

## 3.5 Greenhouse Gases

This section presents a summary of the existing science related to greenhouse gases (GHGs); overviews of state and local GHG emissions inventories, and of the existing regulatory context for GHGs; a summary of the methods used to estimate GHG emissions attributable to the proposed project; and an analysis of potential impacts of the proposed project related to GHG emissions.

The proposed project would not contribute significantly to climate change by itself. However, cumulative emissions from many projects and plans would all contribute to global GHG concentrations and the climate system. This section considers the proposed project's cumulative contribution to the significant cumulative impact of climate change.

### 3.5.1 Environmental Setting

#### 3.5.1.1 Overview of Greenhouse Gases

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space through the atmosphere. However, infrared radiation is selectively absorbed by GHGs in the atmosphere. As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth. Anthropogenic (human-caused) emissions of these GHGs lead to atmospheric levels that exceed natural ambient concentrations and have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change.

The Intergovernmental Panel on Climate Change concluded that variations in natural phenomena, such as solar radiation and volcanoes, produced most of the earth's warming from preindustrial times to 1950. Some variations in natural phenomena also had a small cooling effect. Since 1950, increasing GHG concentrations resulting from human activity, such as fossil fuel burning and deforestation, have been responsible for most of the observed temperature increase (IPCC 2013).

Global surface temperature has increased by approximately 1.53 degrees Fahrenheit over the last 140 years (IPCC 2013); however, the rate of increase in global average surface temperature has not been consistent. During the last three decades, temperatures have warmed at a much faster rate per decade (IPCC 2013).

During the same period when increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen; precipitation patterns throughout the world have shifted, with some areas becoming wetter and others drier; snowlines have increased in elevation, resulting in changes to the snowpack, runoff, and water storage; and numerous other conditions have been observed. Although it is difficult to prove a definitive cause-and-effect relationship between global warming and other observed changes to natural systems, there is a high level of confidence in the scientific community that these changes are a direct result of increased global temperatures caused by the increased presence of GHGs in the atmosphere (IPCC 2013).

#### Principal Greenhouse Gases and Sources

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the respiration of humans, animals, and plants; decomposition of organic matter; volcanic activity; and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels by stationary and mobile sources, waste treatment, and agricultural processes. The following are the principal GHG pollutants that contribute to climate change and their primary emission sources:

- **Carbon Dioxide:** Natural sources of carbon dioxide (CO<sub>2</sub>) include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; and evaporation from oceans. Anthropogenic sources include burning of coal, oil, natural gas, and wood.
- **Methane:** Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal solid waste landfills.

- **Nitrous Oxide:** Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of nitrous oxide are agricultural soil management, sewage treatment, mobile and stationary combustion of fossil fuel, and production of adipic and nitric acid. Nitrous oxide is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.
- **Fluorinated Gases:** These gases, listed below, are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as having high global warming potential (GWP).
  - *Chlorofluorocarbons* are used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants.
  - *Perfluorinated chemicals* are emitted as byproducts of industrial processes and are used in manufacturing.
  - *Sulfur hexafluoride* is a strong GHG used primarily as an insulator in electrical transmission and distribution systems.
  - *Hydrochlorofluorocarbons* have been introduced as temporary replacements for chlorofluorocarbons and are also GHGs.
  - *Hydrofluorocarbons* were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. Hydrofluorocarbons are emitted as byproducts of industrial processes and are used in manufacturing.

GHGs are not monitored at local air pollution monitoring stations and do not result in direct impacts on human health. Rather, GHGs generated locally contribute to global concentrations of GHGs, which result in changes to the climate and environment.

The California Air Resources Board (ARB) prepares an annual, statewide GHG emissions inventory. GHGs are typically analyzed by sector or type of activity. As shown in Figure 3.5-1, California produced 424.1 million metric tons (MT) CO<sub>2</sub> equivalent (CO<sub>2</sub>e) in 2017. Combustion of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2017, accounting for 41 percent of total GHG emissions. Transportation was followed by industry, which accounted for 24 percent, and then by the electric power category (both in-state and out-of-state sources), which accounted for 15 percent of total GHG emissions (ARB 2019).

As described below, California has implemented several programs and regulatory measures to reduce GHG emissions. Figure 3.5-2 demonstrates California's progress in achieving statewide GHG emissions reduction targets. Since 2007, California's GHG emissions have been declining; GHG emissions have continued to decline even as population and gross domestic product have increased. Per-capita GHG emissions in 2017 were 23 percent lower than the peak per-capita GHG emissions recorded in 2000. Similarly, GHG emissions per million dollars of gross domestic product have decreased by 33 percent since the peak in 2001 (ARB 201a, ARB 2017b).

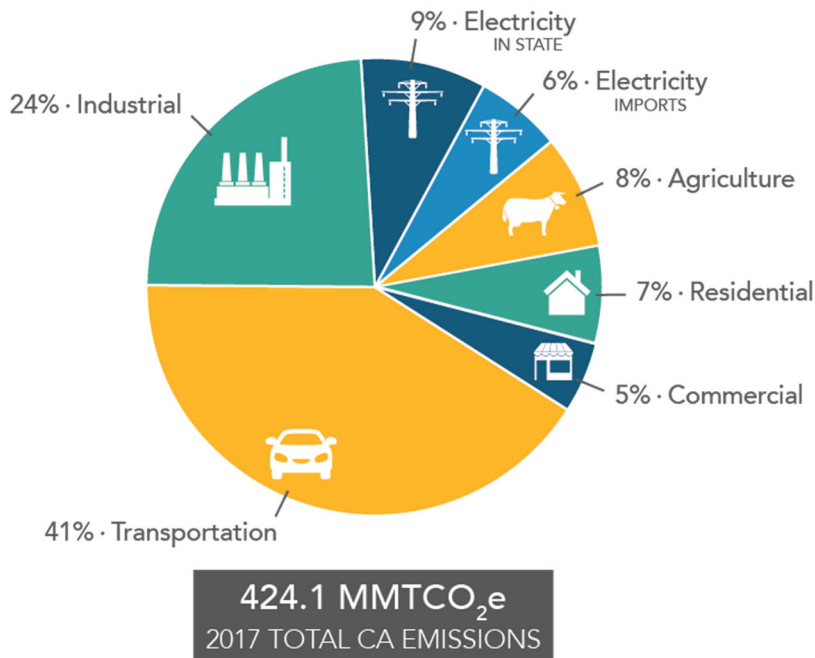
In 2012, the Sierra Business Council published a community-wide GHG emissions inventory in collaboration with the Town of Loomis. The inventory (Town of Loomis 2012) estimated emissions using the baseline year of 2005 using the International Local Government GHG Emissions Analysis Protocol.<sup>1</sup> The inventory, summarized in Table 3.5-1, identified GHG emissions from multiple sectors: residential, commercial, industrial, vehicle transportation, and waste and wastewater. According to this estimate, in 2005 the Town of Loomis produced approximately 56,000 MT CO<sub>2</sub>e, for a per capita rate of approximately 8.8 MT CO<sub>2</sub>e per resident. As with the state as a whole, vehicle transportation was the largest source of GHG emissions, contributing more than 61 percent of the total.

### Global Warming Potential

GWP is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time the gas remains in the atmosphere (its "atmospheric lifetime"). The GWP of each gas is measured relative to CO<sub>2</sub>; therefore, CO<sub>2</sub> has a GWP of 1. The other main GHGs that have been attributed to human activity include methane, which has a GWP of 28, and nitrous oxide, which has a GWP of 265 (IPCC 2013). For example, 1 ton of methane has the same contribution to the greenhouse effect as approximately 28 tons of CO<sub>2</sub>. GHGs with lower emissions rates than CO<sub>2</sub> may still contribute to climate change, because they are more effective than CO<sub>2</sub> at absorbing outgoing infrared radiation (i.e., they have a high GWP). The concept of CO<sub>2</sub> equivalence (CO<sub>2</sub>e) is used to

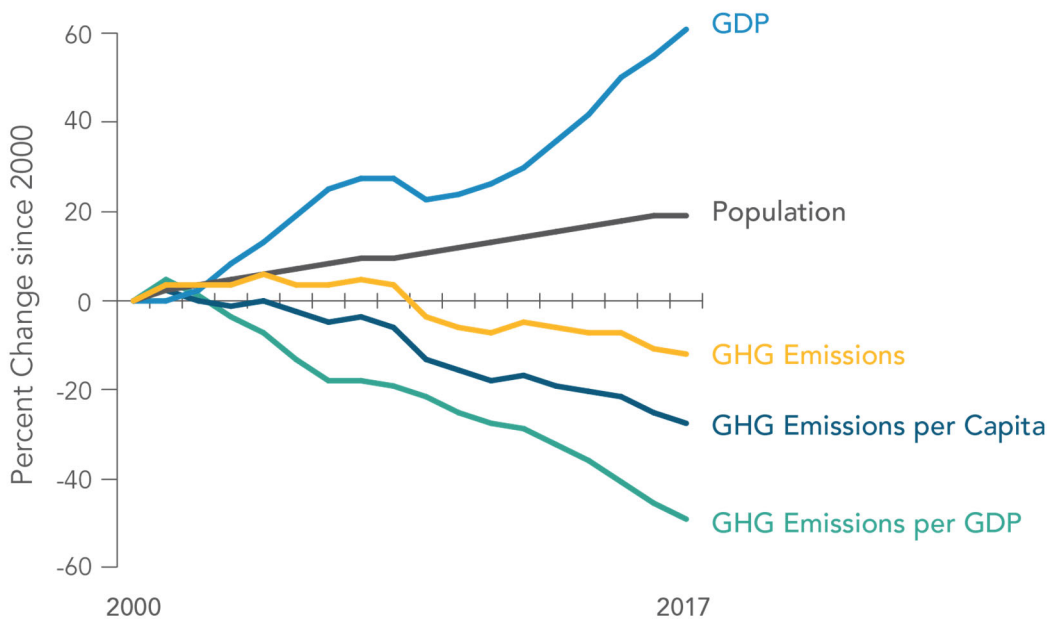
<sup>1</sup> A 2005 baseline year was likely used because this year was once considered an important comparison year for future emissions forecasts and reductions.

account for the different GWP potentials of GHGs to absorb infrared radiation. GHG emissions are typically measured in terms of pounds or tons of CO<sub>2</sub>e, and are often expressed in MT CO<sub>2</sub>e.



Source: ARB 2019

**Figure 3.5-1. 2015 California Greenhouse Gas Emissions Inventory by Sector**



Source: ARB 2019

**Figure 3.5-2. Trends in California Greenhouse Gas Emissions (Years 2000 to 2015)**

**Table 3.5-1. Town of Loomis 2005 Greenhouse Gas Emissions Inventory (Community-wide)**

Sector	Emissions (MT CO <sub>2</sub> e)	Percent of Inventory
Residential	11,619	20.7
Commercial and Industrial	8,488	15.2
Vehicle transportation	34,238	61.1
Waste and wastewater	1,696	3.0
<b>Total*</b>	<b>56,041</b>	<b>100.0</b>

Notes: CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons

\* Total may not be the exact sum of emissions due to rounding.

Source: Town of Loomis 2012

Climate change is a global issue because GHGs can have global effects, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern (see Section 3.3, “Air Quality”). Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years), or long enough to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule depends on multiple variables, more CO<sub>2</sub> is currently emitted into the atmosphere than is stored or “sequestered.”

## 3.5.2 Regulatory Setting

Although federal, state, regional, and local GHG-related plans, policies, and regulations do not all directly apply to the proposed project, the information below is helpful for understanding the cumulative context for GHG emissions impacts and strategies to reduce GHG emissions.

### 3.5.2.1 Federal Plans, Policies, Regulations, and Laws

The U.S. Environmental Protection Agency (EPA) is responsible for implementing the federal Clean Air Act (CAA). On April 2, 2007, the U.S. Supreme Court held that EPA must consider regulation of GHG emissions from motor vehicles. In *Massachusetts v. Environmental Protection Agency et al.*, 12 states and cities (including California) along with several environmental organizations sued to require EPA to regulate GHGs as pollutants under the CAA (127 S. Ct. 1438 [2007]). The Supreme Court ruled that GHGs fit within the CAA’s definition of a pollutant and that EPA has the authority to regulate GHGs.

#### U.S. Environmental Protection Agency “Endangerment” and “Cause or Contribute” Findings

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- *Endangerment Finding:* The current and projected concentrations of the six key GHGs—CO<sub>2</sub>, methane, nitrous oxide, hydrofluorocarbons, perfluorinated chemicals, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.
- *Cause or Contribute Finding:* The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to GHG pollution, which threatens public health and welfare.

#### Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year 2008 Consolidated Appropriations Act (House of Representatives Bill 2764; Public Law 110-161), which required EPA to develop “...mandatory reporting of GHGs above appropriate thresholds in all sectors of the economy....” The Reporting Rule applies to most entities that emit 25,000 MT CO<sub>2</sub>e or more per year. Since 2010, facility owners have been required to submit an annual GHG emissions report with detailed calculations of the facility’s GHG emissions. The Reporting Rule also mandates compliance with recordkeeping and administrative requirements to enable EPA to verify annual GHG emissions reports.

### **Council on Environmental Quality Guidance**

On December 18, 2014, the Council on Environmental Quality (CEQ) released revised draft guidance that superseded the draft GHG and climate change guidance released by CEQ in February 2010. The revised draft guidance applied to all proposed federal agency actions, including land and resource management actions. This guidance explained that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate change for the environmental effects of a proposed action (CEQ 2014). The guidance encouraged agencies to draw from their experience and expertise to determine the appropriate level (broad, programmatic, or project- or site-specific) and type (quantitative or qualitative) of analysis required to comply with the National Environmental Policy Act. The guidance recommended that agencies consider emissions of 25,000 MT CO<sub>2e</sub> per year as a reference point below which a quantitative analysis of GHG emissions is not recommended unless it is easily accomplished based on available tools and data (CEQ 2014).

On August 1, 2016, an updated version of the CEQ guidelines was published. This document did not establish a numeric threshold for GHG emissions. Agencies were directed to consider the potential effects of a proposed action and alternatives on climate change as indicated by assessing GHG emissions (e.g., to include carbon sequestration where applicable) (CEQ 2016). However, this guidance was withdrawn on April 5, 2017 (CEQ 2017). The withdrawn guidance was not a regulation and the withdrawal does not change any law, regulation, or other legally binding requirement.

### **U.S. Environmental Protection Agency and National Highway Traffic Safety Administration Standards**

EPA and the National Highway Traffic Safety Administration (NHTSA) implemented national GHG emission and fuel economy standards for model year 2012–2016 light-duty cars and trucks. The second phase of the standards includes GHG and fuel economy standards for model years 2017–2025. The 2017–2025 standards are anticipated to save approximately 4 billion barrels of oil and 2 billion MT of GHG emissions. In 2025, if all standards are met through fuel efficiency improvements, the average industry fleetwide fuel efficiency for light-duty cars and trucks would be approximately 54.5 miles per gallon (EPA 2012).

In addition to standards for light-duty cars and trucks, EPA and NHTSA have implemented Phase 1 of the Medium- and Heavy-Duty Vehicle GHG Emissions and Fuel Efficiency Standards, which apply to model years 2014–2018. It is anticipated that medium- and heavy-duty vehicles built to these standards from 2014–2018 will reduce CO<sub>2</sub> emissions by approximately 270 million MT over their lifetimes (EPA 2012). Phase 2 of these standards apply to model years 2021–2027 and would reduce GHG emissions by 1 billion MT over the lifetimes of those vehicles (EPA 2015).

### **Renewable Fuel Standard Program**

Created by the Energy Policy Act of 2005, which amended the CAA, the Renewable Fuel Standard program established requirements for volumes of renewable fuel used to replace petroleum-based fuels. The four renewable fuels accepted as part of the Renewable Fuel Standard program are biomass-based diesel, cellulosic biofuel, advanced biofuel, and total renewable fuel. The 2007 Energy Independence and Security Act expanded the program and its requirements to include long-term goals of using 36 billion gallons of renewable fuels and extending annual renewable-fuel volume requirements to year 2022. The four renewable fuels have specific renewable fuel-blending requirements for obligated parties such as refiners and importers of gasoline or diesel fuel. EPA implements the program in consultation with U.S. Departments of Agriculture and Energy. Gasoline and diesel refiners and importers (Obligated Parties) are required to demonstrate compliance with the Renewable Fuel Standard program.

## **3.5.2.2 State Plans, Policies, Regulations, and Laws**

The legal framework for GHG emission reductions has come about through executive orders, legislation, and regulations. The major components of California's climate change initiatives are outlined below.

### **Assembly Bill 1493**

Assembly Bill (AB) 1493 required that ARB develop and adopt, by January 1, 2005, regulations that achieve “the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the state.” These stricter emissions standards were designed to apply to automobiles and light trucks beginning with model year 2009. In June 2009, the EPA Administrator granted a CAA waiver of preemption to the State of California, allowing the state to implement its own GHG emissions standards for motor vehicles beginning with model year 2009. California agencies worked with federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger car model years 2017–2025.

### **Executive Order S-3-05**

Executive Order S-3-05, issued in recognition of California's vulnerability to the effects of climate change, set forth the following target dates by which statewide GHG emissions would be progressively reduced: 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.

### **Assembly Bill 32**

In 2006, California enacted AB 32, the California Global Warming Solutions Act (California Health and Safety Code Section 38500 et seq.). AB 32 further details and puts into law the midterm GHG reduction target established in Executive Order S-3-05: reduce GHG emissions to 1990 levels by 2020. AB 32 also identifies ARB as the state agency responsible for designing and implementing emissions limits, regulations, and other measures to meet the target.

In December 2008, ARB adopted the Climate Change Scoping Plan (Scoping Plan), which includes California's main strategies for achieving the GHG reductions required by AB 32 (ARB 2008). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of California's GHG inventory. ARB acknowledges that land use planning decisions will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors.

ARB is required to update the Scoping Plan at least once every 5 years to evaluate progress and develop future inventories that may guide this process. ARB approved the *First Update to the Climate Change Scoping Plan: Building on the Framework* (2014 Scoping Plan Update) in June 2014 (ARB 2014). The 2014 Scoping Plan Update includes a status of the 2008 Scoping Plan measures and other federal, state, and local efforts to reduce GHG emissions in California, and potential actions to further reduce GHG emissions by 2020. The 2014 Scoping Plan Update determined that the state is on schedule to achieve the 2020 target (i.e., 1990 levels by 2020). However, an accelerated reduction in GHG emissions is required to achieve the Executive Order S-3-05 emissions reduction target of 80 percent below 1990 levels by 2050.

The statewide measures adopted under the direction of AB 32, and as outlined in the Scoping Plan, would reduce GHG emissions associated with existing and new development. In November 2017, ARB released *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target* (2017 Scoping Plan Update) (ARB 2017c). The 2030 target of a 40 percent reduction in GHG emissions below 1990 statewide GHG emissions (consistent with Executive Order B-30-15, which is outlined below) guides the 2017 Scoping Plan Update (ARB 2017c). The 2017 Scoping Plan Update establishes a plan of action, consisting of a variety of strategies to be implemented rather than a single solution, for California to reduce statewide emissions by 40 percent by 2030 compared to 1990 levels (ARB 2017c).

### **Executive Order B-30-15**

In April 2015, Governor Edmund G. Brown Jr. issued an executive order establishing a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. The emission reduction target acts as an interim goal between the AB 32 goal (i.e., achieve 1990 emission levels by 2020) and the goal in Governor Brown's Executive Order S-3-05 of reducing statewide emissions 80 percent below 1990 levels by 2050. In addition, the executive order aligns California's 2030 GHG reduction goal with the European Union's reduction target (i.e., 40 percent below 1990 levels by 2030) that was adopted in October 2014.

### **Senate Bill 32**

Approval of Senate Bill (SB) 32 in September 2016 extended the provisions of AB 32 from 2020 to 2030 with a new target of 40 percent below 1990 levels by 2030. The companion bill, AB 197, added two nonvoting members to ARB; created the Joint Legislative Committee on Climate Change Policies, consisting of at least three senators and three Assembly members; required additional annual reporting of emissions; and required that Scoping Plan updates include alternative compliance mechanisms for each statewide reduction measure, along with market-based compliance mechanisms and potential incentives.

### **Executive Order S-1-07**

Executive Order S-1-07 acknowledges that the transportation sector is the main source of GHG emissions in California. The order established a goal of reducing the carbon intensity of fuels for mobile, stationary, and portable emissions sources sold in California by a minimum of 10 percent by 2020. It also directed ARB to determine whether



this Low Carbon Fuel Standard could be adopted as a discrete, early-action measure after meeting the mandates in AB 32. ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

#### **Senate Bill 97**

SB 97, signed by the Governor in August 2007, acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research to prepare, develop, and transmit to the California Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The California Natural Resources Agency adopted those guidelines on December 30, 2009, and the guidelines became effective March 18, 2010.

#### **Senate Bill 375**

SB 375, signed by the Governor in September 2008, aligned regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 required metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy (SCS) that will prescribe land use allocation in that MPO's regional transportation plan. ARB adopted regional GHG targets for passenger vehicles and light trucks for 2020 and 2035 for the 18 MPOs in California. If the combination of measures in the SCS would not meet the regional targets, the MPO must prepare a separate "alternative planning strategy" to meet the targets.

#### **California Air Resources Board Advanced Clean Cars Program/Zero Emission Vehicle Program**

AB 1493 (Chapter 200, Statutes of 2002), also known as the Pavley regulations, required ARB to adopt regulations by January 1, 2005, that would result in the achievement of the "maximum feasible" reduction in GHG emissions from vehicles used in the state primarily for noncommercial, personal transportation.

In January 2012, ARB approved a new emissions-control program for model years 2017–2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars (California Code of Regulations [CCR] Title 13, Sections 1962.1 and 1962.2 [13 CCR Sections 1962.1 and 1962.2]). The Advanced Clean Cars requirements include new GHG standards for model year 2017–2025 vehicles. ARB anticipates that the new standards will reduce motor vehicle GHG emissions by 34 percent in 2025. A midterm review of the program, released in 2017, includes ARB's technical analysis of adopted GHG and particulate matter emission standards for low-emission vehicles and regulatory requirements for zero-emission vehicles, as well as recommended next steps for each of the adopted requirements (ARB 2017d).

The Advanced Clean Cars program also includes the Low-Emission Vehicle III amendments to the low-emission vehicle regulations (13 CCR Section 1900 et seq.), the Zero-Emission Vehicle program, and the Clean Fuels Outlet regulation. The Zero-Emission Vehicle program is designed to achieve California's goals for long-term emission reductions by requiring manufacturers to offer for sale specific numbers of the very cleanest cars available. These zero-emission vehicles, which include battery electric, fuel cell, and plug-in hybrid electric vehicles, have now entered the marketplace. They are expected to be fully commercial by 2020. The Clean Fuels Outlet regulation is intended to ensure that fuels such as electricity and hydrogen are available to meet the needs of the new advanced technology vehicles as they come to market.

#### **Executive Order B-16-12**

Executive Order B-16-12 orders state entities under the direction of the Governor including ARB, the California Energy Commission, and the California Public Utilities Commission to support the rapid commercialization of zero-emission vehicles. The order directs these entities to achieve various benchmarks related to zero-emission vehicles, including:

- infrastructure to support up to 1 million zero-emission vehicles by 2020,
- widespread use of zero-emission vehicles for public transportation and freight transport by 2020,
- more than 1.5 million zero-emission vehicles on California roads by 2025,
- annual displacement of at least 1.5 billion gallons of petroleum fuels by 2025, and
- a reduction of GHG emissions from the transportation sector equaling 80 percent below 1990 levels by 2050.

#### **Executive Order S-01-07 (Low Carbon Fuel Standard)**

Executive Order S-01-07 (17 CCR Section 95480 et seq.) requires the state to achieve a 10 percent or greater reduction by 2020 in the average fuel carbon intensity for transportation fuels in California regulated by ARB. ARB

identified the Low Carbon Fuel Standard as a discrete early-action item under AB 32, and issued the final resolution (No. 09-31) adopting the standard on April 23, 2009. ARB readopted the Low Carbon Fuel Standard in 2015.

#### **Senate Bills 1078 and 107, Executive Orders S-14-08 and S-21-09, and Senate Bill 350**

SB 1078 (Chapter 516, Statutes of 2002) required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

Executive Order S-14-08 expanded the state's Renewable Portfolio Standard to 33 percent renewable power by 2020. Executive Order S-21-09 directs ARB under its AB 32 authority to enact regulations to help the state meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020.

The 33 percent-by-2020 goal and requirements were codified in April 2011 with SB X1-2. This new Renewable Portfolio Standard applies to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. Consequently, PG&E, which would be the electricity provider for the proposed project, must meet the 33 percent goal by 2020. SB 350 (2015) increased the renewable-source requirement to 50 percent by 2030, which was further increased under SB 100 in 2018 to 60 percent by 2030 and requiring all the State's electricity to come from carbon-free resources by 2045.

These requirements reduce the carbon content of electricity generation, and would reduce GHG emissions associated with both existing and new development, including new development on the project site.

The California Public Utilities Commission reported that California's three largest investor-owned utilities—PG&E, Southern California Edison, and San Diego Gas and Electric Company—collectively provided 36 percent of their 2017 retail electricity sales using renewable sources and are continuing progress toward meeting the future RPS requirements (CPUC 2019).

#### **California Green Building Standards Code**

In January 2010, the State of California adopted the California Green Building Standards Code, which establishes mandatory green building standards for all buildings in California. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. Part of the intent of the CalGreen code is to provide cost-effective strategies to help meet California's GHG reduction mandates.<sup>2</sup> These standards include a set of minimum requirements and more rigorous voluntary measures for new construction projects to achieve specific green building performance levels. This code went into effect as part of local jurisdictions' building codes on January 1, 2011. The 2013 update to the California Green Building Standards Code became effective in January 2014. Another update to the energy efficiency standards became effective January 1, 2017. The CALGreen code was most recently updated in 2018 and 2019, with new measures taking effect on January 1, 2020. Updates to the code improve energy efficiency of newly constructed buildings and of additions and alterations to existing buildings compared to previous versions of the code.

### **3.5.2.3 Regional and Local Plans, Policies, Regulations, and Ordinances**

#### **Sacramento Area Council of Governments**

SACOG is designated by the U.S. government and the State of California as the MPO for the area and is responsible for developing a regional transportation plan (i.e., MTP) in coordination with Sacramento, Yolo, Yuba, Sutter, El Dorado, and Placer counties and the 22 cities within those counties (excluding the Tahoe Basin). This plan incorporates countywide transportation planning covering a 20-year planning horizon, which must be updated every 4 years. As a requirement of SB 375, MPOs need to develop a sustainable communities strategy as part of the MTP to identify strategies and policies to reduce GHG emissions from passenger vehicles to meet state targets established by ARB.

SACOG's MTP/SCS for 2035 was adopted on April 19, 2012. SACOG's MTP/SCS calls for meeting and exceeding ARB's GHG reduction goals for passenger vehicles and light-duty trucks of 7 percent by 2020 and 16 percent by 2035, where 2005 is the baseline year for comparison (SACOG 2012). SACOG's 2016 MTP/SCS was adopted on February 18, 2016 (SACOG 2016). The 2016 MTP/SCS demonstrates how the region can accommodate expected

<sup>2</sup> For more detail, please see the California Building Standards Commission website: <https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen>.



regional population growth and the increased demand for transportation in the region, while also showing that the region could achieve a reduction in per-capita passenger VMT.

SACOG has created a framework for describing the MTP/SCS that is made up of community types. Local land use plans (e.g., adopted and proposed general plans, specific plans, master plans, corridor plans) were divided into one of five community types based on the location of the plans. The project site is in the community type identified by the MTP/SCS as a “Developing Community” (SACOG 2016:27):

Developing Communities are typically, though not always, situated on vacant land at the edge of existing urban or suburban development; they are the next increment of urban expansion.

Developing Communities are identified in local plans as special plan areas, specific plans, or master plans and may be residential-only, employment-only, or a mix of residential and employment uses. Transportation options in Developing Communities often depend, to a great extent, on the timing of development. Bus service, for example, may be infrequent or unavailable today, but may be available every 30 minutes or less once a community builds out. Walking and bicycling environments vary widely though many Developing Communities are designed with dedicated pedestrian and bicycle trails.

The MTP/SCS includes 31 policies and multiple strategies to address the principles of smart land use; environmental quality and sustainability; financial stewardship; economic vitality; access and mobility; and equity and choice.

Highlights of MTP/SCS policies include:

- Implement the Rural-Urban Connection Strategy (RUCS) which ensures good rural-urban connections and promotes the economic viability of rural lands while also protecting open space resources to expand and support the implementation of the Blueprint growth strategy and the MTP/SCS.
- Support and invest in strategies to reduce vehicle emissions that can be shown as cost effective to help achieve and maintain clean air and better public health.
- Use the best information available to implement strategies and projects that lead to reduced GHG emissions.
- Consider strategies to green the system, such as quieter pavements, cleaner vehicles, and lower energy equipment where cost effective, and consider regional funding contributions to help cover the incremental cost.
- SACOG encourages locally determined developments consistent with Blueprint principles and local circulation plans to be designed with walking, bicycling, and transit use as primary transportation consideration.

### Placer County Air Pollution Control District

Placer County Air Pollution Control District (PCAPCD) regulates local air quality and air pollutant emissions sources in Placer County. In its *CEQA Air Quality Handbook*, PCAPCD includes a chapter that outlines guidance for analyzing construction emissions, including GHG emissions, and a GHG-specific chapter that discusses the recommended approach to evaluating operational GHG emissions. PCAPCD also includes a list of analysis expectations and methodologies for CEQA analyses.

On October 13, 2016, the PCAPCD Board of Directors adopted the Review of Land Use Projects under CEQA Policy, which established thresholds of significance for GHG emissions. In developing the thresholds, the district took into account health-based air quality standards and the strategies to attain air quality standards, historical CEQA project review data in Placer County, statewide regulations to achieve GHG emission reduction targets, and the geographic and land use features of Placer County. PCAPCD’s GHG thresholds of significance are discussed further in Section 3.5.3.2, “Thresholds of Significance,” below.

## 3.5.3 Impact Analysis

### 3.5.3.1 Methodology

GHG emissions have the potential to adversely affect the environment because such emissions contribute cumulatively to global climate change. It is unlikely that a single project will contribute significantly to climate change, but cumulative emissions from many projects could affect global GHG concentrations and the climate system. Therefore, impacts are analyzed within the context of the potential contribution to the cumulatively significant impact of climate change.

To address the criteria for GHG impact analysis listed in Appendix G of the State CEQA Guidelines, a quantitative analysis of project-related GHG emissions was conducted:

- **Construction:** GHG emissions were estimated for off-road construction equipment, material delivery trucks, haul trucks, and construction worker vehicles. Construction emissions were modeled using California Emissions Estimator Model (CalEEMod) Version 2016.3.2 (CAPCOA 2016), as described in more detail in Section 3.3, “Air Quality.” Please see Appendix B of this EIR for modeling details, assumptions, inputs, and outputs.
- **Operation:** The proposed project’s operational GHG emissions were estimated using methods similar to those described in Section 3.3, “Air Quality.” CalEEMod, EMFAC2017, and OFFROAD 2017 were used to estimate direct GHG emissions associated with mobile, area, and energy sources, similar to air pollutant emissions. CalEEMod also estimates indirect GHG emissions associated with solid waste disposal and water consumption. Please see Appendix B1 of this EIR for modeling details, assumptions, inputs, and outputs.
- In order to provide a more comprehensive assessment of cumulative GHG emissions related effects, the proposed project’s construction related emissions were amortized over the estimated 20-year lifetime of the project and added to the operational emissions. The annual operational emissions, along with the amortized construction emissions were compared with the applicable significance threshold to determine cumulative significance.

### 3.5.3.2 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in 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; or
- conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Whether or not implementation of the proposed project would generate GHG emissions that would have a significant impact on the environment depends on whether the rate of GHG emissions associated with the project would provide its share of AB 32, Executive Order B-30-15, SB 32, and Executive Order S-3-05 emissions reductions.

Pursuant to CEQA (14 CCR § 15064.7), public agencies such as local air quality districts are encouraged to develop and publish thresholds of significance, which are defined as an identifiable quantitative, qualitative or performance level established to measure an environmental effect. Accordingly, quantitative thresholds established in the Review of Land Use Projects under CEQA Policy were adopted by PCAPCD Board of Directors on October 13, 2016. These thresholds were developed with the intent of ensuring that new development would not interfere with state efforts to reduce GHG emissions; this was the first time that quantitative GHG thresholds had been adopted by PCAPCD. As described in PCAPCD’s Threshold Justification Report, PCAPCD staff developed the new GHG thresholds to support the state’s GHG reduction goals, specifically AB 32, SB 32, and Executive Order S-3-05, but with consideration of conditions unique to Placer County (PCAPCD 2016).

PCAPCD’s recommended GHG emissions significance thresholds are as follows: a “bright line” threshold of 10,000 MT CO<sub>2e</sub> per year for the construction and operational phases of development projects, or for stationary sources (PCAPCD 2017); and a “*de minimis*” threshold of 1,100 MT CO<sub>2e</sub> per year for the operational phases of projects. According to PCAPCD’s guidance, one of the efficiency thresholds should be used for projects where the operational phase would exceed this *de minimis* level. The efficiency thresholds reflect different expectations for urban and rural development in Placer County and for residential and nonresidential developments:

- **Residential projects:** Urban threshold, 4.5 MT CO<sub>2e</sub> per year per capita; rural threshold, 5.5 MT CO<sub>2e</sub> per year per capita
- **Nonresidential projects:** Urban threshold, 26.5 MT CO<sub>2e</sub> per year per thousand square feet of building space; rural threshold, 27.3 MT CO<sub>2e</sub> per year per thousand square feet of building space

According to PCAPCD, local lead agencies would identify whether each project is in an urban or a rural setting (PCAPCD 2016:19). As identified in the MTP/SCS, Loomis is considered a small, rural community; therefore, the rural efficiency matrix threshold of 27.3 MT CO<sub>2e</sub> per year per thousand square feet of building space is considered as a part of this analysis.

In order to evaluate whether the proposed project would generate GHG emissions that may have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, the proposed project's GHG construction emissions are compared to the PCAPCD "bright line" threshold and operational plus amortized construction emissions are compared to PCAPCD efficiency threshold identified in Table 3.5-2.

### 3.5.3.3 Environmental Impacts and Mitigation Measures

**Impact 3.5-1: Generation of Greenhouse Gas Emissions.** *Construction and operational activities associated with the proposed project would generate GHG emissions in exceedance of the PCAPCD-recommended thresholds of significance. Construction and operation of the proposed project is considered to result in **cumulatively considerable contribution** to the **significant cumulative** impact of climate change.*

Implementing the proposed project under any of the Project Driveway Access Options would generate short-term construction-related and long-term operational GHG emissions. Construction-related GHG emissions would cease after construction of the proposed project. Operational emissions are considered long term and are assumed to occur for the lifetime of the project.

During construction of the proposed project, exhaust GHG emissions would be generated from a variety of sources such as heavy-duty construction and clearing equipment, haul trucks, material delivery trucks, and construction worker vehicles. Like air pollutant emissions, daily GHG emissions would vary by type of construction activities planned for each day. For example, daily GHG emissions generated during construction equipment-intensive phases would be higher than daily emissions generated during less equipment-intensive phases. Total construction-related GHG emissions are anticipated to be generated over a 6-month period, and the maximum annual emissions are considered for purposes of the impact analysis.

Operational GHG emissions are distinguished by direct and indirect GHG emissions. Direct GHG emissions are generated at the location of consumption or use; for example, mobile-source emissions are direct emissions because GHG emissions are generated as a vehicle begins to move. Conversely, indirect emissions occur at a different time or location from the point of consumption or use. For example, electricity-related GHG emissions are indirect emissions because, as consumers use electricity at their workplace, the fuel combustion and emissions associated with creating that electricity likely occurred off-site or at a different time. Other indirect GHG emissions include emissions from solid waste disposal and water consumption.

As part of project development, siting and design considerations that address the intent to minimize GHG emissions were taken into consideration and implemented as part of the proposed project.

Regarding project siting and as described in Section 3.1.2, "Regional Planning," of this EIR, the Loomis General Plan aims to maintain the Town's rural character by directing future commercial uses along Sierra College Boulevard near I-80 and intensification of use through redevelopment in the downtown area (Town of Loomis 2001). These planning strategies were reflected in the growth forecasts of the MTP/SCS, which designates the project site as in a Center and Corridor Community; meaning siting and operation of the proposed project at this location supports the intent of the MTP/SCS strategy to achieve a reduction in GHG emissions by implementing a compact urban development pattern. The plans and programs outlined in the MTP/SCS were evaluated by SACOG using travel demand modeling to determine the performance of the transportation system and future land use patterns. SACOG found that the MTP/SCS, including its land use and transportation components, would achieve statewide GHG emission targets under SB 375, a finding that was confirmed by ARB.

Table 3.5-2 lists the proposed project's maximum annual construction-related GHG emissions and annual operational emissions by source. As shown in Table 3.5-2, the proposed project's construction-related emissions would not exceed the PCAPCD bright-line threshold of significance of 10,000 MT CO<sub>2</sub>e per year. However, long-term (annual) operational GHG emissions would exceed PCAPCD's de minimis threshold of significance of 1,100 MT CO<sub>2</sub>e per year outlined in the PCAPCD's CEQA Air Quality Handbook. Exceedance of the de minimis threshold requires the project to undergo a secondary level of review that considers forecast emissions relative to the project footprint. Using the PCAPCD methodology, the proposed project's operational GHG emissions of 6,159 MT CO<sub>2</sub>e per year were calculated relative to project size and expressed in terms of calculated MT CO<sub>2</sub>e per year per 1,000 square feet. For this calculation, the project square footage used was that of the proposed warehouse, up to approximately 155,000 square feet. Compared to PCAPCD's efficiency matrix-defined threshold of 27.3 MT CO<sub>2</sub>e per year per

1,000 square feet, the proposed project's annual operational emissions are estimated to be 40 MT CO<sub>2</sub>e per year per 1,000 square feet, which exceeds the PCAPCD-recommended threshold.

**Table 3.5-2. Modeled Greenhouse Gas Emissions for Construction and Operations: All Project Driveway Access Options**

Emissions Source	GHG Emissions (MT CO <sub>2</sub> e/year)
<b>Construction GHG Emissions</b>	
Annual Construction Emissions	385
<b>Operational GHG Emissions</b>	
Area	0.018
Energy	678
Mobile <sup>1</sup>	5,095
Waste	343
Water	42
<b>Total<sup>2</sup> Annual Operational Emissions</b>	<b>6,159</b>
<b>Total<sup>3</sup> Annual Operational + Amortized Construction Emissions</b>	<b>6,178</b>
<b>Total<sup>3</sup> Annual Project Emissions per 1,000 Square Feet<sup>3</sup></b>	<b>40</b>
<b>PCAPCD GHG Efficiency Threshold</b>	<b>27.3</b>
<b>Exceed threshold?</b>	<b>Yes</b>

Notes:

CO<sub>2</sub>e = carbon dioxide equivalent; GHG = greenhouse gas; MT = metric tons; PCAPCD = Placer County Air Pollution Control District

<sup>1</sup> Mobile emission calculations include those calculated in CalEEMod based upon new VMT projected in the Transportation Impact Analysis for customer and worker trips, plus those calculated using EMFAC2017 and OFFROAD2017 Emissions Inventory for fuel and warehouse delivery truck trips, Transport Refrigeration Units, and on-site idling of trucks and vehicles in queue at the fueling center.

<sup>2</sup> Totals may not add due to rounding.

<sup>3</sup> Annual emissions per 1,000 square feet calculated based upon approximate warehouse size of 155,000 square feet.

Source: Modeled by AECOM in 2019. See Appendix B for modeling details, assumptions, inputs, and outputs. The trip rates and lengths in CalEEMod were adjusted so that the total net travel demand (vehicle miles traveled, or "VMT") matches the project-specific estimates and delivery and queuing-related emissions were estimated outside of CalEEMod.

Several sources are responsible for annual operational project emission estimates, the two primary sources of which are mobile and energy.

Nearly 80 percent of the estimated emissions are attributable to mobile source operations. Sources of mobile air pollutant emissions would be generated by customer and employee trips, idling of customer vehicles in queue at the fueling center, truck trips and truck on-site idling for warehouse goods and fuel delivery, and the use of TRUs on up to 4 of the daily warehouse goods delivery trucks.

GHG emissions associated with operational energy requirements contributes to approximately 10 percent of total annual GHG emissions. As detailed in Chapter 2, "Project Description," the proposed project includes several energy conserving features for the building itself, including constructing the building to be solar-ready, as well as parking area and site landscaping. These features would reduce indirect GHG emissions associated with off-site energy production to support operations of the project site. However, to avoid an overestimate of energy savings, the project design features outlined in the project description are not accounted for in the energy-related emissions shown in Table 3.5-2 for the purposes of impact determination.

In conclusion, the project design incorporates active and passive features to reduce GHG emissions. The proposed warehouse building would include passive lighting; computer-controlled monitoring equipment and high-efficiency heating, ventilation, and air conditioning (HVAC) equipment; and the applicant proposes use of building materials that promote energy efficiencies in exceedance of state and federal code requirements. In addition, development of the proposed project along Sierra College Boulevard, which is the commercial core for the Town of Loomis, would be consistent with the land use patterns and growth predictions that form the basis for policies outlined in the MTP/SCS designed to attain statewide GHG reduction goals. Notwithstanding the project siting and design features and consistency with the regional MTP/SCS, the proposed project would generate a level of GHG emissions that would exceed PCAPCD efficiency thresholds. The contribution of GHG emissions associated with the proposed project to climate change would be **cumulatively considerable**.

**Mitigation Measure GHG-1: Implement Operational Strategies to Encourage Fuel-Efficient Transportation to and from the Proposed Warehouse and Fueling Center.**

- Prior to Design Review approval, the Site Plan shall show that the project applicant has provided 63 (approximately eight percent of total parking spaces) preferential parking spaces for clean air vehicles, including low-emitting, fuel-efficient, and carpool/van pool vehicles. Such stalls shall be clearly demarcated with signage as approved by the Design Site Review Committee.
- The project shall implement an employee Transportation Demand Management (TDM) program to reduce single-occupancy vehicle trips that would otherwise be made by site employees. The TDM program will identify measures that encourage employees to use alternatives to driving alone when traveling to and from work. Key elements of the TDM program are expected to include:
  - encouraging ride sharing in the form of employee carpools and vanpools
  - an on-site employee transportation coordinator (ETC) who can assist and be responsible for promoting, facilitating, and coordinating carpools and vanpools for employees with similar shift patterns
  - an employee orientation program addressing commuting options
  - potential incentives encouraging employee participation in a rideshare program
  - encouraging bicycling and walking as viable commute options, including provision of bicycle racks and employee lockers for storage of change clothing and personal items to provide more convenience to bicycle and walking commuters
  - an employee kitchen and café/deli services on site that are available to employees, reducing the need for employees to travel off site for meals and/or break periods
- Install 67 (approximately eight percent of total parking spaces) electric vehicle charging stations within the project site, with signage adequately identifying such areas; these spaces could be included with the preferential parking spaces, as well.
- Diesel trucks shall be prohibited from idling more than five minutes. Prior to the issuance of a Building Permit, the applicant shall show on the submitted building elevations that all truck loading and unloading docks shall be equipped with one 110/208 volt power outlet for every two dock doors. Diesel trucks intending to idle for more than the allotted time shall be required to connect to the 110/208 volt power to run any auxiliary equipment. A minimum 2'x3' sign which indicates "Diesel Engine Idling limited to a maximum of five minutes" shall be included with the submittal of building plans.

**Significance after Mitigation**

Implementation of Mitigation Measure GHG-1 would reduce GHG emissions associated with operational transportation activities that would occur as a result of the proposed project. The provision of clean air vehicle preferential parking could help to encourage participation in the employee carpool/vanpool program, although it is not possible to quantify the benefit of this type of measure. An employee carpool/vanpool program could help to reduce operational GHG emissions of the proposed project if employees participate and low or zero emission vehicles are used in the carpool and vanpools. Employee-related trips account for approximately 22 percent of the total VMT and mobile source emissions account for approximately 83 percent of the project's estimated operational GHG emissions. Therefore, if an employee rideshare program is able to reduce employee-related VMT by 25 percent, the project's total emissions could be reduced by approximately 5 percent, which is not sufficient to get below the PCAPCD significance threshold.

Installation of electric vehicle chargers helps to provide charging to vehicles that have no direct GHG emissions, although there would still be indirect emissions associated with production of the electricity required to charge vehicles on-site. The model used to estimate GHG emissions associated with passenger vehicle trips to and from the site includes assumptions on what portion of the vehicle fleet would be electric vehicles relative to other fuel types. Assuming the store is open approximately 1,640 hours per year and that all 67 chargers are charging during all open hours, the mileage driven by charged electric vehicles would reduce annual GHG emissions by approximately 390

MT CO<sub>2e</sub>.<sup>3</sup> However, electric vehicles are already assumed to be a part of the fleet whose emissions are included in the estimates included in this section, and even if this net change was applied to the emissions estimate, this would not be sufficient to get the emissions rate below PCAPCD's threshold.

Reducing idling and providing electrification loading areas will reduce potential GHG emissions during idling and eliminate the need for idling for trucks with refrigeration units. While this measure will reduce potential GHG emissions by reducing idling, the vast majority of GHG emissions are associated with vehicular emissions from moving vehicles.

In addition, increased fuel efficiency standards and vehicle emissions standards anticipated to be enforced at a State level in future years would reduce GHG emissions per VMT, and therefore reduce GHG emissions associated with proposed project's mobile operations. However, fuel and vehicle emissions standards are not within the Town's control and even with implementation of available mobile GHG reduction strategies identified in Mitigation Measure GHG-1, GHG emissions associated with the proposed project would still exceed the PCAPCD-recommended threshold of significance and this impact would be **cumulatively considerable and unavoidable**.

**Impact 3.5-2: Conflict with an Applicable Plan, Policy, Or Regulation Adopted for the Purpose of Reducing the Emissions of GHGs.** *Construction and operational activities associated with the proposed project would generate GHG emissions in exceedance of the PCAPCD-recommended thresholds of significance, which were developed to allow lead agencies in the county to assess consistency with the State legislative framework for GHG emissions and SB 32, in particular. The project's impact is **significant**.*

As noted previously, whether or not implementation of the proposed project would generate GHG emissions that would have a significant impact on the environment depends on whether the rate of GHG emissions associated with the project would provide its share of AB 32, Executive Order B-30-15, SB 32, and Executive Order S-3-05 emissions reductions. PCAPCD thresholds used in evaluating the proposed project were developed with the intent of ensuring that new development would not interfere with state efforts to reduce GHG emissions. The GHG thresholds were developed to support the state's GHG reduction goals, specifically AB 32, SB 32, and Executive Order S-3-05, but with consideration of conditions unique to Placer County (PCAPCD 2016).

The primary plan concerning reduction of GHG emissions from mobile sources that is applicable to this area is the SACOG MTP/SCS. SACOG is designated by the U.S. government and the State of California as the Metropolitan Transportation Planning Organization responsible for developing a regional transportation plan (i.e., MTP) in coordination with Sacramento, Yolo, Yuba, Sutter, El Dorado, and Placer counties and the 22 cities within those counties (excluding the Tahoe Basin). The 2016 MTP/SCS demonstrates how the region can accommodate expected population growth in the region through implementing a land use strategy prioritizing compact development patterns that focus on vacant infill parcels, such as the project site, and redevelopment of existing uses to improve mobility and achieve a reduction in per-capita passenger VMT. The forecasts contained in the MTP/SCS are based on local land use plans that identify the type and location of future growth within the region, between jurisdictions and among housing place types (i.e., infill and greenfield development).

The project site is in the community type identified by the MTP/SCS as a "Developing Community" (SACOG 2016:27):

Developing Communities are typically, though not always, situated on vacant land at the edge of existing urban or suburban development; they are the next increment of urban expansion. Developing Communities are identified in local plans as special plan areas, specific plans, or master plans and may be residential-only, employment-only, or a mix of residential and employment uses. Transportation options in Developing Communities often depend, to a great extent, on the timing of development. Bus service, for example, may be infrequent or unavailable today, but may be available every 30 minutes or less once a community builds out. Walking and bicycling environments vary widely though many Developing Communities are designed with dedicated pedestrian and bicycle trails.

---

<sup>3</sup> This assumes an average mileage per hour of charge of 15 and an average fuel economy of an electric vehicle of 0.25 kWh/mile based on California Air Resources Board, Electric Vehicle (EV) Charging Infrastructure: Multifamily Building Standards, Appendix H: Greenhouse Gas Reduction Estimates, Table H1. This assumes an electricity emissions factor of 294 pounds per MWh. Finally, these calculations use emissions factors from EMFAC 2017 for the LDA vehicle class, aggregated speeds, RUNEX emissions, for Placer County, using ARB protocols for global warming potential for CH<sub>4</sub> and N<sub>2</sub>O.



Developing Communities are planned for the next phase of development, and are typically adjacent to Existing Communities (another SACOG SCS community type). Under the MTP/SCS, by 2036, Developing Communities are assumed to be fully or partially developed, and SACOG anticipates that the share of employment in Developing Communities, such as the project site will increase from three percent in 2012 to 12 percent in 2036.

The MTP/SCS includes 31 policies and multiple strategies to address the principles of smart land use; environmental quality and sustainability; financial stewardship; economic vitality; access and mobility; and equity and choice. Many of the policies are only indirectly related to the project. For example, Policy 1 is related to providing information, tools, and incentives to SACOG's member jurisdictions to help implement Blueprint principles and Policy 2 is about providing education on the relationship between smart growth, transportation, and resource conservation.

Policy 3 establishes that "SACOG encourages local jurisdictions in developing community activity centers well-suited for high-quality transit service and complete streets." Placer County Transit operates three routes in the vicinity of the project site. The Auburn to Light Rail bus route operates on one-hour headways during the morning and afternoon commute periods and stops at the Sierra College Transfer Center. The Lincoln/Sierra College bus route operates on one-hour headways between Sierra College and the city of Lincoln. The Taylor Road Shuttle operates on two-hour headways during the morning and afternoon commute periods and travels between Auburn and the Sierra College Transfer Center. The Taylor Road Shuttle provides the nearest service to the project site along Sierra College Boulevard. The Town of Loomis Bicycle Transportation Plan identifies existing and planned bicycle facilities. The existing bicycle system consists of a series of Class II facilities (on-street striped bike lanes) on major arterials. Class II lanes exist on Taylor Road between Sierra College Boulevard and the northern town limits. A network of sidewalks, crosswalks, pedestrian signals, and curb ramps is provided in the vicinity of the project site; however, there are sidewalk gaps in the vicinity of the project site. Partial sidewalks are provided on Sierra College Boulevard, King Road, Taylor Road, and Horseshoe Bar Road. Crosswalks are provided at all signalized intersections and at several other unsignalized locations. The proposed project would provide new pedestrian facilities (sidewalks) along the site frontages on Sierra College Boulevard and Brace Road. The frontage improvements would provide connectivity with existing facilities along both roadways and with new pedestrian facilities that would be provided on the project site. Pedestrian crosswalks would be provided at proposed new signalized Costco site access intersection on Sierra College Boulevard. The project would reconstruct the Type II bicycle facility on Sierra College Boulevard northbound along the site frontage. In addition, the project would provide on-site bicycle parking for both members and employees.

Policy 6 establishes that "SACOG encourages local governments to direct greenfield developments to areas immediately adjacent to the existing urban edge through data-supported information, incentives and pursuit of regulatory reform for cities and counties." The project site is surrounded by existing development to the north, east, and southwest, and undeveloped property planned for development is west and southeast of the project site.

The project does not conflict with any applicable policy, plan, or regulation in a way that would result in any adverse physical environmental effect beyond that already disclosed in Impact 3.5-1. Since the project would result in emissions above the threshold adopted by PCAPCD, which was intended support the State legislative framework, the project's impact is considered **significant**. As discussed previously, implementation of Mitigation Measure GHG-1 would reduce GHG emissions associated with operational transportation activities that would occur as a result of the proposed project. In addition, increased fuel efficiency standards and vehicle emissions standards anticipated to be enforced at a State level in future years would reduce GHG emissions per VMT, and therefore reduce GHG emissions associated with proposed project's mobile operations. However, fuel and vehicle emissions standards are not within the Town's control and even with implementation of available mobile GHG reduction strategies identified in Mitigation Measure GHG-1, GHG emissions associated with the proposed project would still exceed the PCAPCD-recommended threshold of significance. There is no additional feasible mitigation. The impact is **significant and unavoidable**.

### 3.5.4 Significance after Mitigation

Modeled GHG emission estimates for construction and operational activities would exceed PCAPCD-recommended efficiency threshold. Implementation of Mitigation Measure GHG-1 would reduce GHG emissions associated with operational transportation activities that would occur as a result of the proposed project. In addition, increased fuel efficiency standards and vehicle emissions standards anticipated to be enforced at a State level in future years would reduce GHG emissions per VMT, and therefore reduce GHG emissions associated with proposed project's mobile

operations. However, anticipated GHG reductions would not reduce emissions to a rate below the PCAPCD-recommended efficiency thresholds. Therefore, Impact 3.5-1 would be **cumulatively considerable and unavoidable**.

Since the project would result in emissions above the threshold adopted by PCAPCD, which was intended support the State legislative framework, the project's impact is considered **significant**. Even with mitigation and GHG reductions associated with existing regulatory requirements, GHG emissions associated with the proposed project would still exceed the PCAPCD-recommended threshold of significance. There is no additional feasible mitigation. Impact 3.5-2 is **significant and unavoidable**.