ceqa/docs/Text_of_Proposed_Changes.pdf.

———. 2009c. Notice of Public Hearings and Notice of Proposed Amendment of Regulations Implementing the California Environmental Quality Act. Sacramento, CA: CNRA. http://www.ceres.ca.gov/ceqa/docs/Notice_of_Proposed_Action.pdf.

———. 2009d. (December). *Final Statement of Reasons for Regulatory Action*. Sacramento, CA: CNRA. http://resources.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf.

California, State of. 2015a, *Center for Biological Diversity v. Department of Fish and Wildlife* (Cal. Supreme Ct., November 30, 2015, No. S217763).

———. 2015b. Senate Bill 350 (2015-2016 Reg, Session) Stats 2015, ch. 547.

———. 2015c. (April 1). Executive Department: State of California, Executive Order No. B-29-15. Sacramento, CA: the State. https://www.gov.ca.gov/docs/4.1.15_Executive_Order.pdf

———. 2014. Senate Bill 605 (2013-2014 Reg. Session) Stats 2014, ch. 523.

———. 2011a. *Ass'n of Irritated Residents v. California Air Resources Board* (Super. Ct. San Francisco County, March 18, 2011, No. CPF-09-509562).

———. 2011b. *Senate Bill X1-2* (2011-2012 First Extraordinary Session) Stats. 2011, ch. 1.

———. 2010. *Professional Engineers in Cal. Gov't v. Schwarzenegger* (Cal. Supreme Ct., October 4, 2010, No. S183411).

———. 2009. Governor's Executive Order No. S-21-09 (September 15, 2009).

———. 2008a. Governor's Executive Order No. S-14-08 (September 15, 2008).

———. 2008b. *Senate Bill 375* (2007-2008 Reg. Session) Stats. 2008, ch. 728.

———. 2008c. Governor's Executive Order No. S-13-08 (November 14, 2008).

———. 2007. Governor's Executive Order No. S-01-07 (January 18, 2007).

———. 2007b. Assembly Bill 1109 (2007-2008 Reg. Session) Stats. 2007, ch. 534.

———. 2006a. *Assembly Bill 32* (2005-2006 Reg. Session) Stats. 2005, ch. 488.

———. 2006b. *Senate Bill 107* (2005-2006 Reg. Session) Stats. 2006, ch 464.

———. 2006c. Senate Bill 1368 (2005-2006 Reg. Session) Stats. 2006, ch. 598.

———. 2006d. Senate Bill 1 (2005-2006 Reg. Session) Stats. 2006, ch. 132.

———. 2005. Governor's Executive Order No. S-03-05 (June 1, 2005).

———. 2002a. *Assembly Bill 1493* (2001-2002 Reg. Session) Stats. 2002, ch. 200.

———. 2002b. *Senate Bill 1078* (2001-2002 Reg. Session) Stats. 2002, ch 516.

———. 1997. *Santa Ana Hospital Medical Center v. Belshe* (3rd District. App. Ct., July 23, 1997, No. C024834).

———. 1990. *California Constitution*, Article 4, Section 8(b), last amended June 5, 1990.

———. 1988. *Laurel Heights Improvement Association v. Regents of University of California* (Cal. Supreme Ct., December 1, 1988, No. S001922).

CalSpace Virtual Museum. 2002. CalSpace Glossary of Terms: Carbon Cycling. San Diego, CA: University of California. http://earthguide.ucsd.edu/virtualmuseum/Glossary_Astro/gloss_a-f.shtml#carbonCycle.

Cayan, D., A.L. Luers, M. Hanemann, G. Granco, and B. Croes. 2006 (February). Scenarios of Climate Change in California: An Overview (White Paper, CEC-500-2005-203-SF). Sacramento, CA: CCCC. http://www.energy.ca.gov/2005publications/CEC-500-2005-186/CEC-500-2005-186-SF.PDF.

Center for Biological Diversity v. Kempthorne (Ninth Circuit 2009) 588 F.3d 701.

Citizens for Responsible Equitable Environmental Development (CREED) v. City of Chula Vista (2011) 197 Cal.App.4th 327.

Congressional Research Service (CRS). 2009 (May). *U.S. Tree Planting for Carbon Sequestration* (prepared by Ross W. Gorte. Specialist in Natural Resources Policy). https://fas.org/sgp/crs/misc/R40562.pdf.

Consolidated Appropriations Act of 2008 (Consol. Appro.). 2007 (January 4). Pub. L. 110-161. 110th U.S Congress. Washington D.C.

Council on Environmental Quality (CEQ). 2014. *Revised, Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts*, December 18, 2014. https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/nepa/ghg-guidance.

———. 2010. *Memorandum for Heads of Federal Departments and Agencies, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*, February 18, 2010. https://ceq.doe.gov/docs/ceq-regulations-and-guidance/20100218-nepa-consideration-effects-ghg-draft-guidance.pdf.

Department of the Interior (DOI). 2008 (October 3). Letter from David Bernhardt, Solicitor, to the Secretary of the Interior entitled "Guidance on the Applicability of the ESA's

Consultation Requirements to Proposed Actions Involving the Emissions of GHGs (Opinion M-37017)." http://www.peer.org/docs/doi/08_14_10_interior_solicitor_memo.pdf.

ENVIRON International Corporation 2011 (June). *Climate Change Technical Report, Centennial.* Emeryville, CA: ENVIRON.

————. 2010 Memo from Shari Libicki, David Kim, and Jennifer Schulte (ENVIRON International Corporation) to CAPCOA Project Oversight Panel entitled "Baseline Electricity Emission Factors for GHG Mitigation Measure Analyses".

————. 2009. Personal communication. Email from D. Weaver (Senior Associate, ENVIRON International Corporation) to C. Holloway (Associate, Holland & Knight) with an attachment entitled "20091221 cent relationship table for EIR.xls".

Energy Independence and Security Act of 2007 (EISA). 2007 (January 4). Pub.L. 110-140. 110th U.S Congress. Washington D.C.

Golden Valley Municipal Water District (GVMWD). 2011 (May 18). *Centennial Water Supply Assessment and Verification Report, SB 610/221.* Gorman, CA: GVMWD (Appendix 5.18-A).

Inkley, D. B., M. G. Anderson, A. R. Blaustein, V. R. Burkett, B. Felzer, B. Griffith, J. Price, and T. L. Root. 2004. *Global Climate Change and Wildlife in North America* (Wildlife Technical Review 04-2). Bethesda, MD: The Wildlife Society.

Intergovernmental Panel on Climate Change (IPCC). 2000. Summary for Policymakers. Land Use, Land-Use Change, and Forestry (A Special Report of the Intergovernmental Panel on Climate Change). http://www.ipcc.ch/pdf/ special-reports/spm/srl-en.pdf.

Kiparsky, M. and P.H. Gleick. 2003 (July). *Climate Change and California Water Resources: A Survey and Summary of the Literature.* Oakland, CA: Pacific Institute for Studies in Development, Environment, and Security. http://www.pacinst.org/reports/ climate_change_and_california_water_resources.pdf.

Los Angeles, County of. 2016 (April 25, current through). *Los Angeles County, California – Code of Ordinances* (Title 31, Green Building Standards Code). Tallahassee, FL: Municode Corporation for the County. https://www2.municode.com/library/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT31GRBUSTCO.

————. 2016a (April accessed). Tree Planting Ordinance. Los Angeles, CA: DRP. http://planning.lacounty.gov/tree.

————. 2016b. (March 29). Ordinance Amending Title 21 and Title 22 to Establish Tree Planting Requirements for New Projects. Los Angeles, CA: DRP. http://planning.lacounty.gov/assets/upl/project/tpo_draft-ordinance.pdf.

———. 2015a. *Unincorporated Los Angeles County Community Climate Action Plan 2020*. Final. August. Los Angeles, CA. Prepared with assistance from: ICF International (ICF 027920.0.011).

———. 2015b. (October 6). Los Angeles County General Plan. Los Angeles, CA: DRP.

———. 2014a (June). *Los Angeles County General Plan Update, Draft Environmental Impact Report*. Los Angeles, CA: DRP. http://planning.lacounty.gov/assets/upl/project/gp_2035_deir.pdf.

———. 2007 (October 4). Report on the Impact of the State Action Against San Bernardino County Regarding its General Plan Update and the County's Efforts to Improve Energy Efficiency and Combat Global Warming (A Letter from B.W. McClendon, FAICP, Director of Planning to the Board of Supervisors). Los Angeles, CA: the County. http://file.lacounty.gov/bos/supdocs/29664.pdf.

———. 2006. (December 7). *Request for Approval of a Countywide Energy and Environmental Policy: Joint Recommendation with Chief Administrative Office, Department of Public Works and Regional Planning Department.* Los Angeles, CA: the County Planning Department. http://file.lacounty.gov/bos/supdocs/29480.pdf.

———. 2002 (September). *Development Planning for Storm Water Management: A Manual for the Standard Urban Storm Water Mitigation Plan* (SUSMP). Los Angeles, CA: Los Angeles County Department of Public Works.

Los Angeles, County of. Internal Services Department (LACISD). 2015 (June). Approval of Revised Board Policy Number 3.045 – Countywide Environmental Sustainability. Los Angeles, CA: LACISD. http://file.lacounty.gov/bos/supdocs/95081.pdf.

———. 2014 (May). Energy & Environmental Policy Report #9. Los Angeles, CA: LACISD. http://file.lacounty.gov/green/cms1_213023.pdf

Los Angeles County Metropolitan Transportation Authority (Metro). 2014 (October). Metro Complete Streets Policy. http://media.metro.net/projects_studies/sustainability/images/policy_completestreets_2014-10.pdf

———. 2012 (December). Metro Countywide Sustainability Planning Policy & Implementation Plan. http://media.metro.net/projects_studies/sustainability/images/countywide_sustainability_planning_policy.pdf

Massachusetts et al. vs. Environmental Protection Agency (Massachusetts), 549 U.S. 497 (2007).

National Aeronautics and Space Administration (NASA). 2015 (January 16, Posted). NASA, NOAA Find 2014 Warmest Year in Modern Record. New York, NY: NASA, the

Goddard Institute for Space Studies. http://www.giss.nasa.gov/research/news/20150116/.

National Highway Traffic Safety Administration (NHTSA). 2009. *Average Fuel Economy Standards Passenger Cars and Light Trucks Model Year 2011, Final Rule.* 75 Fed. Reg. 25324.

National Oceanic and Atmospheric Administration (NOAA). 2002 (February14). President Announces Clear Skies & Global Climate Change Initiatives. Oxnard, CA: NOAA: http://georgewbush-whitehouse.archives.gov/news/releases/2002/02/20020214-5.html.

National Research Council of the National Academies (2012). June. Committee on Sea Level Rise in California, Oregon, and Washington; Board on Earth Sciences and Resources and Ocean Studies Board; Division of Earth and Life Studies. Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future. http://www.nap.edu/catalog.php?record_id=13389.

Office of Planning and Research (OPR). 2008 (June). *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review.* Sacramento, CA: OPR.

Official California Legislative Information. 2009. AB 118 Current Bill Status. Sacramento, CA: Legislative Counsel.

Psomas. 2017 (April). *Centennial Wastewater Treatment Report.* Costa Mesa, CA: Psomas (Appendix 5.19-A).

Pacific Coast Collaborative. 2013 (October). *Pacific Coast Action Plan on Climate and Energy*, October 18, 2013. Pacific Coast Collaborative. http://www.pacificcoastcollaborative.org/Documents/Pacific%20Coast%20Climate%20Action%20Plan.pdf.

Regional Targets Advisory Committee. 2009. *Recommendations of the Regional Targets Advisory Committee Pursuant to Senate Bill 375*. https://www.arb.ca.gov/cc/sb375/rtac/report/092909/finalreport.pdf.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2009a. (December 17). Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. Fresno, CA: SJVAPCD. https://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf.

————. 2009b. (December 17) Final Staff Report: Addressing Greenhouse Gas Emissions Impacts Under the California Environmental Quality Act. Fresno, CA: SJVAPCD. https://www.valleyair.org/Programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%2017%202009.pdf.

Sea Level Rise Task Force. 2010. Sea Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), Ocean Protection Council's Science Advisory Team and the California Ocean Science Trust. *State of California Sea-Level Rise Interim Guidance Document.*

South Coast Air Quality Management District (SCAQMD). 2010. Greenhouse Gas CEQA Significance Thresholds Working Group. *September 28, 2010 Presentation.* Diamond Bar, CA: SCAQMD.

———. 2008 (November 26, last update). *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans.* Diamond Bar, CA: SCAQMD. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2.

Southern California Association of Governments (SCAG). 2016a (April). The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy. A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life. http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

———. 2016b (April 7). Final 2016 RTP/SCS – Demographics and Growth Forecast Appendix. Los Angeles, CA: SCAG. http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS_DemographicsGrowthForecast.pdf.

———. 2016c (April 13). 2016-2040 RTP/SCS Final Growth Forecast by Jurisdiction. Los Angeles, CA: SCAG. http://www.scag.ca.gov/Documents/2016_2040RTPSCS_FinalGrowthForecastbyJurisdiction.pdf.

———. 2012a. (April). 2012-2035 Regional Transportation Plan. Los Angeles, CA: SCAG. http://rtpscs.scag.ca.gov/Documents/2012/final/f2012RTPSCS.pdf.

———. 2012b (April). 2012 Regional Transportation Plan/Sustainable Communities Strategy - Growth Forecast Appendix. Los Angeles, CA: SCAG. http://rtpscs.scag.ca.gov/Documents/2012/final/SR/2012fRTP_GrowthForecast.

———. 2012c. 2012 Adopted Growth Forecast (an excel spreadsheet). Los Angeles, CA: SCAG. http://gisdata.scag.ca.gov/Pages/SocioEconomicLibrary.aspx?keyword=Forecasting.

United Nations Framework Convention on Climate Change (UN). 2016 (access date, April 11). Paris Agreement. Bonn, Germany: UN. http://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf.

———. 1997. *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, December 11, 1997. (Available at http://unfccc.int/essential_background/kyoto_protocol/items/1678.php.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Earth System Research Laboratory, Global Monitoring Division (ESRL) 2017 (May 5, last updated). Trends in Atmospheric Carbon Dioxide. Boulder, CO: ESRL. https://www.esrl.noaa.gov/gmd/ccgg/trends/global.html#global_data.

United States Environmental Protection Agency (USEPA). 2017 (May, last accessed). *Learn about Clean Diesel* webpage. https://www.epa.gov/cleandiesel/learn-about-clean-diesel.

————. 2016 (April 18, last updated). U.S. Greenhouse Gas Inventory Report: 1990–2014). Washington, D.C.: USEPA. https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport.html.

————. 2011. *EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium-and Heavy-Duty Vehicles*, August 2011. nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100BOT1.TXT.

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

————. 2010b (April). Regulatory Announcement: EPA and NHTSA Finalize Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks. Washington, D.C.: USEPA. http://www.aie.org.au/AIE/Documents/US_Vehicle_emission_standards_420f10014.pdf.

————. 2010c. (November 30). *Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles; Proposed Rule*. 75 Fed. Reg. 74152.

————. 2010d. (January 24). *EPA, DOT and California Align Timeframe for Proposing Standards for Next Generation of Clean Cars. http://yosemite.epa.gov/opa/admpress.nsf/1e5ab1124055f3b28525781f0042ed40/6f34c8d6f2b11e5885257822006f60c0!OpenDocument*

————. 2010e. *Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles; Proposed Rule.* 75 Fed. Reg. 81952.

————. 2009a. (December 18, last update). *Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act.* Washington, D.C.: USEPA. https://19january2017snapshot.epa.gov/sites/production/files/2016-08/documents/federal_register-epa-hq-oar-2009-0171-dec.15-09.pdf.

————. 2009b. *California Greenhouse Gas Waiver Granted.* 74 Fed. Reg. 32744.

————. 2009c. (October 30). *Mandatory Reporting of Greenhouse Gases, Final Rule*. 74 Fed. Reg. 56260.

U.S. Environmental Protection Agency and U.S. Department of Transportation, National Highway Traffic Safety Administration (USEPA and NHTSA). 2012 (October 15). 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards. Federal Register (Volume 77, No. 199, pp. 62623–63200). Washington, D.C.: USEPA and NHTSA.

United States Energy Information Administration (USEIA). 2009. *Residential Energy Consumption Survey: Public Use Microdata*. Washington, D.C.: Dept. of Energy. https://www.eia.gov/consumption/residential/data/2009/.

Whitehouse. 2010 (May 21). *Improving Energy Security, American Competitiveness and Job Creation, and Environmental Protection Through a Transformation of Our Nation's Fleet of Cars and Trucks*. 75 Fed. Reg. 29399.

———. 2009 (February 14). *President Announces Clear Skies & Global Climate Change Initiatives*. Washington, D.C. Whitehouse. http://georgewbush-whitehouse.archives.gov/news/releases/2002/02/20020214-5.html.

World Resources Institute (WRI). 2016. Climate Analysis Indicators Tool (CAIT) version 9.0. Washington, D.C.: WRI. http://cait.wri.org/.

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