4.7 GREENHOUSE GAS EMISSIONS

This section provides an overview of greenhouse gas (GHG) emissions in the Project Area and evaluates the construction and operational impacts associated with the Proposed Plan. Supporting data and calculations are included in Appendix G of the Draft EIR. Topics addressed include short-term construction and long-term operational emissions.

GHG emissions refer to a group of emissions that are generally believed to affect global climate conditions. The greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes. The glass panes in a greenhouse let heat from sunlight in and reduce the amount of heat that escapes. GHGs, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), keep the average surface temperature of the Earth close to 60 degrees Fahrenheit (°F). Without the natural greenhouse effect, the Earth's surface would be about 61°F cooler.[1]

In addition to CO_2, CH_4, and N_2O, GHGs include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), black carbon (black carbon is the most strongly light-absorbing component of particulate matter emitted from burning fuels such as coal, diesel, and biomass), and water vapor. CO_2 is the most abundant pollutant that contributes to climate change through fossil fuel combustion. The other GHGs are less abundant but have higher global warming potential than CO_2. To account for this higher potential, emissions of other GHGs are frequently expressed in the equivalent of CO_2, denoted as "CO_2e." CO_2e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential (GWP) of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. **Table 4.7-1** presents the most common GHGs with their atmospheric residence times and associated GWP values.

TABLE 4.7-1: COMMON GREENHOUSE GASES AND PROPERTIES OF ATMOSPHERIC CHEMISTRY

Pollutant	Lifetime (Years) /a/	Global Warming Potential (20-Year) /b/	Global Warming Potential (100-Year) /b/
Carbon Dioxide	100	1	1
Nitrous Oxide	121	264	265
Nitrogen Trifluoride	500	12,800	16,100
Sulfur Hexafluoride	3,200	17,500	23,500
Perfluorocarbons	3,000-50,000	5,000-8,000	7,000-11,000
Black Carbon	days to weeks	270-6,200	100-1,700
Methane	12	84	28
Hydrofluorocarbons	Uncertain	100-11,000	100-12,000

/a/ Lifetime refers to the approximate amount of time it would take for the anthropogenic increment to an atmospheric pollutant concentration to return to its natural level as a result of either being converted to another chemical compound or being taken out of the atmosphere via a sink.
/b/ The United States primarily uses the 100-year GWP as a measure of the relative impact of different GHGs. However, the scientific community has developed a number of other metrics that could be used for comparing one GHG to another. These metrics may differ based on timeframe, the climate endpoint measured, or the method of calculation. For example, the 20-year GWP is sometimes used as an alternative to the 100-year GWP. Just like the 100-year GWP is based on the energy absorbed by a gas over 100 years, the 20-year GWP is based on the energy absorbed over 20 years. This 20-year GWP prioritizes gases with shorter lifetimes, because it does not consider impacts that happen more than 20 years after the emissions occur. Because all GWPs are calculated relative to CO_2, GWPs based on a shorter timeframe will be larger for gases with lifetimes shorter than that of CO_2, and smaller for gases with lifetimes longer than CO_2.
SOURCE: California Air Resources Board, *First Update to the Climate Change Scoping Plan*, May 2014.

[1]California Environmental Protection Agency Climate Action Team, *Climate Action Report to Governor Schwarzenegger and the California Legislator*, March 2006.

REGULATORY FRAMEWORK

International, federal, state and local laws, regulations, plans, and guidelines that are potentially applicable to the Proposed Plan are summarized below.

INTERNATIONAL

U.S.–China Climate Agreement. In November 2014, the United States and China made a joint announcement to cooperate on combating climate change and promoting clean energy. In the United States, President Barack Obama announced a climate target to reduce GHG emissions by 26 to 28 percent below 2005 levels by 2025. In China, President Xi Jinping announced a climate target to reduce peak CO_2 emissions by 2030 and to increase the renewable energy share across all sectors to 20 percent by 2030. China will need to build an additional 800 to 1,000 gigawatts of nuclear, wind, solar, and other zero emission generation capacity by 2030 to reach this target. Together, the United States and China have agreed to: expand joint clean energy research and development at the U.S.-China Clean Energy Research Center (CERC), advance major carbon capture, use and storage demonstrations, enhance cooperation on HFCs, launch a climate-smart/low-carbon cities initiative, promote trade in green goods, and demonstrate clean energy on the ground.[2]

Paris United Nations Framework Convention on Climate Change. A new international climate change agreement was adopted at the Paris United Nations Framework Convention on Climate Change conference in December 2015. The last two climate conferences in Warsaw (2013) and Lima (2014) decided that countries were to submit their proposed emissions reduction targets for the 2015 conference as "intended nationally determined contributions" prior to the Paris conference. The European Union has committed to an economy-wide, domestic GHG reduction target of 40 percent below 1990 levels by 2030. The United States has set its intended nationally determined contribution to reduce its GHG emissions by 26 to 28 percent below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28 percent. These targets are set with the goal of limiting global temperature rise to well below 2 degrees Celsius and getting to the 80 percent emission reduction by 2050.

FEDERAL

The federal government's stance on climate change regulation is in flux under the current Presidential administration. For example, President Trump has signed an executive order announcing a plan to withdraw the U.S. from the Paris Climate Accord at the earliest possible date (although under the terms of the Paris Climate Accord, the withdrawal process can take no less than four years from the initial date of adoption).[3] The following discussion presents court decisions, legislation, and policies pertaining to GHG emissions that are currently in effect.

Supreme Court Ruling. The U.S. Supreme Court ruled in *Massachusetts v. Environmental Protection Agency, 127 S. Ct. 1438 (2007)*, that CO_2 and other GHGs are pollutants under the Clean Air Act (CAA), which the U.S. Environmental Protection Agency (USEPA) must regulate if it determines they pose an endangerment to public health or welfare. On December 7, 2009, the USEPA Administrator made two distinct findings: 1) the current and projected concentrations of the six key GHGs in the atmosphere (i.e., CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) threaten the public health and welfare of current and future

[2]The White House, *Fact Sheet: U.S.-China Joint Announcement on Climate Change and Clean Energy Cooperation*, November 11, 2014.

[3]United Nations Framework Convention on Climate Change, *Paris Agreement – Article 28*, November 2015.

generations; and 2) the combined emissions of these GHGs from motor vehicle engines contribute to GHG pollution which threatens public health and welfare.

On June 23, 2014, the U.S. Supreme Court ruled in *Utility Air Regulatory Group. v. EPA* that the USEPA exceeded its statutory authority under the CAA when it determined that stationary source emissions of GHGs would trigger permitting obligations under the Prevention of Significant Deterioration (PSD) program and Title V of the CAA. The Court, however, upheld those portions of USEPA's rulemaking that require a source to apply best available control technology (BACT) to GHG emissions where the source would otherwise trigger PSD permitting on account of its emissions of other pollutants. The Supreme Court's decision was limited to USEPA's regulation of GHG emissions under the PSD and Title V provisions of the CAA, and it left unanswered other questions regarding USEPA's permitting and BACT authority under the PSD program, and the USEPA's efforts to regulate GHG emissions from stationary sources.

Energy Independence and Security Act. The Energy Independence and Security Act of 2007 includes several key provisions that will increase energy efficiency and the availability of renewable energy, which will reduce GHG emissions as a result. First, this act sets a Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel by 2022.[4] Second, this act increases Corporate Average Fuel Economy Standards to require a minimum average fuel economy of 35 miles per gallon for the combined fleet of cars and light trucks by 2020. Third, this act includes a variety of new standards for lighting and for residential and commercial appliance equipment. The equipment includes residential refrigerators, freezers, refrigerator-freezers, metal halide lamps, and commercial walk-in coolers and freezers.

National Fuel Efficiency Policy. On May 19, 2009, President Barack Obama announced a new National Fuel Efficiency Policy aimed at increasing fuel economy and reducing GHG pollution.[5] This policy is expected to increase fuel economy by more than five percent by requiring a fleet-wide average of 35.5 miles per gallon by 2016 starting with model year 2012.

Fuel Economy Standards. On September 15, 2009, the USEPA and the Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) issued a joint proposal to establish a national program consisting of new standards for model year 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. The proposed standards would be phased in and would require passenger cars and light-duty trucks to comply with a declining emissions standard. In 2012, passenger cars and light-duty trucks would have to meet an average emissions standard of 295 grams of CO_2 per mile and 30.1 miles per gallon. By 2016, the vehicles would have to meet an average standard of 250 grams of CO_2 per mile and 35.5 miles per gallon.[6] The final standards were adopted by USEPA and DOT on April 1, 2010.

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA (42 United States Code Section 7521):

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations.

[4]According to the United States Energy Information Administration, 36 billion gallons of fuel represents approximately 26 percent of current gasoline consumption.

[5]The White House, Office of the Press Secretary, http://www.whitehouse.gov/the_press_office/President-Obama-Announces-National-Fuel-Efficiency-Policy/, May 19, 2009.

[6]USEPA, *EPA and NHTSA Propose Historic Nation Program*, 2009.

- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

While these findings do not impose additional requirements on industry or other entities, this action is a prerequisite to finalizing USEPA's proposed GHG emissions standards for light-duty vehicles, which were jointly proposed by USEPA and NHTSA.

Heavy-Duty Vehicle Program. The Heavy-Duty Vehicle Program was adopted on August 9, 2011 to establish the first fuel efficiency requirements for medium- and heavy-duty vehicles beginning with the model year 2014.

Executive Order 13693. Issued on June 10, 2015, Executive Order 13693 — Planning for Federal Sustainability in the Next Decade — revokes multiple prior Executive Orders and memoranda including Executive Order 13514. The goal of Executive Order 13693 is to maintain federal leadership in sustainability and GHG emission reductions. This Executive Order outlines forward-looking goals for federal agencies in the area of energy, climate change, water use, vehicle fleets, construction, and acquisition. Federal agencies shall, where life-cycle cost-effective, beginning in 2016:

- Reduce agency building energy intensity as measured in British Thermal Units per square foot by 2.5 percent annually through 2025;
- Improve data center energy efficiency at agency buildings;
- Ensure a minimum percentage of total building electric and thermal energy shall be from clean energy sources;
- Improve agency water use efficiency and management (including storm water management); and
- Improve agency fleet and vehicle efficiency and management by achieving minimum percentage GHG emission reductions.

Executive Order 13783. Issued on March 28, 2017, Executive Order 13783 — Promoting Energy Independence and Economic Growth — revokes multiple prior Executive Orders and memoranda including Executive Order 13653, the Power Sector Carbon Pollution Standards, Presidential Memorandum – Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment, and Presidential Memorandum – Climate Change and National Security, as well as other federal reports and provisions. Executive Order 13783 represents a reversal on federal climate policy relative to the work of previous administrations and its objective is to reduce the regulatory framework applicable to GHG emissions to spur fossil fuel production. This Executive Order "established a national policy to promote the clean and safe development of our energy resources while reducing unnecessary regulatory burdens."[7] The order also "directs the USEPA to review existing regulations, orders, guidance documents and policies that potentially burden the development or use of domestically produced energy resources." Future changes to national policy on GHG emissions as a result of Executive Order 13783 cannot be predicted at this time.

Executive Order 13795. Issued on April 28, 2017, Executive Order 13795 — Implementing an America-First Offshore Energy Strategy — directs the "policy of the United States to encourage energy exploration and production, including on the Outer Continental Shelf, in order to maintain the Nation's position as a global energy leader and foster energy security and resilience for the benefit of the American people, while ensuring that any such activity is safe and environmental responsible."[8] The objective of the order is to expand the opportunity for offshore energy development by removing restrictions on resource exploration

[7]Federal Register, *Executive Order 13783 of March 28, 2017: Promoting Energy Independence and Economic Growth*, Vol. 82, No. 61, March 21, 2017.

[8]Federal Register, *Executive Order 13795 of April 28, 2017: Implementing an America-First Offshore Energy Strategy*, Vol. 82, No. 84, May 3, 2017.

and extraction. This Executive Order prioritizes the development of offshore energy resources over the protection of National Marine Sanctuaries and authorizes the review and potential revision or withdrawal of the Bureau of Ocean Energy Management's Proposed Rule entitled "Air Quality Control, Reporting, and Compliance," 81 Federal Register 19718 and any other related rules and guidance. The implications of implementing Executive Order 13795 with regards to the national GHG emissions inventory cannot be reasonably determined at this time.

STATE

California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Located in Title 24, Part 6 of the California Code of Regulations and commonly referred to as "Title 24," these energy efficiency standards were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.[9] The California Energy Commission adopted the 2008 changes to the Building Energy Efficiency Standards to respond to the mandates of Assembly Bill (AB) 32 and to pursue California energy policy that energy efficiency is the resource of first choice for meeting California's energy needs. The most recent update to Title 24 is the 2016 Standards which improve upon the 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2016 Standards went into effect on January 1, 2017. The Standards are updated on an approximately three-year cycle.

Assembly Bill 1493 (Pavley I). AB 1493 (referred to as Pavley I), adopted in 2002, required the California Air Resource Board (CARB) to develop and adopt standards for vehicle manufacturers to reduce GHG emissions coming from passenger vehicles and light-duty trucks at a "maximum feasible and cost-effective reduction" by January 1, 2005. Pavley I took effect for model years starting in 2009 and extending to 2016 and the Low Emission Vehicle (LEV) III GHG will cover 2017 to 2025. It is estimated that the standard will reduce climate change emissions from the vehicle fleet by 30 percent in 2016 compared to the emissions in the same year without the standards.[10]

Senate Bill 1078 (SB 1078), Senate Bill 107 (SB 107), and Executive Order S-14-08 (Renewables Portfolio Standard). Signed on September 12, 2002, SB 1078 required California to generate 20 percent of its electricity from renewable energy by 2017. SB 107, signed on September 26, 2006 changed the due date for this goal from 2017 to 2010, which was achieved by the state. On November 17, 2008, Executive Order S-14-08, which established a Renewables Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Increased use of renewable energy sources will decrease California's reliance on fossil fuels, reducing emissions of GHG from the energy sector.

Executive Order S-3-05. On June 1, 2005, Executive Order S-3-05 set the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Executive Order S-3-05 calls for the Secretary of California Environmental Protection Agency (Cal-EPA) to be responsible for coordination of state agencies and progress reporting. A recent California Energy Commission report concludes, however, that the primary strategies to achieve this target should be major "decarbonization" of electricity supplies and fuels, and major improvements in energy efficiency.[11]

[9]California Energy Commission, *2016 Energy Efficiency Standards for Residential and Nonresidential Buildings, Title 24, Part 6, of the California Code of Regulations*, June 2015.
[10]CARB, *Clean Air Standards - Pavley, Assembly Bill 1493*, May 6, 2013.
[11]California Energy Commission, *California's Energy Future – The View to 2050*, May 2011.

In response to the Executive Order S-3-05, the Secretary of the Cal-EPA created the Climate Action Team (CAT). California's CAT originated as a coordinating council and included the Secretaries of the Natural Resources Agency, and the Department of Food and Agriculture, and the Chairs of the CARB, Energy Commission, and Public Utilities Commission. The original council was an informal collaboration between the agencies to develop potential mechanisms for reductions in GHG emissions in the State of California.

The original mandate for the CAT was to develop proposed measures to meet the emission reduction targets set forth in E.O. S-3-05. The CAT has since expanded and currently has members from 18 state agencies and departments. The CAT also has ten working groups, which coordinate policies among their members. The working groups and their major areas of focus are:

- Agriculture: Focusing on opportunities for agriculture to reduce GHG emissions through efficiency improvements and alternative energy projects, while adapting agricultural systems to climate change;
- Biodiversity: Designing policies to protect species and natural habitats from the effects of climate change;
- Energy: Reducing GHG emissions through extensive energy efficiency policies and renewable energy generation;
- Forestry: Coupling GHG mitigation efforts with climate change adaptation related to forest preservation and resilience, waste to energy programs and forest offset protocols;
- Land Use and Infrastructure: Linking land use and infrastructure planning to efforts to reduce GHG from vehicles and adaptation to changing climatic conditions;
- Oceans and Coastal: Evaluating the effects of sea level rise and changes in coastal storm patterns on human and natural systems in California;
- Public Health: Evaluating the effects of GHG mitigation policies on public health and adapting public health systems to cope with changing climatic conditions;
- Research: Coordinating research concerning impacts of and responses to climate change in California;
- State Government: Evaluating and implementing strategies to reduce GHG emissions resulting from state government operations; and
- Water: Reducing GHG impacts associated with the state's water systems and exploring strategies to protect water distribution and flood protection infrastructure.

The CAT is responsible for preparing reports that summarize the state's progress in reducing GHG emissions. The CAT Report was published in December 2010. The CAT Report discusses mitigation and adaptation strategies, state research programs, policy development, and future efforts.

Senate Bill 1 (SB 1) and Senate Bill 1017 (SB 1017) (Million Solar Roofs). SB 1 and SB 1017, enacted in August 2006, set a goal to install 3,000 megawatts of new solar capacity by 2017 - moving the state toward a cleaner energy future and helping lower the cost of solar systems for consumers. The Million Solar Roofs Program is a ratepayer-financed incentive program aimed at transforming the market for rooftop solar systems by driving down costs over time. It provides up to $3.3 billion in financial incentives that decline over time.

Assembly Bill 32 (AB 32). In September 2006, the California Global Warming Solutions Act of 2006, also known as AB 32, was signed into law. AB 32 focuses on reducing GHG emissions in California and requires CARB to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020. CARB initially determined that the total statewide aggregated GHG 1990 emissions level and 2020 emissions limit was 427 million metric tons of CO_2e. The 2020 target reduction was estimated to be 174 million metric tons of CO_2e.

To achieve the goal, AB 32 mandates that CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary sources, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. Because the intent of AB 32 is to limit 2020 emissions to the equivalent of 1990, it is expected that the regulations

would affect many existing sources of GHG emissions and not just new general development projects. SB 1368, a companion bill to AB 32, requires the California Public Utilities Commission (CPUC) and the California Energy Commission to establish GHG emission performance standards for the generation of electricity. These standards will also apply to power that is generated outside of California and imported into the state.

AB 32 charges CARB with the responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. On June 1, 2007, CARB adopted three discrete early action measures to reduce GHG emissions. These measures involved complying with a low carbon fuel standard, reducing refrigerant loss from motor vehicle air conditioning maintenance, and increasing methane capture from landfills.[12] On October 25, 2007, CARB tripled the set of previously approved early action measures. The approved measures include improving truck efficiency (i.e., reducing aerodynamic drag), electrifying port equipment, reducing PFCs emissions from the semiconductor industry, reducing propellants in consumer products, promoting proper tire inflation in vehicles, and reducing SF_6 emissions from the non-electricity sector.

The CARB AB 32 Scoping Plan (Scoping Plan) contains the main strategies to achieve the 2020 emissions cap. The Scoping Plan was developed by CARB with input from CAT and proposes a comprehensive set of actions designed to reduce overall carbon emissions in California, improve the environment, reduce oil dependency, diversify energy sources, and enhance public health while creating new jobs and improving the state economy. The GHG reduction strategies contained in the Scoping Plan include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. Key approaches for reducing GHG emissions to 1990 levels by 2020 include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewable electricity standard 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;
- Establishing targets for transportation-related GHG emissions for regions throughout the state, and pursuing policies and incentives to achieve those targets; and
- Adopting and implementing measures to reduce transportation sector emissions.

CARB has adopted the First Update to the AB 32 Scoping Plan.[13] This Update identifies the next steps for California's leadership on climate change. The First Update to the initial AB 32 Scoping Plan describes progress made to meet the near-term objectives of AB 32 and defines California's climate change priorities and activities for the next several years. It also frames activities and issues facing the state as it develops an integrated framework for achieving both air quality and climate goals in California beyond 2020. Specifically, the Update covers a range of topics:

- An update of the latest scientific findings related to climate change and its impacts, including short-lived climate pollutants.
- A review of progress-to-date, including an update of Scoping Plan measures and other state, federal, and local efforts to reduce GHG emissions in California.
- Potential technologically feasible and cost-effective actions to further reduce GHG emissions by 2020.
- Recommendations for establishing a mid-term emissions limit that aligns with the state's long-term goal of an emissions limit 80 percent below 1990 levels by 2050.
- Sector-specific discussions covering issues, technologies, needs, and ongoing state activities to significantly reduce emissions throughout California's economy through 2050.

[12]CARB, *Proposed Early Action Measures to Mitigate Climate Change in California*, April 20, 2007.
[13]CARB, *First Update to the Climate Change Scoping Plan*, May 2014.

As discussed above, in December 2007, CARB approved a total statewide GHG 1990 emissions level and 2020 emissions limit of 427 million metric tons of CO_2e. As part of the Update, CARB revised the 2020 statewide limit to 431 million metric tons of CO_2e, an approximately one percent increase from the original estimate. The revised estimate includes incorporation of the Pavley standards in the business-as-usual (BAU) forecast. The 2020 BAU forecast in the Update is 509 million metric tons of CO_2e. The state would need to reduce those emissions by 15 percent to meet the 431 million metric tons of CO_2e 2020 limit.

Senate Bill 1368 (SB 1368). SB 1368, adopted September 19, 2006, directs the California Energy Commission and the CPUC to adopt a performance standard for GHG emissions for the future electricity used in California, regardless of whether it is generated in-state or purchased from other states.

Executive Order S-1-07, the Low Carbon Fuel Standard. On January 18, 2007, Executive Order S-1-07 was issued requiring a reduction of at least ten percent in the carbon intensity of California's transportation fuels by 2020. Regulatory proceedings and implementation of the Low Carbon Fuel Standard are CARB's responsibility. The Low Carbon Fuel Standard has been identified by CARB as a discrete early action item in the CARB Scoping Plan. CARB expects the Low Carbon Fuel Standard to achieve the minimum ten percent reduction goal; however, many of the early action items outlined in the Scoping Plan work in tandem with one another. To avoid the potential for double-counting emission reductions associated with AB 1493 (see previous discussion), the Scoping Plan has modified the aggregate reduction expected from the Low Carbon Fuel Standard to 9.1 percent.

Assembly Bill 811 (AB 811). AB 811, enacted July 21, 2008, authorizes California cities and counties to designate districts within which willing property owners may enter into contractual assessments to finance the installation of renewable energy generation and energy efficiency improvements that are permanently fixed to the property.

Senate Bill 375 (SB 375). SB 375, adopted in September 30, 2008, provides a means for achieving AB 32 goals through the reduction in emissions by cars and light trucks. SB 375 requires Regional Transportation Plans (RTPs) prepared by Metropolitan Planning Organizations (MPOs) to include Sustainable Communities Strategies (SCSs). In adopting SB 375, the Legislature found that improved coordination between land use planning and transportation planning is needed in order to achieve the GHG emissions reduction target of AB 32. Further, the staff analysis for the bill prepared for the Senate Transportation and Housing Committee's August 29, 2008 hearing on SB 375 began with the following statement: "According to the author, this bill will help implement AB 32 by aligning planning for housing, land use, transportation and greenhouse gas emissions for the 17 MPOs in the state." Under the Sustainable Communities Act, CARB sets regional targets for GHG emissions reductions from passenger vehicle use. CARB has set the following reduction targets for SCAG: reduce per capita eight percent of GHG emissions below 2005 levels by 2020 and 13 percent below 2005 levels by 2035.

Executive Order S-13-08. On November 14, 2008, Executive Order S-13-08 was signed to direct California to develop methods for adapting to climate change impacts through preparation of a statewide plan. In response to this Executive Order, the California Natural Resources Agency coordinated with ten state agencies, multiple scientists, a consulting team, and stakeholders to develop the first statewide, multi-sector adaptation strategy in the country. The resulting report, 2009 California Climate Adaptation Strategy, summarizes the best-known science to assess the vulnerability of the state to climate change impacts, and outlines possible solutions that can be implemented within and across state agencies to promote resiliency. This strategy is the first step in an evolving process to reduce California's vulnerability to climate change impacts.

Adaptation refers to efforts that prepare the state to respond to the impacts of climate change – adjustments in natural or human systems to actual or expected climate changes to minimize harm or take advantage of beneficial opportunities. California's ability to manage its climate risks through adaptation depends on a number of critical factors. These include its baseline and projected economic resources, technology, infrastructure, institutional support and effective governance, public awareness, access to the best available scientific information, sustainably-managed natural resources, and equity in access to these resources.

CEQA Guidelines Section 15064.4. Requires that, in performing environmental review under CEQA, an agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. The lead agency has discretion to determine whether to use a model or methodology to quantify GHG emissions, and which model or methodology to use, or rely on a qualitative analysis or performance-based standards. The lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment.

- The extent to which the project may increase or reduce GHG emissions as compared to the existing 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. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

Senate Bill 743 (SB 743). SB 743, adopted September 27, 2013, encourages land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT), which contribute to GHG emissions, as required by AB 32. Key provisions of SB 743 include reforming aesthetics and parking CEQA analysis for certain urban infill projects and eliminating the measurement of auto delay, including Level of Service (LOS), as a metric that can be used for measuring traffic impacts in transit priority areas. SB 743 requires the Governor's Office of Planning and Research (OPR) to develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of projects within transit priority areas that promote the "…reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." It also allows OPR to develop alternative metrics outside of transit priority areas.

California Green Building Standard Code (CalGreen). The California Green Building Standard Code, referred to as CalGreen, is the first statewide Green Building Code. It was developed to provide a consistent approach for green building within California and took effect January 2011. CalGreen lays out minimum requirements for newly constructed buildings in California, which will reduce GHG emissions through improved efficiency and process improvements. It requires builders to install plumbing that cuts indoor water use by as much as 20 percent, to divert 50 percent of construction waste from landfills to recycling, and to use low-pollutant paints, carpets, and floors. CalGreen is updated every three years.

Senate Bills 1078/107/X 1-2, Renewables Portfolio Standard and Renewable Energy Resources Act. SB 1078 and 107, California's Renewables Portfolio Standard, obligated investor-owned energy service providers and Community Choice Aggregations to procure an additional one percent of retail sales per year from eligible renewable sources until 20 percent was reached (by 2010). The California Public Utilities Commission and California Energy Commission are jointly responsible for implementing the program. SB X 1-2, called the California Renewable Energy Resources Act, obligates all California electricity providers to obtain at least 33 percent of their energy from renewable resources by 2020.

Executive Order B-30-15. On April 29, 2015, Governor Brown issued Executive Order B-30-15, stating a new statewide policy goal to reduce GHG emissions 40 percent below their 1990 levels by 2030. The Executive Order establishes GHG emissions reduction targets to reduce emissions to 80 percent below 1990 levels by 2050 and sets an interim target of emissions reductions for 2030 as being necessary to guide regulatory policy and investments in California and put California on the most cost-effective path for long-term emissions reductions. The Executive Order orders "all state agencies with jurisdiction over sources of [GHG] emissions [to] ... implement measures, pursuant to statutory authority, to achieve reductions of [GHG] emissions to meet the 2030 and 2050 [GHG] emissions reductions targets."

Executive Order B-30-15 directs CARB to "update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent" ($MMTCO_2e$). It directs the Natural Resources Agency to update "Safeguarding California" (the state's climate adaptation strategy) every three years, as specified; directs state agencies to "take climate change into account in their planning and investment decisions, and employ full life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives;" and orders the "State's Five-Year Infrastructure Plan [to] take current and future climate change impacts into account in all infrastructure projects." Among its other directives, the Executive Order provides that "state agencies' planning and investment shall be guided by the ... principle that priority should be given to actions that both build climate preparedness and reduce GHG emissions."

Senate Bill 32 (SB 32). On September 8, 2016, California signed into law SB 32, which adds Section 38566 to the Health and Safety Code and requires a commitment to reducing statewide GHG emissions by 2020 to 1990 levels and by 2030 to 40 percent less than 1990 levels. SB 32 was passed with companion legislation AB 197, which provides additional direction for developing the Scoping Plan. Recently, CARB released The Proposed 2017 Climate Change Scoping Plan Update (Proposed 2017 Update), which outlines the proposed framework of action for achieving California's new SB 32 2030 GHG target: a 40 percent reduction in GHG emissions by 2030 relative to 1990 levels.[14] The 2030 target is intended to ensure that California remains on track to achieve the goal set forth by Executive Order B-30-15 to reduce statewide GHG emissions by 2050 to 80 percent below 1990 levels. The Proposed 2017 Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water.

Through a combination of data synthesis and modeling, CARB determined that the target statewide 2030 emissions limit is 260 MMTCO2e, and that further commitments will need to be made to achieve an additional reduction of 50 MMTCO2e beyond current policies and programs. Key elements of the Proposed 2017 Update include a proposed 20 percent reduction in GHG emissions from refineries and an expansion of the Cap-and-Trade program to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2050 limit set forth by Executive Order B-30-15. The Proposed 2017 Update indicates that stronger SB 375 reduction targets are needed to meet the state's 2030 and 2050 goals and that, "[m]ore needs to be done to fully exploit synergies with emerging mobility solutions like ridesourcing and more effective infrastructure planning to anticipate and guide the necessary changes in travel behavior, especially among millennials. Stronger SB 375 reduction targets will likely encourage further densification around transit infrastructure.

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

REGIONAL

Southern California Association of Governments (SCAG) 2016–2040 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS). SCAG is the MPO for the six-county region that includes Los Angeles, Orange, Riverside, Ventura, San Bernardino and Imperial counties. The 2016–2040 RTP/SCS includes commitments to reduce emissions from transportation sources to comply with SB 375. Goals and policies included in the 2016–2040 RTP/SCS to reduce GHG emissions consist of adding density in proximity to transit stations, mixed-use development and encouraging active transportation (i.e., non-motorized transportation such as bicycling). SCAG promotes the following policies and actions related to active transportation to help the region confront congestion and mobility issues and consequently reduce emissions:

- Implement Transportation Demand Management (TDM) strategies including integrating bicycling through folding bikes on buses programs, triple racks on buses, and dedicated racks on light and heavy rail vehicles;
- Encourage and support local jurisdictions to develop "Active Transportation Plans" for their jurisdiction if they do not already have one;
- Expand Compass Blueprint program to support member cities in the development of bicycle plans;
- Expand the Toolbox Tuesday's program to encourage local jurisdictions to direct enforcement agencies to focus on bicycling and walking safety to reduce multimodal conflicts;
- Support local advocacy groups and bicycle-related businesses to provide bicycle-safety curricula to the general public;
- Encourage children, including those with disabilities, to walk and bicycle to school;
- Encourage local jurisdictions to adopt and implement the proposed SCAG Regional Bikeway Network; and
- Support local jurisdictions to connect all of the cities within the SCAG region via bicycle facilities.

SB 375 requires CARB to develop regional CO_2 emission reduction targets, compared to 2005 emissions, for cars and light trucks only for 2020 and 2035 for each MPO. SB 375 also requires that each MPO prepare an Sustainable Community Strategy (SCS) as part of the Regional Transportation Plan (RTP) to reduce CO_2 by better aligning transportation, land use, and housing. For SCAG, the targets are to reduce per capita emissions 8 percent below 2005 levels by 2020 and 13 percent below 2005 levels by 2035.[15] The 2016–2040 RTP/SCS states that the region will meet or exceed the SB 375 per capita targets, lowering regional per capita GHG emissions (below 2005 levels) by eight percent by 2020 and 18 percent by 2035. The 2016–2040 RTP/SCS also states that regional 2040 per capita emissions would be reduced by 22 percent, although CARB has not established a 2040 per capita emissions target.

South Coast Air Quality Management District (SCAQMD). SCAQMD adopted a "Policy on Global Warming and Stratospheric Ozone Depletion" on April 6, 1990. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the AQMP. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy.

SCAQMD released draft guidance regarding interim CEQA GHG significance thresholds. SCAQMD proposed the use of a percent emission reduction target (e.g., 30 percent) to determine significance for commercial/residential projects that emit greater than 3,000 metric tons per year. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for stationary source/industrial projects where SCAQMD is the lead agency. However, SCAQMD has yet to adopt a GHG significance threshold for land use development or transportation projects and has formed a

[15]SCAG, *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy*, 2016.

GHG CEQA Significance Threshold Working Group to further evaluate potential GHG significance thresholds.

The GHG CEQA Significance Threshold Working Group is tasked with providing guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. Members of the working group included government agencies implementing CEQA and representatives from various stakeholder groups that will provide input to the SCAQMD staff on developing CEQA GHG significance thresholds. The Working Group discussed multiple methodologies for determining project significance. These methodologies included categorical exemptions, consistency with regional GHG budgets in approved plans, a numerical threshold, performance standards, and emissions offsets. The GHG CEQA Significance Threshold Working Group has not convened since 2008.

LOCAL

GreenLA Climate Action Plan. The City of Los Angeles has issued guidance promoting sustainable development to reduce GHG emissions citywide in the form of a Climate Action Plan (CAP). The objective of GreenLA is to reduce GHG emissions 35 percent below 1990 levels by 2030.[16] GreenLA identifies goals and actions designed to make the City a leader in confronting global climate change. The measures would reduce emissions directly from municipal facilities and operations and create a framework to address citywide GHG emissions. GreenLA lists various focus areas in which to implement GHG reduction strategies. Focus areas include energy, water, transportation, land use, waste, port, airport, and ensuring that changes to the local climate are incorporated into planning and building decisions. City goals for each focus area are identified as follows:

Energy
- Increase the generation of renewable energy;
- Encourage the use of mass transit;
- Develop sustainable construction guidelines;
- Increase citywide energy efficiency; and
- Promote energy conservation.

Water
- Decrease per capita water use to reduce electricity demand associated with water pumping and treatment.

Transportation
- Power the city vehicle fleet with alternative fuels; and
- Promote alternative transportation (e.g., mass transit and rideshare).

Other Goals
- Create a more livable City through land use regulations;
- Increase recycling;
- Reduce emissions generated by activity associated with the Port of Los Angeles and regional airports;
- Create more city parks, promoting the environmental economic sector; and
- Adapt planning and building policies to incorporate climate change policy.

In order to provide detailed information on action items discussed in GreenLA, the City published an implementation document titled ClimateLA.[17] ClimateLA presents the existing GHG inventory for the City, describes enforceable GHG reduction requirements, provides mechanisms to monitor and evaluate

[16]City of Los Angeles, *Green LA: An Action Plan to Lead the Nation in Fighting Global Warming*, May 2007.
[17]City of Los Angeles, *CLIMATELA Municipal Program Implementing the GreenLA Climate Action Plan*, 2008.

progress, and includes mechanisms that allow the plan to be revised in order to meet targets. By 2030, the plan aims to reduce GHG emissions by 35 percent from 1990 levels, which were estimated to be approximately 54.1 million metric tons.

Therefore, the City will need to lower annual GHG emissions to approximately 35.1 million metric tons per year by 2030. To achieve these reductions the City has developed strategies that focus on energy, water use, transportation, land use, waste, open space and greening, and economic factors. To reduce emissions from energy usage, ClimateLA proposes the following goals: increase the amount of renewable energy provided by the Los Angeles Department of Water and Power (LADWP); present a comprehensive set of green building policies to guide and support private sector development; reduce energy consumed by City facilities and utilize solar heating where applicable; and help citizens to use less energy. With regard to waste, ClimateLA sets the goal of reducing or recycling 70 percent of trash by 2015. With regard to open space and greening, ClimateLA includes the following goals: create 35 new parks; revitalize the Los Angeles River to create open space opportunities; plant one million trees throughout the City; identify opportunities to "daylight" streams; identify promising locations for stormwater infiltration to recharge groundwater aquifers; and collaborate with schools to create more parks in neighborhoods.

Sustainable City pLAn (pLAn). In addition to GreenLA, Mayor Eric Garcetti released Los Angeles's first-ever pLAn on April 8, 2015.[18] The pLAn is a roadmap to achieving short-term results and sets a path to strengthen and transform the City in future decades. Recognizing the risks posed by climate change, Mayor Garcetti set time-bound outcomes on climate action, most notably to reduce GHG emissions by 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050, all against a 1990 baseline. Through the completion and verification of the GHG inventory update, the City concluded that:

- The City accounted for approximately 36.2 million metric tons of CO_2e in 1990;
- The City's most recent inventory shows that emissions fell to 29 million metric tons of CO_2e in 2013; and
- Los Angeles' emissions are 20 percent below the 1990 baseline as of 2013, putting Los Angeles nearly halfway to the 2025 pLAn reduction target of 45 percent. In addition, the 20 percent reduction exceeds the 15 percent statewide goal listed in the First Update to the AB 32 Scoping Plan.

Green Building Program. The purpose of the City's Green Building Program is to reduce the use of natural resources, create healthier living environments and minimize the negative impacts of development on local, regional, and global ecosystems. The program consists of a Standard of Sustainability and Standard of Sustainable Excellence. The program addresses five key areas:

- Site: location, site planning, landscaping, storm water management, construction and demolition recycling;
- Water Efficiency: efficient fixtures, wastewater reuse, and efficient irrigation;
- Energy & Atmosphere: energy efficiency, and clean/renewable energy;
- Materials & Resources: materials reuse, efficient building systems, and use of recycled and rapidly renewable materials; and
- Indoor Environmental Quality: improved indoor air quality, increased natural lighting, and improved thermal comfort/control.

The Standard of Sustainability establishes a requirement for non-residential projects at or above 50,000 square feet of floor area, high-rise residential (above six stories) projects at or above 50,000 square feet of floor area, or low-rise residential (six stories or less) of 50 or more dwelling units within buildings of at least 50,000 square feet of floor area to meet the intent of the U.S. Green Building Council's Leadership

[18]City of Los Angeles, *Los Angeles Climate Action Report: Updated 1990 Baseline and 2013 Emissions Inventory Summary*, 2015.

in Energy and Environmental Design (LEED) Certified level. The Standard also applies to existing buildings that meet the minimum thresholds described above when redevelopment construction costs exceed a valuation of 50 percent of the existing building's replacement cost.

The voluntary Standard of Sustainable Excellence establishes an incentive program for projects that register with the LEED program, contract with a certified LEED professional, and can demonstrate how the project will achieve LEED certification at a Silver or higher level. These projects are eligible for priority processing services within the Department of City Planning and expedited services within the Bureau of Engineering. The Department of Building and Safety provides priority plan check processing and Priority Service Planning is offered by the LADWP.

Los Angeles Green Building Code. The City has adopted the Green Building Code to reduce the City's carbon footprint. The Green Building Code is applicable to new buildings and alterations with building valuations over $200,000 (residential and non-residential). The Green Building Code is based on the 2010 California Green Building Standards Code, commonly known as CalGreen that was developed and mandated by the state to attain consistency among the various jurisdictions within the state; reduce the building's energy and water use; and reduce waste (see discussion of CalGreen, above).

Existing Buildings Energy and Water Efficiency (EBEWE) Ordinance. Effective in 2017, the EBEWE Ordinance makes public the annual energy and water consumption of all buildings over 20,000 square feet in the City. Beginning in 2017, privately owned buildings that are 20,000 square feet or more and buildings owned by the City that are 7,500 or more are required to be benchmarked, and owners must disclose annual energy and water consumption. Privately owned buildings that are 100,000 square feet or more must begin benchmarking reporting by December 1, 2017, and smaller buildings must begin reporting over the following two years. This Ordinance is designed to facilitate the comparison of buildings' energy and water consumption, and reduce building operating costs, leading to reduced GHG emissions.

EXISTING SETTING

GHGs are the result of both natural and human-influenced activities. Volcanic activity, forest fires, decomposition, industrial processes, landfills, consumption of fossil fuels for power generation, transportation, heating, and cooling are the primary sources of GHG emissions. Without human activity, the Earth would maintain an approximate, but varied, balance between the emission of GHGs into the atmosphere and the storage of GHG in oceans and terrestrial ecosystems. Increased combustion of fossil fuels (e.g., gasoline, diesel, coal, etc.) has contributed to a rapid increase in atmospheric levels of GHGs over the last 150 years.

The primary effect of rising global concentrations of atmospheric GHG levels is a rise in the average global temperature of approximately 0.2 degrees Celsius per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling using 2000 emission rates shows that further warming is likely to occur given the expected rise in global atmospheric GHG concentrations from innumerable sources of GHG emissions worldwide (including from economically developed and developing countries and deforestation), which would induce further changes in the global climate system during the current century.[19]

[19]USEPA, *Draft Endangerment Finding*, 74 Fed. Reg. 18886, 18904, April 24, 2009.

Adverse impacts from global climate change worldwide and in California include:

- Declining sea ice and mountain snowpack levels, thereby increasing sea levels and sea surface evaporation rates with a corresponding increase in atmospheric water vapor, due to the atmosphere's ability to hold more water vapor at higher temperatures;[20]
- Rising average global sea levels primarily due to thermal expansion and the melting of glaciers, ice caps, and the Greenland and Antarctic ice sheets;[21]
- Changing weather patterns, including changes to precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;[22]
- Declining Sierra Mountains snowpack levels, which account for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;[23]
- Increasing the number of days conducive to ozone formation (e.g., clear days with intense sun light) by 25 percent to 85 percent (depending on the future temperature scenario) in high ozone areas located in the Southern California area and the San Joaquin Valley by the end of the 21st Century;[24]
- Increasing the potential for erosion of California's coastlines and seawater intrusion into the Sacramento Delta and associated levee systems due to the rise in sea level;[25] and
- Exacerbating the severity of drought conditions in California such that durations and intensities are amplified, ultimately increasing the risk of wildfires and consequential damage incurred.[26]

Scientific understanding of the fundamental processes responsible for global climate change has improved over the past decade. However, there remain significant scientific uncertainties; for example, in predictions of local effects of climate change, occurrence of extreme weather events, and effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, volcanic activity, and changes in oceanic circulation. Due to the complexity of the climate system, the uncertainty surrounding the implications of climate change may never be completely eliminated. Because of these uncertainties, there continues to be significant debate as to the extent to which increased concentrations of GHGs have caused or will cause climate change, and with respect to the appropriate actions to limit and/or respond to climate change. Given the scale over which climate change occurs, as well as the uncertainties described above, it is not possible to link specific development projects to future specific climate change impacts; though estimating project-specific emissions is possible.

CARB has prepared a statewide emissions inventory covering 2000 to 2014, which demonstrates that GHG emissions have decreased by 7.9 percent over that period.[27] Emissions in 2014 from the transportation sector, which represents California's largest source of GHG emissions and contributed 37 percent of total annual emissions, declined marginally relative to 2011 even while the economy and population continued to grow over that three year time period.[28] The long-term direction of transportation-related GHG emissions is another clear trend, with a 13 percent drop over the past ten years.

[20]USEPA, *Draft Endangerment Finding*, 74 Fed. Reg. 18886, 18904, April 24, 2009.

[21]Intergovernmental Panel on Climate Change, *Climate Change 2013: The Physical Science Basis, Fifth Assessment Report*, ISBN 978 1 107 05799-1 Hardback; 978 1 66182-0 Paperback. 2013.

[22]*Ibid*.

[23]Cal/EPA, *Climate Action Team Report to Governor Schwarzenegger and the California Legislature*, 2006.

[24]*Ibid*.

[25]*Ibid*.

[26]California State Senate, *Climate Change Impacts and Adaptation Efforts in California: Summary of Oversight and Informational Hearings of the California State Senate Committee on Environmental Quality*, November 2015.

[27]CARB, *California Greenhouse Gas Inventory for 2000-2015 – by Category as Defined in the 2008 Scoping Plan*, June 6, 2017.

[28]*Ibid.*

Table 4.7-2 shows GHG emissions from 2005 to 2015 in California. On a local level, the majority of GHG emissions within the Project Area can be attributed to automobile exhaust associated with the transportation sector. Major freeways and a number of primary roadways are adjacent to or within the limits of the Project Area. There are also a number of primary roadways. Direct sources of emissions include solid waste decomposition, haul trucks, and the use of refrigerant compounds.

TABLE 4.7-2: CALIFORNIA GREENHOUSE GAS EMISSIONS INVENTORY

	Annual CO_2e Emissions (Million Metric Tons)										
Sector	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Transportation	184	184	184	173	166	163	160	159	158	160	165
Industrial	95	93	90	90	87	91	91	91	93	94	92
Electric Power	108	105	114	120	101	90	88	95	90	88	84
Commercial and Residential	42	43	43	43	44	45	45	43	43	37	38
Agriculture	34	36	36	36	34	35	35	36	35	36	35
High Global Warming Potential	9	10	11	12	12	14	15	16	17	18	19
Recycling and Waste	8	8	8	8	8	8	8	8	8	9	9
Emissions Total	**482**	**479**	**486**	**483**	**453**	**446**	**442**	**445**	**445**	**442**	**440**

SOURCE: CARB, *California Greenhouse Gas Inventory for 2000-2015 – by Category as Defined in the 2008 Scoping Plan*, June 6, 2017.

As shown in **Table 4.7-2**, California's GHG emissions have followed a declining trend since 2007. In 2015, emissions from routine emitting activities statewide were 1.5 million metric tons of CO_2e ($MMTCO_2e$) lower than 2014 levels, representing an overall decrease of 10 percent since peak levels in 2004. However, between October 23, 2015 and February 18, 2016, an exceptional natural gas leak event occurred at the Aliso Canyon natural gas storage facility that resulted in unexpected GHG emissions of considerable magnitude. The exceptional incident released approximately 109,000 metric tons of methane (CH_4), which equated to approximately 1.96 $MMTCO_2e$ of unanticipated emissions in 2015 and an additional 0.52 $MMTCO_2e$ in 2016. According to the CARB, these emissions will be mitigated in the future through projects funded by the Southern California Gas Company (SoCalGas) based on legal settlement and are presented alongside but tracked separately from routine inventory emissions.[29,30]

The occurrence of unexpected incidents such as the Aliso Canyon natural gas leak and the exacerbated severity of drought and wildfires throughout the state are impossible to predict and present additional challenges in reducing statewide GHG emissions. While the GHG emissions produced by these atypical circumstances are not included in the state routine inventory emissions, ultimately California must account for and mitigate the emissions to achieve its climate goals. Adaptive policy and program development will be necessary to address the unforeseen setbacks that may occur in the future.

THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the CEQA Guidelines, the Proposed Plan would have a significant impact related to GHG emissions if it would:

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

[29]CARB, *California Greenhouse Gas Inventory for 2000-2015 – Trends of Emissions and Other Indicators*, June 2017.
[30]CARB, *Determination of Total Methane Emissions from the Aliso Canyon Natural Gas Leak Incident*, October 2016.

SCAQMD THRESHOLDS AND PROJECT SPECIFIC THRESHOLD

The City has not adopted GHG significance thresholds. SCAQMD has yet to adopt a GHG significance threshold for land use development projects, although it has adopted significance thresholds for industrial-type projects for which it is the lead agency. Those industrial thresholds are not relevant to the Proposed Plan, as the only projects for which the SCAQMD serves as the lead agency are those involving the adoption of air quality rules or regulations, or projects that have not gone through CEQA environmental review via another lead agency.[31] No such projects would occur under implementation of the Proposed Plan. In the absence of adopted thresholds for land use development projects based on SCAQMD guidance, the City has the discretion to use a significance threshold relevant to the Proposed Plan.

On November 30, 2015, the California Supreme Court issued an opinion on GHG significance thresholds for CEQA in the case *Center for Biological Diversity et al. vs. California Department of Fish and Wildlife*. The following discussion is paraphrased from that case, which assessed the use of GHG significance thresholds.

> *Neither AB 32 nor the CARB Scoping Plan set out a mandate or method for CEQA analysis of GHG emissions from a proposed project. A 2007 CEQA amendment, however, required the preparation, adoption and periodic update of guidelines for mitigation of GHG impacts. The resulting state direction was that a lead agency should attempt to describe, calculate or estimate the amount of GHG the project will emit, but recognizes that agencies have discretion in how to do so. It goes on to provide that when assessing the significance of GHG emissions, the agency should consider these factors among others: (1) the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with any adopted regulations or requirements, an EIR must be prepared for the project. (Citing to CEQA Guidelines Section 15064.4).*
>
> *The Court recognized that based on the nature of GHG, no single project is likely to have significant impacts and the challenge is to determine whether a project's emissions are cumulatively considerable. The Court also acknowledged that the scope of global climate change and the fact that GHGs, once released into the atmosphere, are not contained in the local area of their emission means that the impacts to be evaluated are global rather than local. For many air pollutants, the significance of their environmental impact may depend greatly on where they are emitted; for GHG, it does not. For projects that are intended to accommodate long-term growth in California's population and economic activity, this fact gives rise to an argument that a certain amount of GHG emissions is as inevitable as population growth. Under this view, a significance criterion framed in terms of efficiency is superior to a simple numerical threshold because CEQA is not intended as a population control measure.*
>
> *This consideration favors consistency with AB 32's statewide goals as a permissible significance criterion for project GHG emissions. Meeting statewide reduction goals does not preclude all new development. Rather, the Scoping Plan, the state's roadmap for meeting AB 32's target, assumes continued growth and depends on increased efficiency and conservation in land use and transportation from all Californians. To the extent a project incorporates efficiency and conservation measures sufficient to contribute its portion of the overall GHG reductions necessary for the entire state, one can reasonably argue that a project's impact is not cumulatively*

[31] SCAQMD, *Lead Agency CEQA Documents*, 2014.

> *considerable, because it would be helping to solve the cumulative problem of greenhouse gas emissions as envisioned by California law. Given the reality of growth, some GHG emissions from new housing and commercial developments necessary to house and provide jobs for a growing population are inevitable. The critical CEQA question is the cumulative significance of a project's GHG emissions, and from a climate change point of view it does not matter where in the state those emissions are produced. Under these circumstances, evaluating the significance of a project's GHG emissions by their effect on the state's efforts to meet its long-term goals is a reasonable threshold.*
>
> *The court recognized potential options for analyzing cumulative significance of a project's GHG emissions, including:*
>
> - *Business-as-usual (BAU) Model. BAU comparison based on the Scoping Plan methodology if supported by substantial evidence that the metric used supports what level of reduction from business as usual a new land use development at the proposed location must contribute to comply with state goals.*
> - *Consistency with AB 32's goal in whole or in part by looking at compliance with regulatory programs designed to reduce GHG; provided the project complies with or exceeds the regulations that were adopted by CARB, or state agencies to comply with Scoping Plan; and provided, the significance analysis only relates to impacts within the area governed by the regulation – e.g., reliance on Title 24 energy efficiency rules that are intended to reduce GHG from building would not address GHG impacts from transportation. And/or showing consistency with local GHG reduction plans, (e.g., climate action plan), to provide a basis for the tiering or streamlining of project-level CEQA analysis, including as consistent with CEQA Guidelines Section 15183.3.*
> - *Relying on numerical thresholds for significance for GHG.*

Based on the legal standard above, the City finds analyzing per-capita GHG emissions is not a threshold of significance but a useful indicator as to whether regional GHG impacts are consistent with AB 32 and SB 32. Per-capita GHG emissions reflects on average GHG emissions taking into account population density. As part of its strategy for meeting the 2030 GHG emissions target codified in SB 32, CARB promulgated a community-wide annual goal of 6 metric tons of carbon dioxide equivalent ($MTCO_2e$) per capita by 2030 and 2 $MTCO_2e$ per capita by 2050 to be implemented through a future statewide Climate Action Plan. In accordance with the objectives and requirements of SB 375, the 2016–2040 RTP/SCS assessed regional per-capita GHG emissions from passenger and light duty vehicles. As noted above, CARB established SB 375 targets for passenger vehicles in the SCAG region compared to 2005 emissions: 1) an eight percent reduction in emissions by 2020 and 2) a 13 percent reduction in emissions by 2035. The 2016-2040 RTP/SCS indicates that the SCAG region will achieve an 18 percent reduction in per-capita passenger vehicle GHG emissions by 2035 and a 22 percent reduction in per-capita passenger vehicle GHG emissions by 2040 relative to 2005 levels. With that said, there is no adopted City or CPA per-capital GHG emission target or other numerical criteria adopted as a threshold of significance that would be applicable to the Proposed Plan.

Using consistency with AB 32's statewide goal for GHG reduction as a significance criterion, rather than a numerical threshold, is consistent with the *Center for Biological Diversity* decision and broad guidance provided by Section 15064.4 of the CEQA Guidelines. Section 15064.4 was drafted to reflect that there is no iron-clad definition of significance. Section 15064.4 was not intended to restrict agency discretion in choosing a method for assessing GHG emissions, but rather to assist lead agencies in investigating and disclosing all that they reasonably can regarding a project's GHG emissions impacts.

Based on all of the above, to answer the Appendix G questions above, the City of Los Angeles adopts the following project-specific threshold of significance to assess the environmental impacts associated with GHG emissions for the Proposed Plan:

> **Consistency with AB 32, SB 32, SB 375 (through demonstration of conformance with the 2016–2040 RTP/SCS), the Sustainable City pLAn and GreenLA.**

In this document, GHG emissions within the Project Area are estimated using available factors that do not account for anticipated emissions reductions by sector for the purpose of characterizing the magnitude of emissions that could result from the Proposed Plan in a regional context, but consistency with AB 32, SB 32, SB 375, the Sustainable City pLAn and GreenLA are assessed qualitatively. Consistency with AB 32 is determined based on proactive strategies toward meeting the statewide goals, as described above in Regulatory Framework. SB 375 requires the preparation of an SCS in coordination with the RTP, and consistency with the 2016–2040 RTP/SCS is determined by evaluating the Proposed Plan's effect on regional growth relative to the availability of a sustainable transportation network. Additionally, elements of the Proposed Plan are discussed as they relate to goals and/or objectives in GreenLA to ensure that the Proposed Plan is designed in accordance with citywide sustainability measures.

METHODOLOGY

CEQA Guidelines Section 15064.4(a) provides that lead agencies should make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from the project. The discussion below provides the methodology as to how the Proposed Plan's GHG emissions were calculated. Although again, as discussed above, there is no adopted numerical threshold of significance to compare the Proposed Plan's emissions against to determine significance it is provided to comply with the CEQA Guidelines.

GHG emissions result from direct and indirect sources. Direct emissions include emissions from fuel combustion in vehicles and natural gas combustion from stationary sources. Indirect sources include off-site emissions occurring as a result of electricity and water consumption and solid waste. In addition, construction activities would result in direct and indirect emissions. As GHGs are evaluated on a regional basis, the following analysis addresses the Project Area as it pertains to the region. Mobile source emissions were estimated using VMT data presented in Section 4.15, Transportation and Traffic, and vehicle emission rates from the CARB's Emission Factors 2014 (EMFAC2014) model. The VMT data included speed information, which allowed the analysis to account for increased congestion in build scenarios.

Area source emissions related to existing and future demand for water, wastewater treatment and conveyance, solid waste disposal, and energy were obtained according to the methodology explained in Appendix A of the Calculation Details for California Emissions Estimator Model (CalEEMod).[32] GHG emissions result from electricity use, natural gas use, water supply, wastewater treatment, and solid waste disposal by landfilling, recycling, or composting as methane and CO_2 gas is emitted in the process. The source of GHG emissions associated with water supply and wastewater treatment is attributed to the electricity required to convey, treat, and distribute potable water to land uses, and the electricity required for wastewater treatment. GHG emissions associated with water resources are included in the assessment of emissions from electricity use. Refer to Section 4.16, Utilities and Service Systems for a detailed estimate of utility use within the Project Area.

[32]California Air Pollution Control Officers Association, *California Emissions Estimator Model (Version 2016.3.1)*, September 2016.

It is anticipated that future conservation (as a result of increased pressure to conserve and increased prices) will result in more efficient energy use by all sectors resulting in reduced energy demand. As energy providers and water suppliers respond to AB 32 and the Scoping Plan, emission rates associated with power and water delivery are anticipated to decrease. However, in order to present a conservative analysis and without specific information on future demand factors, only modest reductions in demand are assumed. It is anticipated that the state and region will comply with AB 32 and SB 32, but at the present time sector-specific improvements cannot be quantified for this analysis.

The Proposed Plan affects the potential location and density of permitted land uses and the number and length of vehicle trips associated with implementation of those uses. Development of individual projects under the Proposed Plan will be subject to the requirements of local policies and programs (i.e., the Los Angeles Green Building Code) that are aimed at improving sustainability, enhancing accessibility to public transit, and increasing density and diversity in neighborhood planning. Advancements in the efficiency of energy and utility generation are the responsibility of the LADWP and the Southern California Gas Company (SoCalGas). GHG emissions released by these sources/sectors are properly controlled/regulated by these other City Departments (that manage sources of the City's energy supply), state and federal regulations (e.g., Title 24 Building Energy Efficiency Program) and local programs and policies such as the Los Angeles Green Building Code and the 2016-2040 RTP/SCS. In accordance with the objectives of SB 375, the primary focus of this assessment with respect to potential reductions in GHG emissions is the mobile source VMT associated with development under the Proposed Plan.

GHG emissions would also be generated by construction activity. No specific development projects have been proposed in this planning analysis, and an annualized quantification of construction emissions would be speculative. In general, construction-related GHG emissions would comprise a minimal percentage of total regional emissions when considering the emissions generated by mobile and other sources. For example, CARB emissions inventories show that emissions associated with construction activities constitute approximately 1.7 percent of California's on-road mobile source GHG emissions annually. A similar percentage is expected for construction emissions related to the Proposed Plan. Construction emissions are discussed below based on this assumption and amortized over 30 years in accordance with SCAQMD recommendations. The analysis in this EIR focuses on consistency with local and state regulations adopted pursuant to the state's Scoping Plan, including those to address impacts from construction and/or energy efficiency of new construction, (e.g., the Green Building Code).

IMPACTS

IMPACT 4.7-1 Would implementation of the Proposed Plan generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? **Less than significant impact.**

IMPACT 4.7-2 Would implementation of the Proposed Plan conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions? **Less than significant impact.**

AS DISCUSSED ABOVE, TO ANSWER BOTH OF THE ABOVE QUESTIONS, THE CITY EVALUATES WHETHER THE PROJECT IS CONSISTENT WITH AB 32, SB 32, SB 375 (THROUGH DEMONSTRATION OF CONFORMANCE WITH THE 2016–2040 RTP/SCS), THE SUSTAINABLE CITY PLAN AND GREENLA. GHG EMISSIONS ARE QUANTIFIED FOR INFORMATIONAL PURPOSES.

GHG Emissions Generation. Implementation of the Proposed Plan would generate GHG emissions through the construction and operation of future development projects occurring within the Project Area.

GHG emissions would specifically arise from construction activities, as well as from sources associated with operations of development projects within the Project Area. GHG sources from operational activities include direct sources such as motor vehicles and natural gas consumption, and indirect sources such as electricity generation, water supply, wastewater treatment, and solid waste handling/disposal. **Table 4.7-3** displays estimates of annual GHG emissions for the Project Area under Existing Conditions, the Future (2040) No Project/Existing Plan, and the Proposed Plan. The conservative analysis includes known emission control requirements that are required under existing law (e.g. Pavley regulations) but does not account for anticipated laws (such as increasingly stringent Title 24 standards, refinery regulations, and the Cap-and-Trade program) that will further reduce future GHG emissions.

TABLE 4.7-3: ESTIMATED GREENHOUSE GAS EMISSIONS IN PROJECT AREA

Source Type	Annual CO_2e Emissions (Metric Tons per Year)		
	Existing Conditions (2016)	**Future No Project/ Existing Plan (2040) /a/**	**Proposed Plan (2040)**
DIRECT SOURCES			
Transportation	888,896	530,804	555,127
Natural Gas	105,553	125,495	133,465
INDIRECT SOURCES			
Electricity, Water, and Wastewater	548,831	664,727	705,234
Solid Waste	63,963	78,999	80,215
Total Annual GHG Emissions	**1,607,243**	**1,400,025**	**1,474,041**
Change Relative to Existing Conditions (2016)	*N/A*	***-207,218***	***-133,202***

Note: N/A = Not Applicable
/a/ The Future No Project Scenario is based on reasonably foreseeable development if the Existing Plan were to remain in place (see discussion in Chapter 5 Alternatives).
SOURCE: TAHA, 2018.

Estimates of emissions in the Project Area are presented for the purposes of characterizing the magnitude of emissions and relative emissions from the different scenarios that could result from the Proposed Plan in order to inform the public and decision makers. The quantified emissions are not used to compare against a numeric threshold, because as explained in "Thresholds of Significance," above, there is no consensus as to an appropriate threshold for individual projects or land use plans and the estimates are based on emission factors that do not take in to account reductions required to occur in different sectors.

As shown in **Table 4.7-3**, annual emissions of GHG within the Project Area based on the 2040 Reasonably Expected Development of the Proposed Plan would be less than existing emissions by approximately 133,202 $MTCO_2e$ per year (or about eight percent less than existing emissions). Although future conditions reflect increased emissions from stationary sources via the Proposed Plan's reasonably expected development and associated energy use and utility demand, future transportation emissions would be less than existing emissions due to lower vehicle exhaust emissions resulting from increased engine efficiency and cleaner burning fuels. CARB has adopted regulatory programs to ensure that mobile source GHG emissions will be reduced in the future, and the implementation of these programs is reflected in the GHG emission rates that are incorporated into EMFAC2014 which has been approved by CARB for mobile source emissions modeling. Compared to the Existing Conditions, the Proposed Plan would result in a reduction in annual GHG emissions within the Project Area. The Proposed Plan is designed to accommodate efficient growth in the SCAG region and maximize utilization of the transportation corridors and public transit opportunities. By guiding development near transit corridors and encouraging creative

mixed land uses, the Proposed Plan creates an efficient strategy for reasonably foreseeable development in the region, consistent with AB 32, SB 32 and the 2016-2040 RTP/SCS.

Regional Perspective. To assess future GHG emission reductions resulting from a development project, the future condition is often compared to a BAU condition – typically the proposed development without the various GHG reduction measures. For a community plan project, BAU is much more difficult to determine and would be entirely speculative to quantify. While the future conditions with the existing community plan identifies what is reasonably foreseeable to occur in the Project Area if the Proposed Plan were not to proceed, it is not a complete picture of BAU for the region. The Proposed Plan is a planned response to forecast growth, so if growth does not occur in the Project Area, it could occur elsewhere in the City or SCAG region. The Proposed Plan combines sustainable strategies (e.g., proximity to transit, mixed-use, increased density) to respond to state, regional and local policies aimed at reducing GHG emissions. If development were to occur elsewhere in a less sustainable fashion (BAU), regional emissions would be greater. However, for land use plans such as the Proposed Plan, full quantification of BAU is not possible because, at this scale, it is not possible to anticipate where growth would go and how different it would be as compared to the project in terms of proximity to transit, mix of uses and density. Therefore, a comparison of the Proposed Plan's emissions in the future to emissions under BAU is not possible.

In consideration of the objectives of SB 375 and the goals of the 2016–2040 RTP/SCS, per-capita CO_2 emissions from passenger and light duty vehicles were analyzed. The 2016–2040 RTP/SCS shows regional per-capita GHG emissions from passenger and light duty vehicles being reduced by 21 percent relative to 2005 levels by 2040. The 2016–2040 RTP/SCS determined that the 2005 per-capita CO_2 emissions from passenger and light duty vehicles within the SCAG region were 23.8 pounds per day.[33]

Table 4.7-4 presents the forecast population, total Project Area daily CO_2 emissions from passenger and light-duty vehicles, and per-capita CO_2 emissions within the Project Area under Existing Conditions, the Future (2040) No Project/Existing Plan, and the Proposed Plan.

TABLE 4.7-4: PROJECT AREA SB 375 PASSENGER VEHICLE PER-CAPITA CO_2 EMISSIONS

	Existing Conditions (2016)	Future (2040) No Project/ Existing Plan	Proposed Plan (2040)
Resident Population	206,000	243,000	264,000
Daily CO_2 Emissions (Pounds)	4,770,815	3,799,615 /a/	3,929,251 /a/
Per Capita Emissions (Pounds)	23.2	15.6	14.9
Percent Reduction from 2005 SCAG Regional Per Capita Emissions Level	-3%	-34%	-37%

/a/ 2040 emissions conservatively estimated to include an average Pavley reduction of 35% for CO_2 emissions from passenger vehicles.
SOURCE: City of Los Angeles Travel Demand Model, 2016 and 2018; CARB, EMFAC2014; SCAG, *Draft PEIR 2016-2040 RTP/SCS*, December 2015.

As shown in **Table 4.7-4**, implementation of the Proposed Plan would reduce per-capita CO_2 emissions from passenger vehicles by approximately 8.3 pounds per day relative to Existing Conditions and by approximately 0.7 pounds per day relative to the Future (2040) No Project/Existing Plan (comparison to existing plan is for information purposes and not for impact analysis). Under the Proposed Plan, per-capita CO_2 emissions would be reduced by approximately 37 percent relative to the 2005 SCAG Regional baseline levels examined under

[33]SCAG, *Draft Program Environmental Impact Report 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy*, December 2015.

SB 375. The 37 percent reduction resulting from the Proposed Plan exceeds the 21 percent reduction target of the 2016–2040 RTP/SCS, and therefore the Proposed Plan is consistent with SB 375.

Based on the plan-level analysis, the Proposed Plan would not increase emissions in the Project Area compared to existing conditions and, therefore, considered in isolation, would contribute to reducing emissions in California below existing emissions and would contribute to the AB 32 goal of reducing future emissions to 1990 levels. The Proposed Plan is not occurring in isolation; it is part of a regional strategy (contained in the 2016–2040 RTP/SCS) to direct growth to urban areas in order to achieve the following:

- Undertake modern, efficient construction techniques that result in using less energy and less water as compared to less dense development;
- Create a mix of uses that encourages pedestrian and bicycle activity, reducing vehicle trips; and
- Develop areas in close proximity to transit in order to reduce vehicular trips.

The Proposed Plan would also be consistent with the City's Sustainable City pLAn by accommodating growth while providing transportation options. This strategy would result in lower per capita emissions than less dense growth and would contribute to the City reaching the 2025 Sustainable City pLAn reduction target of 45 percent.

Consistency with State and Regional Plans, Policies, and Regulations. The State of California has adopted plans and policies designed to reduce regional and local GHG emissions. SB 375 requires that each MPO prepare an SCS in the RTP that demonstrates how the region will meet greenhouse gas emissions targets. SB 375 establishes a collaborative relationship between MPOs and CARB to establish GHG emissions targets for each region in the state. Under the guidance of the goals and objectives adopted by SCAG's Regional Council, the 2016–2040 RTP/SCS was developed to provide a blueprint to integrate land use and transportation strategies to help achieve a coordinated and balanced regional transportation system. The 2016–2040 RTP/SCS represents the culmination of several years of work involving dozens of public agencies, 191 cities, hundreds of local, county, regional and state officials, the business community, environmental groups, as well as various nonprofit organizations. Adoption of the 2016–2040 RTP/SCS substantiated that the growth forecasts for the SCAG region, taking into account efforts to reduce climate change impacts from GHG emissions, were consistent with the goals of SB 375.

The 2016–2040 RTP includes an SCS, as required by SB 375. The primary goal of the SCS is to provide a vision for future growth in southern California that will decrease per capita GHG emissions from passenger vehicles. However, the strategies contained in the 2016–2040 RTP/SCS will produce benefits for the region far beyond simply reducing GHG emissions. The SCS integrates the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. The regional vision of the SCS maximizes current voluntary local efforts that support the goals of SB 375. The SCS focuses the majority of new housing and job growth in high-quality transit areas and other opportunity areas on existing main streets, in downtowns, and on commercial corridors, resulting in an improved jobs-housing balance and more opportunity for transit-oriented development. The underlying purpose of the Proposed Plan is to plan for and accommodate foreseeable growth in the Project Area, consistent with the growth strategies of the City as provided in the City's General Plan Framework Element, as well as the policies of SB 375 and the SCS. The Proposed Plan would allow for concentrated, mixed-use development adjacent to transit corridors in order to conserve resources, protect existing residential neighborhoods, and improve air quality by reducing the use of cars. The Proposed Plan is expected to contribute to reductions in per capita GHG emissions when viewed at the regional level. Thus, the Proposed Plan would be entirely consistent with the SCS and SB 375 goals.

In addition to SB 375, the 2016–2040 RTP/SCS assessed compliance with AB 32.[34] To assess consistency with the AB 32 Scoping Plan, the Proposed Plan is compared against the recommended GHG reduction measures and discrete early action measures found in the First Update to the AB 32 Scoping Plan. The majority of these measures are relevant to statewide policies and not applicable to local analyses. For example, increasing the regional renewable energy portfolio or encouraging sustainable forests are outside a reasonable assessment for a land use plan that targets a specific community within a larger city. However, a number of the GHG reduction measures in the Scoping Plan are applicable to development activities that would occur under the Proposed Plan, such as increasing building/appliance efficiency, showing progress toward regional transportation-related GHG goals, constructing green buildings, and increasing construction recycling rates.

The First Update to the AB 32 Scoping Plan includes detailed discussions related to promoting transit-oriented development (TODs) and alternatives to driving, such as public transportation. It states that,

> *Metropolitan areas are beginning to change and trend toward more dense urban development designed to minimize energy consumption, waste output, air pollution, and water pollution. Business districts are encouraging more infill development that offers a mix of residential space, entertainment, restaurants, shopping, and other amenities within close proximity, which reduces dependence on private vehicles. These trends create opportunities for developers to satisfy changing consumer desires and for land use planners to establish policies for more sustainable development patterns. It takes decades for changes in land use and transportation policies to result in tangible changes, including GHG emission reductions. The next generation of regional integrated plans is expected to result in climate benefits well beyond the 2035 time horizon. Integrated regional planning efforts under SB 375 enable communities to understand the differences between alternative development patterns and to make choices accordingly. Recently approved SCSs reflect regional goals for a more sustainable form of community development that brings with it economic, social, and environmental benefits. The implementation of these regional goals through individual action by local governments and the development community will be essential to meeting the state's ongoing climate objectives.*

The type of compact, urban development along public transportation lines that would be developed with implementation of the Proposed Plan would be entirely consistent with policies in the First Update to the Scoping Plan. The Proposed Plan promotes concentrated, mixed-use development adjacent to transit stations and corridors in order to conserve resources and create more sustainable development pattern by increasing opportunities for active transportation and reducing the use of cars.

The Proposed Plan includes updates to land use designations and zones that are intended to accommodate growth anticipated by the 2016–2040 RTP/SCS. Growth is directed away from hillside areas and lower-density neighborhoods and primarily into the Regional Center, the entertainment and visitor-serving center of the Project Area, and other commercial corridors served by transit. Future growth would be directed around the Red Line Metro Rail stations and Metro Rapid bus lines where new residential and commercial development can be supported by transportation infrastructure and different types of land uses can be intermingled to reduce the length and number of vehicle trips. The Proposed Plan's strategic increase of development potential in transit-rich areas is consistent with the First Update to the AB 32 Scoping Plan. The objectives and project features of the Proposed Plan that are most relevant to the GHG environmental review are shown in **Table 4.7-5**.

[34]SCAG, *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy*, 2016.

TABLE 4.7-5: SUSTAINABILITY OBJECTIVES AND PROJECT FEATURES OF THE PROPOSED PLAN

PURPOSE: Plan for and accommodate foreseeable growth in the Project Area, consistent with the growth strategies of the City as provided in the Framework Element, as well as the policies of SB 375 and the SCS.	
Primary Objective: Accommodate projected population, housing, and employment growth within the Project Area, consistent with the growth strategies of the Framework Element, by implementing the following: 1) Maximizing development opportunities around existing transit systems to encourage sustainable land use while minimizing potential adverse impacts; (2) Directing growth to transit hubs and corridors; (3) Planning for increases to the housing supply; (4) Encouraging balanced jobs and housing growth with mixed-use development; (5) Accommodating commercial uses for future employment opportunities; and (6) Focusing growth into Framework-identified Centers and corridors while preserving single-family neighborhoods, hillsides, and open space.	
Project Features	Amend General Plan Land Use designations, and/or zones and height districts along selected corridors; direct future growth around the Red Line Metro Rail stations and Metro Rapid bus lines; and incentivize mixed-use commercial/residential development near commercial areas, such as the Regional Center and public transit.
	Direct growth away from low-density residential areas to transit nodes helps maintain the existing scale and density of residential neighborhoods.
	Amend General Plan Land Use designations, and/or zones and height districts to support higher density, mixed-use transit neighborhoods at transit nodes and commercial centers that can accommodate increased capacity.
	Promote TODs by directing residential and commercial development to districts, centers and boulevards adjacent to transit, making it possible for residents and visitors to reduce dependence on automobiles.
	Promote the General Plan Framework's transit-oriented development policies which encourage compact, mixed-use development near transit to reduce vehicle trips and improve air quality through Plan policies and removal of zoning limitations on density and intensity.
	Encourage water conservation, energy efficiency, the use of permeable materials for paving, recycling, reduction of waste, and the use of clean, renewable energy through Plan policies.
SOURCE: City of Los Angeles, *Draft Hollywood Community Plan*, 2018.	

As discussed in Section 4.15, Transportation and Traffic, the Citywide Ordinance on TDM and Trip Reduction Measures (Ordinance No. 168,700) would continue to be implemented within the Project Area. This Ordinance calls for several measures to be taken by non-residential developments in an effort to reduce single-occupancy vehicle trips. In addition, the Proposed Plan's allocation of development potential in close proximity to major transit stations would reduce reliance of vehicular travel, decrease the number of vehicle trips per capita, and reduce VMT per capita in order to provide better access and transportation options to residents, workers and visitors in Hollywood. Under Existing Conditions, motorists traveling to, from or within the Project Area travel over 5.62 million vehicle miles on an average weekday. Under the Proposed Plan, daily VMT would increase to approximately 5.77 million, a 3 percent increase from Existing Conditions in the Project Area. But, the VMT per capita is lowered under the Proposed Plan.

Although regional VMT would increase, daily VMT per capita would decrease from 18.3 miles per capita daily under Existing Conditions to 15.6 miles per capita under the Proposed Plan, representing a reduction of 15 percent average VMT per capita. The overall increase in VMT likely reflects increases in the number of residents, employees and visitors in the Project Area largely driven by ambient growth. Overall though, a reduction in VMT per capita indicates a decrease in reliance on automobiles and a measurable step towards reduction in GHG emissions. Furthermore, as attitudes shift in favor to alternative modes of transport such as bicycling and the use of public transportation, GHG emissions are expected to further decrease.

Consistency with Local Plans, Policies, and Regulations. The City of Los Angeles enacted its GreenLA CAP in 2007 to outline strategies for reducing the City's emissions of GHG and consequent effects on climate change. The CAP's primary long-term objective was to establish a framework for implementing GHG emissions reductions efforts that would achieve a goal of reducing City-wide emissions to 35 percent below 1990 levels by 2030. With regards to planning, elements of GreenLA designed to aid in regional GHG reductions include promotion of high-density housing close to major transportation arteries, implementation of TOD, and expanding availability of City land for housing, mixed-use development, parks, and open space. As discussed in Chapter 3.0, Project Description, the Proposed Plan would encourage mixed-use development in the Project Area and increase housing development potential near Metro Red Line rail stations. Furthermore, implementation of the Proposed Plan would encourage pedestrian-friendly, mixed-use neighborhoods that would require less use of passenger vehicles. The combination of these strategies is consistent with the goals of GreenLA.

In April 2015, the Mayor of Los Angeles released the Sustainable City pLAn to expand upon the framework set forth by the original GreenLA CAP. The Sustainable City pLAn focuses on short-term and long-term strategies for how the City of Los Angeles will adapt to the ever-increasing demands of the growing population and employment in the City. The Proposed Plan contains elements and objectives that address the following Strategies & Priority Initiative areas within the Sustainability City pLAn: Local Water, Energy-Efficient Buildings, Housing and Development, and Mobility and Transit. The Proposed Plan would satisfy priority initiatives of the Sustainable City pLAn by implementing the Project Features discussed in **Table 4.7-5**. Under the Proposed Plan, reasonably expected development within the Project Area would be encouraged to embrace strategies to improve water conservation and reduce per-capita use, would comply with the Green Building Code, and direct future growth toward transit corridors. These elements of the Proposed Plan are consistent with the directive of the Mayor's Sustainable City pLAn.

In addition, individual development projects constructed within the Project Area would be required to comply with the Los Angeles Green Building Code. The City's Green Building Code includes energy and water saving measures that reduce GHG emissions below 2013 Title 24 requirements. It promotes sustainable building practices by creating a series of requirements and incentives for developers to meet the U.S. Building Council's Energy and Design standards. The Green Building Code includes the following key mandatory measures for non-residential and high-rise residential buildings related to GHG reduction:

- Short-Term Bicycle Parking: If a development project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passersby, for five percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.
- Long-Term Bicycle Parking: For buildings with over 10 occupants, provide secure bicycle parking for five percent of motorized vehicle parking capacity, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and may include:
  - Covered, lockable enclosures with permanently anchored racks for bicycles.
  - Lockable bicycle rooms with permanently anchored racks.
  - Lockable, permanently anchored bicycle lockers.
- Designated Parking: Provide designated parking, by means of permanent marking or a sign, for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles as described in Table 5.106.5.2 of the Green Building Code.
- Energy Conservation: Provide electric vehicle supply wiring for a minimum of five percent of the total number of parking spaces.
- Energy Conservation: A project must exceed the California Energy Code requirements, based on the 2008 Energy Efficiency Standards, by 15 percent using an Alternative Calculation Method approved by the California Energy Commission.

- Energy Conservation: Each appliance provided and installed shall meet Energy Star requirements if an Energy Star designation is applicable for that appliance.
- Renewable Energy: Provide future access, off-grid pre-wiring, and space for electrical solar systems.

As the Proposed Plan would be consistent with the goals of GreenLA and the Sustainable City pLAn, and future development projects within the Project Area would be required to comply with the City's Green Building Code, the Proposed Plan would be consistent with the City's strategies for reducing GHG.

Conclusion

As discussed above, the Proposed Plan would result in a reduction in annual GHG emissions within the Project Area relative to Existing Conditions and would exceed the CO_2 SCAG region per-capita emissions reductions identified in the 2016–2040 RTP/SCS. These quantitative metrics demonstrate the Proposed Plan's compliance with regional, state, and federal efforts to decrease climate impacts related to sustainable development and transportation. Additionally, the Proposed Plan would be consistent with the 2016–2040 RTP/SCS and the City's Sustainable City pLAn.

Additionally, the Proposed Plan would concentrate development around transit, encourage mixed-use development, and better accommodate pedestrians and bicyclists. These characteristics are anticipated to reduce per capita GHG emissions associated with cars and light trucks. The Proposed Plan would be consistent with AB 32, SB 32, SB 375, and the 2016–2040 RTP/SCS, regional and local strategies to reduce GHG, and can be expected to contribute to reductions in per capita GHG emissions when viewed at the regional level. Therefore, impacts related to GHG emissions under the Proposed Plan would be ***less than significant***.

Mitigation Measures

No mitigation measures are required.

Significance of Impact after Mitigation

Less than significant.

CUMULATIVE IMPACTS

The State of California, through AB 32, has acknowledged that GHG emissions are a statewide impact. Emissions generated by the Proposed Plan combined with past, present, and reasonably probable future projects could contribute to this impact. The CEQA Guidelines emphasize that the effects of GHG emissions are cumulative in nature and should be analyzed in the context of CEQA's existing cumulative impacts analysis. The Office of Planning and Research (OPR) acknowledges that although climate change is cumulative in nature, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment.[35] CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated GHG emissions to a less than significant level as a means to avoid or substantially reduce the cumulative impact of a project.

[35]California Governor's Office of Planning and Research, *CEQA AND CLIMATE CHANGE: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review*, June 19, 2008.

As discussed above, the Proposed Plan would be consistent with AB 32, SB 375, SB 32, the 2016–2040 RTP/SCS, and the City's local GHG reduction plan, the GreenLA CAP. Additionally, GHG impacts are cumulative in nature, and the Proposed Plan would result in a substantial net decrease in GHG emissions within the Project Area relative to the existing environmental setting. Therefore, the Proposed Plan's incremental contribution to that significant cumulative impact ***would not be cumulatively considerable***.

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