

4.7 Greenhouse Gas Emissions

4.7.1 Introduction

This section evaluates the potential for the proposed project, which includes the Housing Element Update (HEU), the Stanford Community Plan (SCP) update, and related rezonings (collectively, the “project”) to result in substantial adverse effects related to greenhouse gases (GHGs) and climate change. Below, the Environmental Setting portion of this section includes descriptions of existing conditions relevant to GHGs. Further below, existing plans and policies relevant to GHGs associated with implementation of the project are provided in the Regulatory Setting section. Finally, the impact discussion evaluates potential impacts to GHGs that could result from implementation of the project in the context of existing conditions.

Notice of Preparation Comments

A Notice of Preparation (NOP) for the Draft EIR was circulated on August 8, 2022, and a scoping meeting was held on August 23, 2022. A revised NOP reflecting changes to the HEU’s list of opportunity sites was circulated on March 21, 2023. Both NOPs circulated for a period of 30 days, and the NOPs and the comments received during their respective comment periods can be found in **Appendix A** of this EIR. No comments relating to GHG emissions were received during the NOP comment period.

Information Sources

The primary sources of information referenced in this section included those listed below. Please note that a full list of references for this topic can be found at the end of this section.

- Santa Clara County General Plan (1994).
- Stanford University Community Plan (2000).
- County of Santa Clara Sustainability Master Plan (2021a).
- BAAQMD CEQA Air Quality Guidelines (2023).
- California Air Resources Board (CARB) Scoping Plan (2022a).

4.7.2 Environmental Setting

The following section summarizes the environmental setting including an introduction to the science behind climate change, the various GHGs that contribute to climate change, and the impacts of climate change specifically to California. It also provides GHG inventories for the U.S., California, San Francisco Bay Area, and Santa Clara County.

Climate Science

“Global warming” and “climate change” are common terms used to describe the increase in the average temperature of the earth’s near-surface air and oceans since the mid-20th century. Natural

processes and human actions have been identified as affecting the climate. The Intergovernmental Panel on Climate Change (IPCC) has concluded that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950. However, increasing GHG concentrations resulting from human activity since the 19th century, such as fossil fuel combustion, deforestation, and other activities, are believed to be a major factor in climate change. GHGs in the atmosphere naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space—a phenomenon sometimes referred to as the “greenhouse effect.” Some GHGs occur naturally and are necessary for keeping the Earth’s surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have trapped solar radiation and decreased the amount that is reflected into space, intensifying the natural greenhouse effect, and resulting in the increase of global average temperature.

Carbon dioxide (CO₂), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are the principal GHGs. When concentrations of these gases exceed historical concentrations in the atmosphere, the greenhouse effect is intensified. CO₂, methane, and nitrous oxide occur naturally and are also generated through human activity. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas methane results from off-gassing, natural gas leaks from pipelines and industrial processes, and incomplete combustion associated with agricultural practices, landfills, energy providers, and other industrial facilities. Nitrous oxide emissions are also largely attributable to agricultural practices and soil management. CO₂ sinks include vegetation and the ocean, which absorb CO₂ through sequestration and dissolution, and are two of the largest reservoirs of CO₂ sequestration. Other human-generated GHGs include fluorinated gases such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, which have much higher heat-absorption potential than CO₂ and are byproducts of certain industrial processes.

CO₂ is the reference gas for climate change, as it is the GHG emitted in the highest volume. The effect that each of the GHGs have on global warming is the product of the mass of their emissions and their global warming potential (GWP). GWP indicates how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO₂. For example, methane and nitrous oxide are substantially more potent GHGs than CO₂, with GWPs of 25 and 298 times that of CO₂ respectively, which has a GWP of 1 (CARB, 2023).

In emissions inventories, GHG emissions are typically reported as metric tons (MT) of CO₂ equivalent (CO₂e). CO₂e is calculated as the product of the mass emitted of a given GHG and its specific GWP. While methane and nitrous oxide have much higher GWPs than CO₂, CO₂ is emitted in higher quantities and it accounts for the majority of GHG emissions in CO₂e, both from commercial developments and human activity in general.

Effects of Global Climate Change

The scientific community’s understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain scientific uncertainties in, for example, predictions of local effects of climate change, occurrence, frequency, and magnitude of extreme weather events, effects of

aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of and inability to accurately model Earth's climate system, the uncertainty surrounding climate change may never be eliminated completely. Nonetheless, the IPCC's AR5 states that it is extremely likely that the dominant cause of the observed warming since the mid-20th century is the anthropogenic increase in GHG concentrations (IPCC, 2014). The National Academies of Science from 80 countries have issued statements endorsing the consensus position that humans are the dominant cause for global warming since the mid-20th century (Cook et al., 2016).

The Fourth California Climate Change Assessment (Fourth Assessment), published in 2018, found that the potential impacts in California due to global climate change include: loss in snow pack; sea-level rise; more extreme heat days per year; more high ozone days; more extreme forest fires; more severe droughts punctuated by extreme precipitation events; increased erosion of California's coastlines and sea water intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation (California Office of Planning and Research [OPR], California Energy Commission [CEC] & California Natural Resources Agency [CNRA], 2018). The Fourth Assessment's findings are consistent with climate change studies published by the CNRA since 2009, starting with the *California Climate Adaptation Strategy* (CNRA, 2009) as a response to the Governor's Executive Order S-13-2008. In 2014, the CNRA rebranded the first update of the 2009 adaptation strategy as the *Safeguarding California Plan* (CNRA, 2014). The 2018 update to *Safeguarding California Plan* identifies hundreds of ongoing actions and next steps state agencies are taking to safeguard Californians from climate impacts within a framework of 81 policy principles and recommendations (CNRA, 2018).

In 2016, the CNRA released *Safeguarding California: Implementation Action Plans* in accordance with Executive Order B-30-15, identifying a lead agency to lead adaptation efforts in each sector (CNRA, 2016). In accordance with the 2009 *California Climate Adaptation Strategy*, the CEC was directed to develop a website on climate change scenarios and impacts that would be beneficial for local decision makers. The website, known as Cal-Adapt, became operational in 2011. The information provided on the Cal-Adapt website represents a projection of potential future climate scenarios comprised of local average values for temperature, sea-level rise, snowpack and other data representative of a variety of models and scenarios, including potential social and economic factors. Below is a summary of some of the potential effects that could be experienced in California as a result of global warming and climate change.

Temperature Increase

The primary effect of adding GHGs to the atmosphere has been a rise in the average global temperature. The impact of human activities on global temperature is readily apparent in the observational record. Since 1895, the contiguous US has observed an average temperature increase of 1.5°F per century (National Oceanic and Atmospheric Association [NOAA], 2019). The 5-year period from 2014–2018 was the warmest on record for the contiguous U.S. (NOAA, 2019); of the top 10 hottest years on record in the U.S., seven have occurred since the year 2000, with the top six years all occurring since 2012 (Climate Central, 2022).

The Fourth Assessment indicates that average temperatures in California could rise 5.6°F to 8.8°F by the end of the century, depending on the global trajectory of GHG emissions (OPR, CEC & CNRA, 2018). According to the Cal-Adapt website, Santa Clara County could experience an average increase in temperature of approximately 4.9 to 7.6°F by 2070–2090, compared to the baseline 1961–1990 period (Cal-Adapt, 2023).

With climate change, extreme heat conditions and heat waves are predicted to impact larger areas, last longer, and have higher temperatures. Heat waves, defined as three or more days with temperatures above 90°F, are projected to occur more frequently by the end of the century. Extreme heat days and heat waves can negatively impact human health. Heat-related illness includes a spectrum of illnesses ranging from heat cramps to severe heat exhaustion and life-threatening heat stroke (Red Cross Red Climate Crescent Center [RCCC], 2019).

Wildfires

The hotter and dryer conditions expected with climate change will make forests more susceptible to extreme wildfires. A recent study found that, if GHG emissions continue to rise, the frequency of extreme wildfires burning over approximately 25,000 acres would increase by nearly 50 percent, and the average area burned statewide each year would increase by 77 percent, by the year 2100. In the areas that have the highest fire risk, the cost of wildfire insurance is anticipated to rise by 18 percent by 2055 and the fraction of property insured would decrease (Westerling, 2018).

Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California and make it more difficult for the state to achieve air quality standards. Climate change may increase the concentration of ground-level ozone, which can cause breathing problems, aggravate lung diseases such as asthma, emphysema, chronic bronchitis, and cause chronic obstructive pulmonary disease (COPD) but the magnitude of the effect, and therefore, its indirect effects, are uncertain. Emissions from wildfires can lead to excessive levels of particulate matter, ozone, and volatile organic compounds (NOAA, 2023). Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (RCCC, 2019).

Precipitation and Water Supply

There is a high degree of uncertainty with respect to the overall impact of global climate change on future water supplies in California. Studies indicate considerable variability in predicting precise impacts of climate change on California hydrology and water resources. Increasing uncertainty in the timing and intensity of precipitation will challenge the operational flexibility of California's water management systems. Warmer and wetter winters would increase the amount of runoff available for groundwater recharge; however, this additional runoff could occur at a time when some basins are either being recharged at their maximum capacity or are already full. Conversely, reductions in spring runoff and higher evapotranspiration because of higher temperatures could reduce the amount of water available for recharge (CNRA, 2018).

Climate change could alter water quality in a variety of ways, including through higher winter flows that reduce pollutant concentrations (through dilution) or increase erosion of land surfaces and stream channels, leading to higher sediment, chemical, and nutrient loads in rivers. Water temperature increases and decreased water flows can result in increasing concentrations of pollutants and salinity. Increases in water temperature alone can lead to adverse changes in water quality, even in the absence of changes in precipitation.

Hydrology and Sea Level Rise

As discussed above, climate changes could potentially affect: the amount of snowfall, rainfall and snowpack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea-level rise and coastal flooding; coastal erosion; and the potential for saltwater intrusion. Sea-level rise can be a product of global warming through two main processes: expansion of seawater as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply. Sea level has risen eight to nine inches (21–24 centimeters) since 1880. In 2021, global sea level set a new record high of 97 mm (3.8 inches) above 1993 levels. The rate of sea level rise is accelerating; it has more than doubled from 0.06 inches (1.4 millimeters) per year throughout most of the twentieth century to 0.14 inches (3.6 millimeters) per year from 2006–2015. In many locations along the U.S. coastline, high-tide flooding is now 300 percent to more than 900 percent more frequent than it was 50 years ago. Models project that average sea level rise for the contiguous United States could be 2.2 meters (7.2 feet) by 2100 and 3.9 meters (13 feet) by 2150 (NOAA, 2022). Rising seas could impact transportation infrastructure, utilities, and regional industries.

Agriculture

California has a massive agricultural industry that represents over 13 percent of total US agricultural revenue (California Department of Food and Agriculture [CDFA], 2020). Higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, a changing climate presents significant risks to agriculture due to changes in maximum and minimum temperatures, reduction of winter chill hours, extreme heat leading to additional costs for livestock cooling and losses in production, and declines in water quality, groundwater security, soil health, and pollinator species, and increased pest pressures (CNRA, 2018).

Ecosystems and Wildlife

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increased concentrations of GHGs are likely to accelerate the rate of climate change. As stated in the *Safeguarding California Plan*, “species and ecosystems in California are valued both for their intrinsic worth and for the services they provide to society. Air purification, water filtration, flood attenuation, food provision, recreational opportunities such as fishing, hunting, wildlife viewing, and more are all services provided by ecosystems. These services can only be maintained if ecosystems are healthy and robust and continue to function properly under the impacts of climate change. A recent study examined the vulnerability of all vegetation communities statewide in California and found that 16 of 29 were

highly or nearly highly vulnerable to climate change, including Western North American freshwater marsh, Rocky Mountain subalpine and high montane conifer forest, North American Pacific coastal salt marsh, and more.”

Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. With climate change, ecosystems and wildlife will be challenged by the spread of invasive species, barriers to species migration or movement in response to changing climatic conditions, direct impacts to species health, and mismatches in timing between seasonal life-cycle events such as species migration and food availability (CNRA, 2018).

Public Health

Global climate change is also anticipated to result in more extreme heat events (OPR, CEC & CNRA, 2018). These extreme heat events increase the risk of death from dehydration, heart attack, stroke, and respiratory distress, especially with people who are ill, children, the elderly, and the poor, who may lack access to air conditioning and medical assistance. A warming planet is expected to bring more severe weather events, worsening wildfires and droughts, a decline in air quality, rising sea levels, increases in allergens and in vector-borne diseases, all of which present significant health and wellbeing risks for California populations (CNRA, 2018).

While the possible outcomes and the feedback mechanisms involved are not fully understood and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great. All of these impacts will have either direct or indirect negative effects for residents and businesses in the County.

Emissions Inventories

United States GHG Emissions

In 2021, the United States emitted about 6,340 MMTCO₂e, or 5,586 MMTCO₂e after accounting for sequestration from the land use sector. Emissions increased by 6 percent from 2020 to 2021 (after accounting for sequestration from the land sector). The increase was driven largely by an increase in CO₂ emissions from fossil fuel combustion, which increased by 7 percent relative to 2020. This increase in fossil fuel consumption emissions was due primarily to economic activity rebounding after the height of the COVID-19 pandemic. GHG emissions in 2021 (after accounting for sequestration from the land sector) were 17 percent below 2005 levels (United States Environmental Protection Agency [USEPA], 2023).

Of the major sectors nationwide, transportation accounts for the highest volume of GHG emissions (approximately 28 percent), followed by electricity (25 percent), industry (23 percent), commercial and residential (13 percent), and agriculture (11 percent) (USEPA, 2023).

California GHG Emissions

CARB compiles GHG inventories for the state. Based on the 2020 GHG inventory data (the latest year for which data is available from CARB), emissions from GHG emitting activities statewide were 369.2 MMTCO₂e (CARB, 2022b). Between 1990 and 2021, the population of California

grew by approximately 10 million from 29.6 to 39.5 million (California Department of Finance [CDF], 2022a). This represents an increase of approximately 34 percent from 1990 population levels. In addition, the California economy, measured as gross state product, grew from \$773 billion in 1990 to \$3.14 trillion in 2019, representing an increase of approximately 306 percent (more than three times the 1990 gross state product) in today’s dollars (CDF, 2022b).

Despite the population and economic growth, CARB’s 2020 statewide inventory indicated that California’s net GHG emissions in 2020 were 35.3 MMTCO₂e lower than 2019 levels and 61.8 MMTCO₂e below the 2020 GHG Limit of 431 MMTCO₂e codified in California Health and Safety Code Division 25.5, also known as the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32). **Table 4.7-1** identifies and quantifies statewide anthropogenic GHG emissions and sinks (e.g., carbon sequestration due to forest growth) in 1990 and 2020. As shown in the table, the transportation sector is the largest contributor to statewide GHG emissions at approximately 38 percent in 2020.

**TABLE 4.7-1
CALIFORNIA GHG EMISSIONS INVENTORY**

Category	Total 1990 Emissions Using IPCC SAR (MMTCO ₂ e)	Percent of Total 1990 Emissions	Total 2020 Emissions Using IPCC AR4 (MMTCO ₂ e)	Percent of Total 2020 Emissions
Transportation	150.7	35%	135.8	37%
Electric Power	110.6	26%	59.5	16%
Commercial & Residential Fuel Use	44.1	10%	38.7	11%
Industrial	103.0	24%	73.3	20%
Recycling and Waste ^a	—	—	8.9	2%
High GWP/Non-Specified ^b	1.3	<1%	21.3	6%
Agriculture/Forestry	23.6	6%	31.6	9%
Forestry Sinks	-6.7	-2%	— ^c	—
Net Total (IPCC SAR)	426.6	100%^e	—	—
Net Total (IPCC AR4)^d	431	100%^e	369.2	100%^e

NOTES:

AR4 = Fourth Assessment Report; GWP = global warming potential; IPCC = Intergovernmental Panel on Climate Change; MMTCO₂e = million metric tons of carbon dioxide equivalents; SAR = Second Assessment Report

- a Included in other categories for the 1990 emissions inventory.
- b High GWP gases are not specifically called out in the 1990 emissions inventory.
- c Revised methods under development (not reported for 2020).
- d CARB revised the state’s 1990-level GHG emissions using GWPs from the IPCC AR4.
- e Total of individual percentages may not add up to 100% due to rounding

SOURCES: CARB, 2007; CARB, 2022b.

Bay Area GHG Emissions

Based on 2015 data, in the nine-county San Francisco Bay Area, GHG emissions from the transportation sector represented the largest source of GHG emissions at 41 percent, followed by stationary industrial sources at 26 percent, electricity generation and co-generation at 14 percent,

and fuel use (primarily natural gas) by buildings at 10 percent. The remaining 8 percent of emissions is composed of fluorinated gas emissions and emissions from solid waste and agriculture. According to BAAQMD, of the total transportation emissions in 2015, on-road sources accounted for approximately 87 percent, while off-road sources accounted for the remainder (BAAQMD, 2017a).

Santa Clara County GHG Emissions

Table 4.7-2 summarizes GHG emissions in Santa Clara County for 2017, the most recent year for which data are available. As shown, the transportation sector is the largest contributor to countywide GHG emissions, while natural gas combustion is the largest contributor to GHG emissions in unincorporated Santa Clara County. Unincorporated county emissions are approximately 3.7 percent of countywide emissions.

**TABLE 4.7-2
 SANTA CLARA COUNTY GREENHOUSE GAS EMISSIONS FOR 2017**

Emissions Sector	County Emissions (MT CO₂e)	Unincorporated County Emissions (MT CO₂e)
Residential Electricity	357,751	14,276
Commercial Electricity	2,020,766	94,308
Residential Natural Gas	1,205,906	48,503
Commercial Natural Gas	1,214,604	126,474
Passenger VMT	3,868,364	33,052
Commercial VMT	984,542	8,412
Off-road VMT	515,612	32,282
Waste	574,003	40,500
Water	34,912	6,766
Wastewater	12,881	520
Total^a	10,789,339	405,091

NOTES: CO₂e = carbon dioxide equivalent; MT = metric tons; VMT = vehicle miles traveled.

a Values may not add up to the total due to rounding.

SOURCE: County of Santa Clara, 2021b.

4.7.3 Regulatory Setting

Federal

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

The U.S. Supreme Court held that the United States Environmental Protection Agency (USEPA) must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al.*, twelve states and cities, including California, together with several environmental organizations sued to require the USEPA to regulate GHGs as pollutants under the

Clean Air Act (127 S. Ct. 1438 (2007)). The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and the USEPA had the authority to regulate GHGs.

On December 7, 2009, the USEPA 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—CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆—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 the GHG pollution that threatens public health and welfare.

These findings did not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

Vehicle Emissions Standards

In 1975, Congress enacted the Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, USEPA and the National Highway Traffic Safety Administration (NHTSA) are responsible for establishing additional vehicle standards. In August 2012, standards were adopted for model years 2017 through 2025 for passenger cars and light-duty trucks. According to these standards, a model year 2025 vehicle would emit half the GHG emissions of a model year 2010 vehicle (USEPA and NHTSA, 2010). Notably, the State of California harmonized its vehicle efficiency standards through 2025 with the federal standards at this time (see *Advanced Clean Cars Program* below).

In August 2018, EPA and the NHTSA proposed maintaining the 2020 corporate average fuel economy (CAFE) and CO₂ standards for model years 2021 through 2026. The estimated CAFE and CO₂ standards for model year 2020 are 43.7 miles per gallon (mpg) and 204 grams of CO₂ per mile for passenger cars and 31.3 mpg and 284 grams of CO₂ per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. In September 2019, EPA finalized the Safer Affordable Fuel-Efficient Vehicles Rule Part One: One National Program and announced its decision to withdraw the Clean Air Act preemption waiver granted to the State of California in 2013 (USEPA & NHTSA, 2019). In March 2022, the USEPA reinstated California's waiver restoring the state's authority to set and enforce more stringent standards than the federal government, including California's GHG emission standards and zero emission vehicle mandate.¹

¹ California State Motor Vehicle Pollution Control Standards; Advanced Clean Car Program; Reconsideration of a Previous Withdrawal of a Waiver of Preemption; Notice of Decision, 87 Fed. Reg. 14,332 (Mar. 14, 2022), <https://www.federalregister.gov/documents/2022/03/14/2022-05227/california-state-motor-vehicle-pollution-control-standards-advanced-clean-car-program>.

State

California has promulgated a series of executive orders, laws, and regulations aimed at reducing both the level of GHGs in the atmosphere and emissions of GHGs within the state. The major components of California's climate protection initiative are reviewed below. CARB is the agency with regulatory authority over air quality issues in California. CARB adopts regulations designed to reduce criteria pollutants, toxic air contaminants, and GHG emissions; and establishes vehicle emission standards. As discussed earlier, CARB is responsible for preparing, adopting, and updating California's GHG inventory. Additional responsibilities of CARB with respect to specific state mandates are discussed below.

CEQA Guidelines

The *CEQA Guidelines* are embodied in the California Code of Regulations (CCR), Title 14, beginning with Section 15000. The current *CEQA Guidelines* Section 15064.4 states that "a lead agency shall 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." Section 15064.4 further states:

A lead agency should consider the following factors, when determining the significance of impacts from greenhouse gas emissions on the environment:

- (1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;*
- (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.*
- (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions (see e.g., section 15183.5(b)).*

The *CEQA Guidelines* also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (*CEQA Guidelines* Section 15064(h)(3)).

The *CEQA Guidelines* do not require or recommend a specific analytical method or provide quantitative criteria for determining the significance of GHG emissions, nor do they set a numerical threshold of significance for GHG emissions. Section 15064.7(c) clarifies that "when adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

When GHG emissions are found to be significant, *CEQA Guidelines* Section 15126.4(c) includes the following direction on measures to mitigate GHG emissions:

Consistent with Section 15126.4(a), lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of greenhouse gas emissions. Measures to mitigate the significant effects of greenhouse gas emissions may include, among others:

- (1) Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision.*
- (2) Reductions in emissions resulting from a project through implementation of project features, project design, or other measures.*
- (3) Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions.*
- (4) Measures that sequester greenhouse gases.*
- (5) In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of greenhouse gas emissions, mitigation may include the identification of specific measures that may be implemented on a project-by project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.*

State of California Executive Orders (EO)

EO S-1-07 and Update to the Low Carbon Fuel Standard

EO S-1-07, signed by Governor Schwarzenegger in 2007 established a low carbon fuel standard (LCFS) with a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020. In September 2018, CARB extended the LCFS program to 2030, making significant changes to the design and implementation of the program, including a doubling of the carbon intensity reduction to 20 percent by 2030.

EO B-16-12

In March 2012, Governor Brown issued an executive order establishing a goal of 1.5 million zero-emission vehicles (ZEVs) on California roads by 2025. In addition to the ZEV goal, EO B-16-12 stipulated that by 2015 all major cities in California would have adequate infrastructure and be “zero-emission vehicle ready”; that by 2020 the state would have established adequate infrastructure to support one million ZEVs; that by 2050, virtually all personal transportation in the state will be based on ZEVs; and that GHG emissions from the transportation sector will be reduced by 80 percent below 1990 levels.

EO B-30-15

Governor Brown signed Executive Order B-30-15 on April 29, 2015, which:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030;
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets; and

- Directed CARB to update the Climate Change Scoping Plan (Scoping Plan) to express the 2030 target in terms of MMTCO₂e.

EO B-48-18

On January 26, 2018, Governor Brown issued an executive order establishing a goal of 5 million ZEVs on California roads by 2030.

EO B-55-18

On September 10, 2018, Governor Brown signed EO B-55-18, committing California to total, economy-wide carbon neutrality by 2045. EO B-55-18 directs CARB to work with relevant state agencies to develop a framework to implement an accounting to track progress toward this goal. AB 1395 would codify this carbon neutral target.

EO N-79-20

On September 23, 2020, Governor Newsom signed EO N-79-20, which sets new statewide goals for phasing out gasoline-powered cars and trucks in California. EO N-79-20 requires that 100 percent of in-state sales of new passenger cars and trucks are to be zero-emission by 2035; 100 percent of in-state sales of medium- and heavy-duty trucks and busses are to be zero-emission by 2045 where feasible; and 100 percent of off-road vehicles and equipment sales are to be zero-emission by 2035 where feasible.

State of California Policy and Legislation

Assembly Bill 117 and Senate Bill 790

In 2002, the state of California passed AB 117, enabling public agencies and joint power authorities to form a Community Choice Aggregation (CCA). SB 790 strengthened it by creating a “code of conduct” that the incumbent utilities must adhere to in their activities relative to CCAs. CCAs allow a city, county, or group of cities and counties to pool electricity demand and purchase/generate power on behalf of customers within their jurisdictions to provide local choice. CCAs work with PG&E to deliver power to its service area. The CCA is responsible for the electric generation (procure or develop power) while PG&E is responsible for electric delivery, power line maintenance, and monthly billing.

Senate Bills 1078 and 107

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.

Assembly Bill 32 and Senate Bill 32

The California Global Warming Solutions Act of 2006 (AB 32) required that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction was to be accomplished by enforcing a statewide cap on GHG emissions that would be phased in starting in 2012.

In 2016, SB 32 and its companion bill AB 197 amended Health and Safety Code Division 25.5, establishing a new climate pollution reduction target of 40 percent below 1990 levels by 2030, and included provisions to ensure that the benefits of state climate policies reach disadvantaged communities.

Climate Change Scoping Plan

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020. CARB developed and approved the initial scoping plan in 2008, outlining the regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs that would be needed to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state’s long-range climate objectives (CARB, 2008).

CARB approved the 2017 Climate Change Scoping Plan Update (2017 Scoping Plan Update) in December 2017. The 2017 Scoping Plan Update outlines the proposed framework of action for achieving the 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels (CARB, 2017). Through a combination of data synthesis and modeling, CARB determined that the target statewide 2030 emissions limit is 260 MMTCO_{2e}, and that further commitments will need to be made to achieve an additional reduction of 50 MMTCO_{2e} beyond current policies and programs. The cornerstone of the 2017 Scoping Plan Update is an expansion of the cap-and-trade program to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2030 limit set forth by EO B-30-15.

In the 2017 Scoping Plan Update, CARB recommends statewide targets of no more than 6 MTCO_{2e} per capita by 2030 and no more than 2 MTCO_{2e} per capita by 2050. CARB acknowledges that because the statewide per-capita targets are based on the statewide GHG emissions inventory that includes all emissions sectors in the state, it is appropriate for local jurisdictions to derive evidence-based local per-capita goals based on local emissions sectors and growth projections.

To demonstrate how a local jurisdiction can achieve its long-term GHG goals at the community plan level, CARB recommends developing a geographically specific GHG reduction plan (i.e., climate action plan) consistent with the requirements of CEQA Section 15183.5(b). A so-called “CEQA-qualified” GHG reduction plan, once adopted, can provide local governments with a streamlining tool for project-level environmental review of GHG emissions, provided there are adequate performance metrics for determining project consistency with the plan. Absent conformity with such a plan, CARB recommends “that projects incorporate design features and GHG reduction measures, to the degree feasible, to minimize GHG emissions. Achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development.” While acknowledging that recent land use development projects in California have demonstrated the feasibility to achieve zero net additional GHG emissions (e.g., Newhall Ranch Resource Management and Development Plan), the 2017 Scoping Plan Update states that:

Achieving net zero increases in GHG emissions, resulting in no contribution to GHG impacts, may not be feasible or appropriate for every project, however, and the inability of

a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA. Lead agencies have the discretion to develop evidence-based numeric thresholds (mass emissions, per capita, or per service population) consistent with this Scoping Plan, the State’s long-term GHG goals, and climate change science...To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from VMT [vehicle miles traveled], and direct investments in GHG reductions within the project’s region that contribute potential air quality, health, and economic co-benefits locally.

In May 2022, CARB adopted the 2022 update to the Scoping Plan. The 2022 Scoping Plan Update assesses progress toward the statutory 2030 GHG reduction target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the state’s long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities (CARB, 2022a).

Assembly Bill 1279 (California Climate Crisis Act)

In August 2022, the California Legislature passed a package of significant climate legislation that includes a codification of the state’s goal to reach net-zero by 2045. With the passage of AB 1279, California has locked in a pathway for it to reach net-zero by no later than 2045. This enables the legislature, communities, and businesses to start long-term planning, with certainty, for a safer future today. Critically, this goal requires California to cut GHG emissions by 85 percent compared to 1990 levels, ensuring the state uses all available solutions to sharply cut pollution from industrial facilities, vehicles, power plants and more. The Governor signed AB 1279 into law on September 16, 2022.

Cap-and-Trade Program

Initially authorized by the California Global Warming Solutions Act of 2006 (AB 32) and extended through the year 2030 with the passage of AB 398 (2017), the California Cap-and-Trade Program is a core strategy that the state is using to meet its GHG reduction targets for 2020 and 2030, and ultimately achieve an 80 percent reduction from 1990 levels by 2050. CARB designed and adopted the California Cap-and-Trade Program to reduce GHG emissions from “covered entities”² (e.g., electricity generation, petroleum refining, cement production, and large industrial facilities that emit more than 25,000 MTCO₂e per year), setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve reductions.³ Under the Cap-and-Trade Program, an overall limit is established for GHG emissions from capped sectors. The statewide cap for GHG emissions from the capped sectors commenced in 2013. The cap declines over time. Facilities subject to the cap can trade permits to emit GHGs.⁴

² “Covered entity” means an entity in California that has one or more of the processes or operations and has a compliance obligation as specified in Subarticle 7 of the Cap-and-Trade Regulation; and that has emitted, produced, imported, manufactured, or delivered in 2008 or any subsequent year more than the applicable threshold level specified in section 95812(a) of the Regulation.

³ 17 CCR 95800–96023.

⁴ See generally 17 CCR 95811 and 95812.

Senate Bill 375

Signed into law on October 1, 2008, SB 375 supplements GHG reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, CARB approved GHG reduction targets in February 2011 for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations. The target reductions for the Bay Area are a regional reduction of per-capita GHG emissions from cars and light-duty trucks by 7 percent by 2020 and by 15 percent by 2035, compared to a 2005 baseline.

Senate Bill 743

In 2013, Governor Brown signed SB 743, which added Public Resources Code Section 21099 to CEQA. SB 743 changed the way that transportation impacts are analyzed in Transit Priority Areas (TPAs) under CEQA, better aligning local environmental review with statewide objectives to reduce GHG emissions, encourage infill mixed-use development in designated priority development areas, reduce regional sprawl development, and reduce VMT in California.

As required under SB 743, OPR developed potential metrics to measure transportation impacts that may include, but are not limited to, VMT, VMT per capita, automobile trip generation rates, or automobile trips generated. The new VMT metric is intended to replace the use of automobile delay and level of service as the metric to analyze transportation impacts under CEQA.

In its 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA*, OPR recommends different thresholds of significance for projects depending on land use types (OPR, 2018a). For example, residential and office space projects must demonstrate a VMT level that is 15 percent less than that of existing development to determine whether the mobile-source GHG emissions associated with the project are consistent with statewide GHG reduction targets. With respect to retail land uses, any net increase of VMT may be sufficient to indicate a significant transportation impact.

Senate Bills 1078 and 107

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.

Senate Bill X 1-2

SB X 1-2, signed by Governor Brown in April 2011, enacted the California Renewable Energy Resources Act. The law obligated all California electricity providers, including investor-owned and publicly owned utilities, to obtain at least 33 percent of their energy from renewable resources by the year 2020.

Senate Bill 350

SB 350, the Clean Energy and Pollution Reduction Act of 2015 (Chapter 547, Statutes of 2015), was approved by Governor Brown on October 7, 2015. SB 350 increased the standards of the

California RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased from 33 percent to 50 percent by December 31, 2030. The act requires the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in existing electricity and natural gas final end uses of retail customers by January 1, 2030.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, establishing that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also creates new standards for the RPS goals that were established by SB 350 in 2015. Specifically, the law increases the percentage of energy that both investor-owned utilities and publicly owned utilities must obtain from renewable sources from 50 percent to 60 percent by 2030. Incrementally, these energy providers must also have a renewable energy supply of 33 percent by 2020, 44 percent by 2024, and 52 percent by 2027. The updated RPS goals are considered achievable, because many California energy providers are already meeting or exceeding the RPS goals established by SB 350.

Senate Bill 1020

On September 16, 2022, Governor Newsom signed SB 1020, which establishes interim targets to the policy framework originally established in SB 100 to require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040. This will help ensure that the state makes steady and accountable progress towards decarbonizing the entire statewide electricity grid. The bill also requires all state agencies to rely on 100 percent renewable energy and zero-carbon resources to serve their own facilities by 2035.

Advanced Clean Cars Program

In January 2012, pursuant to Recommended Measures T-1 and T-4 of the 2008 Scoping Plan, CARB approved the Advanced Clean Cars Program, a new emissions-control program for model years 2017 through 2025. In response to a midterm review of the standards in March 2017, CARB directed staff to begin working on post-2025 model year vehicle regulations (Advanced Clean Cars II) to research additional measures to reduce air pollution from light-duty and medium-duty vehicles. Additionally, as described earlier, in September 2020, Governor Newsom signed EO N-79-20 that established a goal that 100 percent of California sales of new passenger car and trucks be zero-emission by 2035 and directed CARB to develop and propose regulations toward this goal. The primary mechanism for achieving these targets for passenger cars and light trucks is the Advanced Clean Cars II Program. CARB adopted the ACC II regulations on August 25, 2022.

Mobile Source Strategy

In May 2016, CARB released the updated Mobile Source Strategy that demonstrates how the state can simultaneously meet air quality standards, achieve GHG emission reduction targets, decrease health risk from transportation emissions, and reduce petroleum consumption over the

next 15 years. The strategy promotes a transition to zero-emission and low-emission vehicles, cleaner transit systems and reduction of vehicle miles traveled (VMT). The Mobile Source Strategy calls for 1.5 million ZEVs (including plug-in hybrid electric, battery-electric, and hydrogen fuel cell vehicles) by 2025 and 4.2 million ZEVs by 2030. The strategy also calls for more-stringent GHG requirements for light-duty vehicles beyond 2025 as well as GHG reductions from medium-duty and heavy-duty vehicles and increased deployment of zero emission trucks primarily for class 3 through 7 “last mile” delivery trucks in California. Statewide, the Mobile Source Strategy would result in a 45 percent reduction in GHG emissions from mobile sources and a 50 percent reduction in the consumption of petroleum-based fuels (CARB, 2016).

Similar to the 2016 Mobile Source Strategy, the 2020 Strategy is a framework that identifies the levels of cleaner technologies necessary to meet the many goals and high-level regulatory concepts that would allow the state to achieve the levels of cleaner technology. The 2020 Strategy will inform the development of other planning efforts including the State Implementation Plan (SIP) which will translate the concepts included into concrete measures and commitments for specific levels of emissions reductions, the 2022 Climate Change Scoping Plan (2022 Scoping Plan Update), and Community Emissions Reduction Plans (CERPs) required for communities selected as a part of CARB’s Community Air Protection Program. Central to all of these planning efforts, and CARB actions on mobile sources going forward, will be environmental justice as CARB strives to address longstanding environmental and health inequities from elevated levels of toxics, criteria pollutants, and secondary impacts of climate change (CARB, 2021). The 2020 Mobile Source Strategy illustrates that an aggressive deployment of ZEVs will be needed for the state to meet federal air quality requirements and the state’s climate change targets.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, CARB adopted the Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling to reduce public exposure to diesel particulate matter emissions (13 CCR Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure prohibits diesel-fueled commercial vehicles from idling for more than five minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in GHG reduction and energy savings in the form of reduced fuel consumption from unnecessary idling.

Airborne Toxic Control Measure for Stationary Compression Ignition Engines

In 2004, CARB adopted an Airborne Toxic Control Measure to reduce public exposure to emissions of diesel particulate matter and criteria pollutants from stationary diesel-fueled compression ignition engines (17 CCR Section 93115). The measure applies to any person who owns or operates a stationary compression ignition engine in California with a rated brake horsepower greater than 50, or to anyone who either sells, offers for sale, leases, or purchases a stationary compression ignition engine. This measure outlines fuel and fuel additive

requirements; emissions standards; recordkeeping, reporting and monitoring requirements; and compliance schedules for compression ignition engines.

Truck and Bus Regulation

In addition to limiting exhaust from idling trucks, in 2008 CARB approved the Truck and Bus Regulation to reduce the emissions of oxides of nitrogen and particulate matter from existing diesel vehicles operating in California (13 CCR Section 2025). The phased regulation aims to reduce emissions by requiring installation of diesel soot filters and encouraging the retirement, replacement, or retrofit of older engines with newer emission-controlled models. This regulation will be implemented in phases, with full implementation by 2023.

CARB also promulgated emissions standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007, aims to reduce emissions by installing diesel soot filters and encouraging the retirement, replacement, or repowering of older, dirtier engines with newer emissions-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets.

Senate Bill 1383 (Short-Lived Climate Pollutants)

SB 1383, enacted in 2016, requires statewide reductions in short-lived climate pollutants across various industry sectors. The climate pollutants covered under SB 1383 include methane, fluorinated gases, and black carbon—all GHGs with a much higher warming impact than CO₂ and with the potential to have detrimental effects on human health. SB 1383 requires CARB to adopt a strategy to reduce methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The methane emissions reduction goals include a 75 percent reduction in the level of statewide disposal of organic waste from 2014 levels by 2025 and requires that clean streams of organic material be collected and recycled into new end-products like compost or biofuel as well as edible food waste recovery.

Assembly Bill 341

AB 341, which became law in 2011, established a new statewide goal of 75 percent recycling through source reduction, recycling, and composting by 2020. The new law changed the way that the state measures progress toward the 75 percent recycling goal, focusing on source reduction, recycling, and composting. AB 341 also requires all businesses and public entities that generate four cubic yards or more of waste per week and multifamily residential dwellings with five units or more to have a recycling program in place (California Legislative Information, 2011). The purpose of the law is to reduce GHG emissions by diverting commercial solid waste to recycling efforts and expand the opportunity for additional recycling services and recycling manufacturing facilities in California.

Assembly Bill 1826

AB 1826, known as the Commercial Organic Waste Recycling Law, became effective on January 1, 2016, and requires businesses and multi-family complexes (with five units or more) that generate

specified amounts of organic waste (compost) to arrange for organics collection services. The law phases in the requirements on businesses with full implementation realized in 2019:

- **First Tier:** Commenced in April 2016, the first tier of affected businesses included those that generate eight or more cubic yards of organic materials per week.
- **Second Tier:** In January 2017, the affected businesses expanded to include those that generate four or more cubic yards of organic materials per week.
- **Third Tier:** In January 2019, the affected businesses expanded further to include those that generate four or more cubic yards of commercial solid waste per week.

State of California Building Codes

California Building and Energy Efficiency Standards (Title 24)

The California Energy Commission (CEC) first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although the standards were not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and non-residential buildings subject to the standard. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods.

On August 11, 2021, the CEC adopted the 2022 Energy Code was approved by the California Building Standards Commission (CBSC) for inclusion into the California Building Standards Code. This update to the building code provides crucial steps in the state's progress toward 100 percent clean carbon neutrality by midcentury (CEC, 2022). The 2022 Energy Code builds on California's technology innovations, encouraging energy efficient approaches to encourage building decarbonization, emphasizing in particular on heat pumps for space heating and water heating. This set of Energy Codes also strengthens ventilation standards to improve indoor air quality and extends the benefits of photovoltaic and battery storage systems and other demand flexible technology to work in combinations with heat pumps to enable California buildings to be responsive to climate change. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code. The Energy Code includes measures that will reduce energy use in single family, multifamily, and nonresidential buildings. These measures will:

1. Affect newly constructed buildings by adding new prescriptive and performance standards for electric heat pumps for space conditioning and water heating, as appropriate for the various climate zones in California;
2. Require photovoltaic (PV) and battery storage systems for newly constructed multifamily and selected nonresidential buildings;
3. Update efficiency measures for lighting, building envelope, HVAC; and
4. Make improvements to reduce the energy loads of certain equipment covered by (i.e., subject to the requirements of) the Energy Code that perform a commercial process that is not related

to the occupant needs in the building (such as refrigeration equipment in refrigerated warehouses, or air conditioning for computer equipment in data processing centers).

California Green Buildings Standards Code

The California Green Building Standards Code, Part 11, Title 24, California Code of Regulations, known as CALGreen, is the first-in-the-nation mandatory green building standards code. In 2007, CBSC developed green building standards in an effort to meet the goals of California's landmark initiative AB 32. The CALGreen Code is intended to encourage more sustainable and environmentally friendly building practices, require low-pollution-emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment. CALGreen covers a number of fields, with regulations encompassing energy efficiency, water conservation, sustainable building materials, site design, and air quality.

Since 2011, the CALGreen Code has been mandatory for all new residential and non-residential buildings constructed in the state. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code is reviewed and updated on a three-year cycle.

The 2022 CALGreen Code that took effect on January 1, 2023, included new mandatory measures including Electric Vehicle (EV) charging requirements for residential and non-residential buildings (CBSC, 2022). The 2022 CALGreen update simplifies the code and its application in several ways. It offers new voluntary prerequisites for builders to choose from, such as battery storage system controls and heat pump space, and water heating, to encourage building electrification. While the previous 2019 CALGreen Code only requires provision of EV Capable spaces with no requirement for chargers to be installed at multifamily dwellings, the 2022 CALGreen code mandates chargers (CBSC, 2022).

Regional

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the regional government agency that regulates stationary sources of air pollution in the nine San Francisco Bay Area counties. BAAQMD regulates GHG emissions through the following plans, programs, and guidelines.

Clean Air Plan

BAAQMD and other air districts prepare clean air plans in accordance with the federal and state Clean Air Acts. On April 19, 2017, the BAAQMD Board of Directors adopted the 2017 *Clean Air Plan: Spare the Air, Cool the Climate*, an update to the 2010 Clean Air Plan (BAAQMD, 2017a). The Clean Air Plan is a comprehensive plan that focuses on the closely related goals of protecting public health and protecting the climate. Consistent with the state's GHG reduction targets, the plan lays the groundwork for a long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

BAAQMD Climate Protection Program

BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the San Francisco Bay Area Air Basin. The climate protection program includes measures that promote energy efficiency, reduce VMT, and develop alternative sources of energy, all of which assist in reducing GHG emissions and reducing air pollutants that affect the health of residents. BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

BAAQMD CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed in the Bay Area. The guidelines also include recommended assessment methods for air toxins, odors, and GHG emissions. The 2017 update to the BAAQMD CEQA Guidelines (BAAQMD, 2017b) include significance thresholds for GHG emissions based on the emission reduction goals for 2020 articulated by the California Legislature in AB 32. In April 2022, in response to SB 32 and 2017 Scoping Plan Update targets for 2030 and EO B-15 target for carbon neutrality no later than 2045, the BAAQMD adopted updated CEQA significance thresholds for GHGs (BAAQMD, 2022) and included them in the 2023 update to the BAAQMD CEQA Guidelines (BAAQMD, 2023).

For land use development projects, the BAAQMD recommends using the approach endorsed by the *California Supreme Court in Center for Biological Diversity v. Department of Fish & Wildlife* (2015) (62 Cal.4th 204), which evaluates a project based on its effect on California's efforts to meet the state's long-term climate goals. As the Supreme Court held in that case, a project that would be consistent with meeting those goals can be found to have a less-than-significant impact on climate change under CEQA. If a project would contribute its "fair share" of what will be required to achieve those long-term climate goals, then a reviewing agency can find that the impact will not be significant because the project will help to solve the problem of global climate change (62 Cal.4th 220–223). Applying this approach, the BAAQMD recommends that new land use development projects incorporate the BAAQMD-identified design elements to do their "fair share" of implementing the goal of carbon neutrality by 2045 (discussed more under *Significance Thresholds* below).

Alternately, a local government may prepare a qualified GHG reduction strategy that is consistent with SB 32 goals. If a project is consistent with an adopted qualified GHG reduction strategy and general plan that addresses the project's GHG emissions, it can be presumed that the project will not have significant GHG emissions under CEQA (BAAQMD, 2022).

Metropolitan Transportation Commission/Association of Bay Area Governments

Sustainable Communities Strategy—Plan Bay Area

The Metropolitan Transportation Commission (MTC) is the federally recognized Metropolitan Planning Organization for the nine-county Bay Area, which has adopted Plan Bay Area that includes the region's Sustainable Communities Strategy, as required under SB 375, and the 2040

Regional Transportation Plan. A central GHG reduction strategy of Plan Bay Area is the concentration of future growth in Priority Development Areas (PDAs) and Transit Priority Areas (TPAs). To be eligible for PDA designation, an area must be within an existing community, near existing or planned fixed transit or served by comparable bus service and planned for more housing. Some of the proposed HEU housing opportunity sites are located within a PDA. A TPA is an area within 0.5 miles of an existing or planned major transit stop such as a rail transit station, a ferry terminal served by transit, or the intersection of two or more major bus routes (MTC & ABAG, 2013).

On July 26, 2017, MTC adopted *Plan Bay Area 2040*, a focused update that builds upon the growth pattern and strategies developed in the original Plan Bay Area but with updated planning assumptions that incorporate key economic, demographic, and financial trends since the original plan was adopted (MTC & ABAG, 2017).

On October 21, 2021, the MTC and the Executive Board of the ABAG jointly adopted Plan Bay Area 2050 and its related supplemental reports. Plan Bay Area 2050 connects the elements of housing, the economy, transportation and the environment through 35 strategies that will make the Bay Area more equitable for all residents and more resilient in the face of unexpected challenges. In the short-term, the plan's Implementation Plan identifies more than 80 specific actions for MTC, ABAG and partner organizations to take over the next five years to make headway on each of the 35 strategies (MTC & ABAG, 2021). It will be several years before the regional transportation model (and therefore county and local transportation models) are updated to reflect Plan Bay Area 2050; the models currently incorporate data from Plan Bay Area 2040.

Local

Santa Clara County General Plan

The Santa Clara County General Plan is a comprehensive long-range general plan for the physical development within the County (County of Santa Clara, 1994). The General Plan contains the current County of Santa Clara Housing Element, which was adopted in 2015. The various elements within the General Plan include goals and policies for the physical development of the County. There are no General Plan strategies and policies related to GHGs and climate change and relevant to implementation of the project.

Stanford University Community Plan

The current Stanford University Community Plan was adopted in 2000 (County of Santa Clara, 2000). The primary purpose of the Community Plan is to guide future use and development of Stanford lands in a manner that incorporates key County General Plan principles of compact urban development, open space preservation, and resource conservation. The Community Plan was adopted as an amendment of the General Plan in the manner set forth by California Government Code Section 65350 et seq. Any revisions to the Community Plan must also be made according to the provisions of State law for adopting and amending general plans. The Community Plan does not contain any community strategies and policies related to GHGs and climate change. However, strategies and policies related to air quality and relevant to

implementation of the project would also help reduce GHG emissions (see Section 4.2, *Air Quality*).

County of Santa Clara Sustainability Master Plan

The Sustainability Master Plan (County of Santa Clara, 2021a) presents a vision and roadmap to build and maintain a healthy and safe County by reducing climate pollution, adapting to a changing global climate, enhancing natural resources and the environment, fostering a prosperous and just regional economy, and meeting the needs of current and future generations to ensure all people have equitable opportunities to reach their full potential. The vision is achieved through promoting strategies and solutions across four Priority Areas that together include eight goals, 30 strategies, and 90 targets to monitor the implementation of the County’s sustainability vision.

Santa Clara County Reach Codes

Recognizing that the most cost effective and low-risk ways to reduce GHG emissions is through electrification of buildings coupled with encouraging the use of EVs, on December 7, 2021, the County Board of Supervisors approved Ordinance NS-1100.135 (County of Santa Clara, 2021c) amending the 2019 California Green Building Code to require building electrification and EV infrastructure in all new construction in unincorporated Santa Clara County. The ordinance requires all new construction to use electricity (not natural gas) for water heating, space heating, cooking, clothes drying, indoor and outdoor fireplaces, and decorative appliances. Known as “reach codes,” these ordinances go beyond state minimum requirements to require rather than encourage electrification of buildings. New dwellings are also required to have wiring installed that will facilitate installation of battery storage for additional resiliency, cost-effectiveness, and environmental sustainability. The ordinance went into effect on February 14, 2022, and applies to all building uses with limited exceptions for:

- Junior Accessory Dwelling Units that are contained entirely within a single-family residence that has existing infrastructure such as natural gas piping;
- Hospitals and correctional facilities; and
- Buildings in which all-electric appliances are not feasible.

All exempted buildings will be required to be pre-wired for transition to all-electric in the future. High-rise residential buildings will also be required to have a solar panel system installed.

The ordinance also includes EV infrastructure standards for new construction. Requirements for EV infrastructure range from a minimum of two EV outlets for single-family homes and townhouses to high-capacity charging systems and parking lot spaces reserved for charging use in larger non-residential projects.

All new one- and two-family dwellings and townhouses with attached private garages are required to have installed a Level 2 EV Ready space⁵ and a Level 1 EV Ready space⁶. New multifamily buildings with less than or equal to 20 dwelling units are required to provide one Level 2 EV Ready space per dwelling unit with parking. For multifamily buildings with more than 20 units, for the first 20 units, at least one parking space per dwelling unit shall be provided with a Level 2 EV Ready space. Twenty-five percent of the remaining dwelling units with parking spaces shall be provided with at least one Level 2 EV Ready space per unit. In addition, each dwelling unit with parking spaces that does not have at least one Level 2 EV Ready space shall be provided with at least one Level 1 EV Ready space.

4.7.4 Environmental Impacts and Mitigation Measures

Significance Thresholds

The thresholds used to determine the significance of impacts related to GHGs are based on Appendix G of the *CEQA Guidelines*. Implementation of the proposed project would have a significant impact on the environment 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.

The CEQA Guidelines do not prescribe specific methods for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methods and thresholds of significance consistent with various factors prescribed by CEQA Guidelines section 15064.4. The State of California has not adopted emissions-based thresholds for GHG emissions under CEQA. The OPR technical advisory titled *Discussion Draft CEQA and Climate Change Advisory* (OPR, 2018b) states that:

[N]either the CEQA statute nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for performing an impact analysis. This is left to lead agency judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable. Even in the absence of clearly defined thresholds for GHG emissions,

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- ⁵ A Level 2 EV Ready space is a parking space served by a complete electric circuit with a minimum of 208/240 volt, 40-ampere capacity, including the required electric panel capacity; an overcurrent protection device; a minimum one-inch diameter raceway that may include multiple circuits as allowed by the County Electrical Code; properly sized conductors; grounding and bonding; and either (a) a receptacle labelled "Electric Vehicle Outlet" with at least a ½ inch font adjacent to the parking space, or (b) a blank labelled Electric Vehicle Supply Equipment (EVSE) with a minimum output of 40 amperes.
- ⁶ A Level 1 EV Ready space is a parking space served by a complete electric circuit with a minimum of 110/120 volt, 20-ampere capacity, including electric panel capacity; an overprotection device; a minimum one-inch diameter raceway that may include multiple circuits as allowed by the County Electrical Code; properly sized conductors; grounding and bonding; and either (a) a receptacle labelled "Electric Vehicle Outlet" with at least a ½ inch font adjacent to the parking space, or (b) labelled EVSE.

such emissions must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact.

Furthermore, the advisory document indicates that “in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a ‘significant impact,’ individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice.” Section 15064.7(c) of the CEQA Guidelines specifies that “when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.”

GHG Emissions

The County, as the CEQA lead agency, has discretion to choose thresholds of significance, including thresholds adopted or recommended by other agencies or recommended by experts, such as those recommended by BAAQMD, provided that the lead agency’s decision to use such thresholds is supported by substantial evidence (OPR, 2018b). As discussed previously, in April 2022, BAAQMD adopted new significance thresholds that address the state’s SB 32 GHG emissions reduction goals and carbon neutrality goal for 2045, as stipulated in Executive Order B-55-18. BAAQMD also published a Justification Report that provides the substantial evidence that lead agencies need to support their use of these thresholds (BAAQMD, 2022).

The recommended plan-level GHG thresholds adopted by the BAAQMD are as follows:

- A. Meet State’s goals to achieve emissions 40 percent below 1990 levels by 2030, and carbon neutrality by 2045; OR
- B. Be consistent with a local GHG Reduction Strategy that meets the criteria under CEQA Guidelines section 15183.5(b).

The recommended project-level GHG thresholds adopted by BAAQMD are as follows:

- A. Projects must include, at a minimum, the following project design elements:
 1. Buildings
 - a. The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).
 - b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
 2. Transportation
 - a. Achieve compliance with electric vehicle requirements in the most recently adopted version of CALGreen [California Green Building Standards Code] Tier 2.

- b. Achieve a reduction in project-generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent).

OR

Meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:

- i. *Residential projects*: 15 percent below the existing VMT per capita.
- ii. *Office projects*: 15 percent below the existing VMT per employee.
- iii. *Retail projects*: no net increase in existing VMT.

OR

- B. Be consistent with a local GHG Reduction Strategy that meets the criteria under the CEQA Guidelines section 15183.5(b).

BAAQMD has not adopted significance thresholds that address construction emissions.

The BAAQMD's plan-level thresholds consider planning documents to have a less-than-significant climate impact if they demonstrate that GHG emissions from the jurisdiction will decline in accordance with California's GHG reduction targets of 40 percent below 1990 levels by 2030 and carbon neutrality by 2045 with the full implementation of the plan. This BAAQMD threshold reiterates the GHG reduction and carbon neutrality goals adopted by the State but does not provide a mechanism or metrics for plans to evaluate consistency with these goals.

Alternatively, BAAQMD recommends that a planning document's impact may be evaluated based on consistency with a qualified GHG Reduction Strategy adopted by a local jurisdiction which includes elements as described in the State CEQA Guidelines Section 15183.5(b)(1). The County currently does not have an adopted qualified GHG Reduction Strategy. As a result, option (B) of the BAAQMD's plan-level thresholds would not be applicable.

Therefore, to ensure consistency with the State's GHG reduction goals, the BAAQMD's project-level thresholds detailed earlier have been used for this analysis. Specifically, option (A) of the project-level thresholds is used as the significance threshold in this analysis. The BAAQMD's recommended thresholds of significance have been developed based on typical residential and commercial land use projects and typical long-term communitywide planning documents such as general plans and similar long-range development plans and would be applicable to future projects facilitated by the project.

Applying the BAAQMD's updated project-level thresholds to the project analyzed in this analysis evaluates the capacity for all future projects facilitated by the project to contribute their fair share GHG emission reductions to achieving the State's goals to achieve emissions 40 percent below 1990 levels by 2030 and carbon neutrality by 2045, as stipulated in BAAQMD's adopted plan-level threshold (A). This is the same logic that the BAAQMD uses to determine the significance of project-level GHG emissions. In other words, if all future projects proposed for development facilitated by the project consume no natural gas (1)(a), avoid wasteful, inefficient, or

unnecessary electrical usage (1)(b), comply with EV requirements in CALGreen Tier 2 (2)(a), and achieve the SB 743 target of 15 percent reduction in VMT per capita below the regional average (2)(b), then collectively all projects would have a less-than-significant impact on climate change and would be consistent with the statewide targets for 2030 and 2045, and the project themselves would have a less-than-significant impact on climate change. The BAAQMD has provided the required substantial evidence for this argument in their justification report (BAAQMD, 2022). To summarize,

If a project is designed and built to incorporate these design elements, then it will contribute its portion of what is necessary to achieve California's long-term climate goals—its "fair share"—and an agency reviewing the project under CEQA can conclude that the project will not make a cumulatively considerable contribution to global climate change. If the project does not incorporate these design elements, then it should be found to make a significant climate impact because it will hinder California's efforts to address climate change.

In summary, for purposes of this analysis, a significant GHG impact would be identified if development facilitated by the project does not incorporate the following performance standards adopted by the BAAQMD:

1. No natural gas to all projects proposed for development facilitated by the HEU;
2. Avoid wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines;
3. Compliance with EV requirements in the most recently adopted version of CALGreen Tier 2; and
4. Consistency with the SB 743 target of at least 15 percent reduction in VMT per capita below countywide average. This amounts to 26.3 miles per resident, which is 85 percent of the 2040 countywide average of 30.9 miles per resident.

Consistency with Plans, Policies, and Regulations for GHG Reduction

GHG impacts are also evaluated by assessing whether the HEU would conflict with applicable GHG reduction strategies and local actions approved or adopted by CARB, ABAG, and the County. As discussed in the Regulatory Setting, several plans and policies are in place to help the County, the Bay Area and the State reduce GHG emissions consistent with the State's emission reduction targets for 2030 and 2050. The 2022 Scoping Plan, ABAG's Plan Bay Area 2040, the Santa Clara County Sustainability Master Plan, and the County's General Plan strategies and policies would all apply to the project and all are intended to reduce GHG emissions to meet the statewide targets set forth in AB 32, as amended by SB 32. Thus, the significance of the HEU's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) by considering whether the project would conflict with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions, including: CARB's 2017 and 2022 Scoping Plans; SB 32, E-3-05 and AB 1279; Plan Bay Area 2040; the Santa Clara County Sustainability Master Plan; CALGreen and County Reach Codes.

Methodology and Assumptions

GHG emissions and global climate change represent cumulative impacts from human activities and development projects locally, regionally, statewide, nationally, and worldwide. GHG emissions from all of these sources cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature; instead, the combination of GHG emissions from past, present, and future projects around the world has contributed and will continue to contribute to global climate change and its associated environmental impacts.

No thresholds have been established for assessing whether the GHG emissions of a project would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change. In addition, although GHG emissions impacts are recognized exclusively as cumulative impacts,⁷ such impacts must also be evaluated at a project level under CEQA (California Air Pollution Control Officers Association [CAPCOA], 2008). To evaluate GHG emissions impacts, this analysis determines whether the project would be qualitatively consistent with BAAQMD's project-level GHG thresholds. This evaluation is considered in a cumulative context because the analysis of GHG emissions is only relevant in a cumulative context. GHG emissions associated with the three alternatives have been quantified for informational purposes only.

GHG emissions impacts have also been evaluated by assessing whether the project would conflict with applicable GHG emissions reduction strategies and local actions approved or adopted by CARB, BAAQMD, MTC, and Santa Clara County.

Impacts and Mitigation Measures

Impacts

Impact GHG-1: Implementation of the proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. (*Less than Significant Impact, with Mitigation*)

Housing Element Update and Stanford Community Plan Update

GHG emissions from development facilitated by the project would result in both direct and indirect emissions from construction and operational activities. Direct GHG emissions that would be generated during construction include emissions from the combustion of fuel (e.g., gasoline and diesel) in construction equipment and vehicles. Indirect GHG emissions during construction would be generated from electricity used to power any electric construction equipment, lighting at construction sites and for conveyance of water used for dust suppression activities. Upon completion of construction, housing projects would generate direct GHG emissions primarily from area sources (such as use of consumer products in home, landscaping equipment, etc.) and

⁷ California Air Pollution Control Officers Association, 2008. *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*. January 2008. Available online at <http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf>. Accessed on June 30, 2022.

on-road motor vehicle trips. As detailed above, the County's Reach Codes prohibit natural gas in all new construction for space and water heating; therefore, no direct GHG emissions would be generated from building energy use. However, indirect operational GHG emissions would be generated from the increase in electricity use associated with building energy use along with water and wastewater treatment and conveyance.

For the evaluation of GHG impacts, the BAAQMD's GHG thresholds address the two main direct sources of GHG emissions in land use development projects: building energy use and motor vehicle trips.

Compliance with No Natural Gas Requirement

As detailed in the Regulatory Setting, the County has adopted Reach Codes as part of Ordinance NS-1100.135. Reach Codes are amendments to the State's Energy and Green Building Standards Codes to reduce GHG emissions and include requirements beyond those required by the current Energy Code. Reach Codes adopted by the County in December 2021 require all newly constructed buildings to be all-electric buildings. The ordinance defines an all-electric building as a building that has no natural gas or propane plumbing installed within the building, and that uses electricity as the source of energy for its space heating, water heating (including pools and spas), cooking and clothes drying. The requirements in the Reach Codes go beyond the standards in the 2022 Update to the Title 24 standards that went into effect on January 1, 2023. The 2022 Title 24 standards establish electric-ready requirements in new homes, but do not explicitly prohibit natural gas. Ultimately, however, the move towards all-electrification is also driven by the BAAQMD's updated threshold that stipulates that any new natural gas use in the Bay Area constitutes a significant impact that cannot be mitigated. Since the County's Reach Codes do not allow any exceptions to the all-electric requirement for residential buildings, the Reach Codes would be consistent with this BAAQMD GHG threshold, which requires all-electric buildings with no exceptions.

Avoid wasteful, inefficient, or unnecessary electrical usage

As discussed under Impact EN-1 of *Section 4.5, Energy* of this EIR, development facilitated by the project would not result in wasteful, inefficient, or unnecessary use of electricity. Compliance with the all-electric requirement in the County's Reach Codes and Tier 2 EV Requirements in CALGreen discussed below would result in an increase in electricity use; however, as these requirements are in place to ensure that development proposed in the County and the region complies with the State's GHG reduction goals, the increase would not be considered wasteful, inefficient or unnecessary. In addition, the County's Reach Codes include requirements for onsite photovoltaic systems which would offset part of this increase. Compliance with Title 24 energy efficiency standards and the inherent location of many of the housing opportunity sites in areas with access to transit would also ensure that electricity usage associated with building energy use and transportation would not be wasteful, inefficient or unnecessary. Therefore, future development projects facilitated by the project would be consistent with this BAAQMD GHG threshold.

Future development facilitated by the project would be served by Silicon Valley Clean Energy (SVCE), a CCA that provides electricity with at least 50 percent and up to 100 percent from renewable resources. Although using a CCA does not affect the amount of electricity used, the purpose of this requirement is to reduce electricity-related GHG emissions, which a CCA would lessen or avoid independent of the amount of electricity consumed.

Compliance with Tier 2 EV Requirements in CALGreen

The 2019 California Green Building Standards Code (“CALGreen”, Title 24, Part 11) required new construction and major alterations include “EV Capable” parking spaces which have electrical panel capacity, a dedicated branch circuit, and a raceway to the EV parking spot to support future installation of charging stations.

In addition to the mandatory requirements, CALGreen encourages local jurisdictions to raise the sustainable goals by publishing two “voluntary” tiers of additional requirements, referred to as Tier 1 and Tier 2. Tier 1 adds additional requirements beyond the mandatory measures. Tier 2 further increases the requirements. The CALGreen tiers are only mandatory where local ordinances have specifically adopted them.⁸

In October 2021, the CEC approved the 2022 CALGreen Building Standards Code which added to the 2019 CALGreen mandatory requirements. For multifamily development projects, CALGreen 2022 Tier 2 standards require that 40 percent of the total number of parking spaces to be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use per dwelling unit. In addition, for projects with 20 or more dwelling units, 15 percent of the total number of parking spaces are required to be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents and guests (CBSC, 2002).

According to the County’s Reach Code, new multifamily residential buildings with less than 20 dwelling units are required to have at least one parking space per unit to be Level 2 EV Ready⁹. For multifamily buildings with more than 20 dwelling units, for the first 20 dwelling units, at least one parking space per dwelling unit is to be provided with a Level 2 EV Ready space. In addition, 25 percent of the remaining dwelling units shall be provided with one Level 2 EV Ready space per unit and the remaining units shall be provided with at least one Level 1 EV Ready space per unit. All housing projects proposed as part of the project would be required to meet the EV infrastructure requirements in the County’s Reach Code. However, these requirements in the County’s Reach Code do not require installation of EVSE. Therefore, standards in the County’s Reach Code would not meet the EV infrastructure requirements set forth in the 2022 CALGreen Tier 2 standards.

⁸ “EV Capable” refers to a parking space that is linked to a listed electrical panel with sufficient capacity to provide at least 110/120 volts and 20 amperes to the parking space.

⁹ “Level 2 EV Ready” refers to a parking space served by a complete electrical circuit with 208/240 volt, 40-ampere capacity. The electric circuit would have sufficient capacity to support EV charging in the future when it is linked to the EV Ready space.

According to the BAAQMD’s adopted GHG thresholds, subsequent projects facilitated by the project would be required to show compliance with EV requirements in the version of CALGreen Tier 2 adopted at the time of project review to meet this GHG threshold. As discussed earlier, the CALGreen standards will continue to be updated on a triennial basis with evolving requirements for EV charging. Similarly, the County would also likely update its Reach Code. However, based on the current code, compliance of future HEU and SCP update projects with requirements in the County’s Reach Codes would not ensure compliance with 2022 Tier 2 CALGreen requirements. Therefore, the project would not be consistent with the BAAQMD GHG threshold for EV charging infrastructure.

Consistency with SB 743 VMT Reduction Target of 15 percent below the regional average

As detailed earlier, with the adoption of SB 743, the State of California changed the method of traffic analysis required through CEQA for publicly- and privately-initiated projects. SB 743 requires project reviews under CEQA to evaluate the transportation impacts of new developments in terms of VMT, rather than on-road congestion and automobile delay. Based on the County’s travel demand forecasting model, it is estimated that the service population increase due to the complete implementation of the project in 2040 would generate a VMT of 407,683 miles resulting in a VMT per capita of 16.5. The Countywide average for 2040 without implementation of the project is estimated to be 30.9 miles per capita.

Based on these findings, the VMT generated per capita by projects facilitated by the project would be 47 percent below the countywide average VMT per capita in 2040. Therefore, the project would exceed the 15 percent reduction requirement stipulated in the BAAQMD’s GHG threshold for VMT.

Conclusion

Because compliance with the County’s Reach Code would not ensure compliance with CALGreen Tier 2 EV requirements, the project would not comply with BAAQMD’s updated GHG thresholds, and thus would result in a **potentially significant impact** requiring mitigation. The following mitigation measure is prescribed to address this impact.

Mitigation Measure GHG-1: Require implementation of most recent CALGreen Tier 2 standards for EV infrastructure.

Subsequent housing development projects facilitated by the project shall comply with EV charging requirements in the most recently adopted version of CALGreen Tier 2 at the time that a building permit application is filed.

Significance after Mitigation: With the implementation of Mitigation Measures GHG-1, all subsequent housing projects facilitated by the project would be consistent with the BAAQMD’s updated GHG significance thresholds. Compliance with these thresholds would mean that these projects would not generate GHG emissions either directly or indirectly, that would have a significant impact on the environment. Therefore, this impact is determined to be **less than significant with mitigation**.

Impact GHG-2: Implementation of the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG. (Less than Significant Impact, with Mitigation)

Consistency of the project with respect to CARB’s 2017 and 2022 Scoping Plan, Plan Bay Area 2040, the County’s Sustainability Master Plan, CALGreen codes and the County’s Reach Code is discussed below.

CARB 2017 Scoping Plan Update, SB 32, and EO S-3-05

The 2017 Scoping Plan Update adopted by CARB establishes the framework for achieving the 2030 statewide GHG reduction target of 40 percent below 1990 levels. The 2017 Scoping Plan Update includes local actions that land use development projects and municipalities can implement to support the statewide goal. The 2017 Scoping Plan Update also illustrates in Figure 5 that achieving the 2030 target is consistent with progress toward achieving the 2050 level included in EO S-3-05 and that depending on the success in achieving the 2030 target, it may be possible to achieve the 2050 target earlier than EO S-3-05 (CARB, 2017). The BAAQMD’s updated project-level GHG CEQA thresholds are designed to demonstrate consistency with CARB’s 2017 Scoping Plan Update and the statewide goal of carbon neutrality by 2045 pursuant to EO B-55-13 for new projects and plans. As described under Impact GHG-1, with the implementation of Mitigation Measure GHG-1, the project would be consistent with all four design elements included in BAAQMD’s updated GHG thresholds. Therefore, implementation of the project would also be consistent with the statewide emissions reduction goal for 2030 required by SB 32 and achieved through the 2017 Scoping Plan Update.

The 2017 Scoping Plan Update incorporates a broad array of regulations, policies, and state plans designed to reduce GHG emissions. Those that are applicable to the construction and operation of development provided for under the project are listed in **Table 4.7-3**. Actions, plans, and programs that are not under the control or influence of local jurisdictions, such as the Cap-and-Trade program, are not included in the table.

**TABLE 4.7-3
 CONSISTENCY WITH APPLICABLE GHG REDUCTION ACTIONS IN 2017 SCOPING PLAN UPDATE**

Sector / Source	Category / Description	Consistency Analysis
Energy and Water		
California Renewables Portfolio Standard (RPS) and SB 100	SB 100 requires that the proportion of electricity from renewable sources be 60 percent renewable power by 2030 and 100 percent renewable power by 2045.	Consistent. Electricity supplied to housing development facilitated by the project would be provided by SVCE and Pacific Gas and Electric (PG&E). SVCE and PG&E are required to comply with SB 100 and the RPS.
California Renewables Portfolio Standard and SB 350	SB 350 requires that the proportion of electricity from renewable sources be 50 percent renewable power by 2030 (superseded by SB 100). It also requires the state to double the energy efficiency savings in existing final end uses of electricity and natural gas by retail customers through energy efficiency and conservation.	Consistent. Electricity to development proposed as part of the project would be provided through SVCE and PG&E. SVCE and PG&E are required to comply with both the RPS and SB 350 and will meet these standards. SVCE provides clean energy, including from sources such as wind and solar that are 100 percent carbon-free and is on target to provide 100 percent renewable energy by 2025.

TABLE 4.7-3 (CONTINUED)
CONSISTENCY WITH APPLICABLE GHG REDUCTION ACTIONS IN 2017 SCOPING PLAN UPDATE

Sector / Source	Category / Description	Consistency Analysis
California Building Efficiency Standards (CCR, Title 24, Part 6)	Energy Efficiency Standards for Residential and Nonresidential Buildings	Consistent. Buildings constructed facilitated by the project would be designed to comply with the most recent version of Title 24 Building Energy Efficiency Standards at the time of individual project review.
California Green Building Standards Code (CCR, Title 24, Part 11 - CALGreen)	California's Green Building Standards (CALGreen) Code includes energy and water efficiency requirements, as well as waste management and other design regulations that apply to residential and nonresidential buildings.	Consistent. Buildings constructed as part of the project would comply with mandatory CALGreen requirements. In addition, Mitigation Measure GHG-1 would go beyond mandatory CALGreen measures to require voluntary Tier 2 EV charging requirements for all housing developed facilitated by the project.
Senate Bill X7-7	The Water Conservation Act of 2009 sets an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020. Each urban retail water supplier shall develop water use targets to meet this goal.	Consistent. All water service providers to the County are required to comply with SB X7-7 standards. In addition, CALGreen standards include requirements for water efficiency and conservation, which all future projects facilitated by the project would be required to comply with. Mandatory requirements include prescriptive requirements for flow rate for plumbing fixtures and metering devices.
Mobile Sources		
Advanced Clean Cars Program (ACC) and Mobile Source Strategy (MSS)	In 2012, CARB adopted the ACC program to reduce criteria pollutants and GHG emissions for model year vehicles 2015 through 2025. ACC requires the reduction of criteria pollutants and GHG emissions from light- and medium-duty vehicles. ACC also includes the ZEV regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years. The Mobile Source Strategy (2016) calls for 1.5 million ZEVs (including plug-in hybrid electric, battery-electric, and hydrogen fuel cell vehicles) on the road by 2025, and 4.2 million ZEVs by 2030.	Consistent. These standards would apply to all vehicles used by future residents of housing development facilitated by the project, and to construction workers traveling to and from the construction sites as required by CALGreen. In addition, Mitigation Measure GHG-1 would go beyond mandatory CALGreen regulatory requirements for EV charging infrastructure to require voluntary Tier 2 requirements for all development allowed facilitated by the project and would therefore accommodate future EV charging stations.
SB 375	SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. Under SB 375, CARB is required, in consultation with the state's Metropolitan Planning Organizations, to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035. CARB's current targets call for the Bay Area to reduce per-capita vehicular GHG emissions 10 percent by 2020 and 19 percent by 2035 from a 2005 baseline.	Consistent. Development facilitated by the project would be consistent with MTC and ABAG Plan Bay Area 2040 goals and objectives under SB 375 to implement "smart growth." The project identifies housing opportunity sites in infill locations with access to public transportation. Though some of the sites are better served by transit than others, there would be an overall per-capita decrease in reliance on automobiles with the implementation of the project, thereby reducing VMT and associated GHG emissions. Upon full implementation of the project in 2040, the residential VMT generated per capita facilitated by the project is projected to be 47 percent lower than the Countywide average. The baseline Countywide average is estimated to be 30.9 miles per resident in 2040. Housing developed as part of the project would generate 16.5 miles per resident, well below 26.3 miles per resident, which is 85 percent of the Countywide baseline as required by SB 375.

**TABLE 4.7-3 (CONTINUED)
 CONSISTENCY WITH APPLICABLE GHG REDUCTION ACTIONS IN 2017 SCOPING PLAN UPDATE**

Sector / Source	Category / Description	Consistency Analysis
Solid Waste		
California Integrated Waste Management Act (IWMA) of 1989 and AB 341	IWMA requires all California cities to divert 50-percent of all solid waste from landfill disposal through source reduction, recycling, and composting activities. AB 341 sets a statewide goal for 75 percent disposal reduction by the year 2020.	Consistent. Franchised collection service in unincorporated Santa Clara County is managed by Consumer and Environmental Protection Agency's Integrated Waste Management Services. Residential waste collection and recycling services would be provided to all future housing developed facilitated by the project. The County has adopted ordinances and policies along with an Accepted Materials List in compliance with SB 1383. The solid waste ordinance adopted by the County regulates the collection, disposal, and processing of organic waste in accordance with State law.

As shown above, the project would implement all applicable actions identified in the 2017 Scoping Plan Update to reduce energy use, conserve water, reduce waste generation, promote EV use, and reduce vehicle travel consistent with statewide strategies and regulations. In addition, as detailed under Impact GHG-1, the project would be consistent with the BAAQMD's updated GHG significance thresholds which in turn mean that the project would be consistent with and contribute its fair share to the BAAQMD's GHG reductions required to meet the statewide GHG reduction goal for 2030 pursuant to SB 32 and the 2017 Scoping Plan Update.

AB 1279 and CARB 2022 Scoping Plan

The CARB 2022 Scoping Plan For Achieving Carbon Neutrality was approved in December 2022 and expands on prior scoping plans and recent legislation, such as AB 1279, by outlining a technologically feasible, cost-effective, and equity-focused path to achieve the state's climate target of reducing anthropogenic GHG emissions to 85 percent below 1990 levels and achieving carbon neutrality by 2045 or sooner (CARB, 2022a). To achieve carbon neutrality by 2045, the 2022 Scoping Plan contains GHG emissions reductions, technology, and clean energy mandated by statutes; reduction of short-lived climate pollutants; and mechanical CO₂ capture and sequestration actions. **Table 4.7-4** shows the consistency of the project with the reduction measures and recommendations contained in CARB's 2022 Scoping Plan.

**TABLE 4.7-4
 CONSISTENCY OF THE PROJECT WITH THE 2022 SCOPING PLAN**

2022 Scoping Plan Action	Consistency Determination
Increase in Renewable Energy and Decrease in Oil and Gas Use Actions	Consistent with the County's Reach Code, all housing development proposed as part of the project would be constructed as all electric buildings. Electricity from SVCE supplied to the housing projects contains a minimum of 50 percent renewables with the percentage increasing in future years to meet Sb 100 requirements. Implementation of the project would reduce overall countywide VMT per resident, thereby reducing transportation fuel use. Mitigation Measure GHG-1 would require installation of EV charging infrastructure consistent with CALGreen Tier 2 standards and beyond the County's Reach Code requirements. This would help reduce oil use by promoting the use of clean electricity as a transportation fuel instead.

TABLE 4.7-4 (CONTINUED)
CONSISTENCY OF THE PROJECT WITH THE 2022 SCOPING PLAN

2022 Scoping Plan Action	Consistency Determination
Low Carbon Fuels Actions	The Low Carbon Fuel Standard is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits and is implemented at the state level. With the implementation of Mitigation Measure GHG-1, the project would encourage the use of clean, low-carbon electricity as an alternative to petroleum-based fossil fuels for transportation.
Expansion of Electrical Infrastructure Actions	Mitigation Measure GHG-1 would require installation of EV charging infrastructure consistent with CALGreen Tier 2 standards and beyond City's Reach Code requirements.
Climate Ready and Climate-Friendly Buildings	All future development proposed as part of the project would comply with current Title 24 and CALGreen standards which promote energy efficiency, increased use of renewable energy and incorporation of sustainable design features in construction and operation.
Expanded Use of Zero-Emission Mobile Source Technology Actions	Mitigation Measure GHG-1 would require installation of EV charging infrastructure consistent with CALGreen Tier 2 standards and beyond City's Reach Code requirements.
Mechanical Carbon Dioxide Removal and Carbon Capture and Sequestration Actions	Not applicable.
Improvements to Oil and Gas Facilities Actions	Not applicable.
Reduced High-GWP Fluorinated Gases Actions	Not applicable.
Forest, Shrubland, and Grassland Management Actions	Not applicable.
Agricultural Actions	Not applicable.
Organic Waste Diversion and Composting Actions	Franchised collection service in Unincorporated Santa Clara County is managed by Consumer and Environmental Protection Agency's Integrated Waste Management Services. Consistent with SB 1383, the County would provide mandatory organic waste diversion and composting services to all residents of housing facilitated by the project. The County has adopted ordinances and policies along with an Accepted Materials List in compliance with SB 1383. The solid waste ordinance adopted by the County regulates the collection, disposal, and processing of organic waste in accordance with State law.
Afforestation, Urban Forestry Expansion, Urban Greening, Avoided Natural and Working Land Use Conversion, and Wetland Restoration Actions	Not applicable.
Reduced VMT Actions	Development facilitated by the project would be consistent with MTC and ABAG Plan Bay Area 2040 goals and objectives under SB 375 to implement "smart growth." The project identifies housing opportunity sites in infill locations with access to public transportation. Though some of the sites are better served by transit than others, there would be an overall per-capita decrease in reliance on automobiles with the implementation of the project, thereby reducing VMT and associated GHG emissions. Upon full implementation of the project in 2040, the residential VMT generated per capita under the project is projected to be 47 percent lower than the Countywide average. The baseline Countywide average is estimated to be 30.9 miles per resident in 2040. Housing developed as part of the project would generate in 16.5 miles per resident, well below 26.3 miles per resident, which is 85 percent of the Countywide baseline as required by SB 375.

SOURCES: CARB 2022a

Plan Bay Area 2040

Pursuant to SB 375, ABAG and the MTC adopted *Plan Bay Area 2040* to establish targets and strategies for meeting the region's needs for housing at all income levels, while reducing GHG emissions by private passenger cars and light-duty truck traffic. The core strategy of *Plan Bay Area 2040* is to encourage growth in existing communities along the existing transportation network, focusing new development in PDAs and TPAs in urbanized centers where more public transit and other mobility options are available to reduce the use of cars and light trucks. In addition to encouraging focused growth through significant transit and roadway performance investments, *Plan Bay Area 2040* directs funding to neighborhood active-transportation and complete-streets projects, climate initiatives, lifeline transportation and access initiatives, pedestrian and bicycle safety programs, and PDA planning. Some of the proposed housing opportunity sites are located within a priority development area. In addition, most of the project's dwelling units would be located in urban areas in proximity to urban amenities and alternative transportation options and could take advantage of the complementary land uses to reduce vehicular trip making and reduce vehicular trip length, both of which reduce per capita VMT. As discussed in Section 4.14, *Transportation*, of this EIR, notwithstanding the fact that the project would not meet the significance threshold of 15 percent below the regional per capita VMT set forth in the OPR Technical Advisory and would therefore have a significant transportation impact, the project would generate fewer miles per capita when compared to the Countywide average and the Countywide residential VMT per capita would decrease with the addition of the project. The project is therefore consistent with *Plan Bay Area 2040* for GHG emissions reductions. Most of the project sites are located in areas that have already been determined to fall below applicable VMT metrics based on their proximity to quality transit facilities. In addition, all of the projects would be developed at higher densities, which generally results in lower VMT. As such, and on balance, the project's overall VMT is expected to fall below applicable GHG emissions thresholds, and the project would therefore be consistent with *Plan Bay Area 2040*, particularly since the project would be directed towards developing higher-density residential development on infill sites alongside the existing transportation network and in proximity to quality transit options. These are all goals of the Plan, and the project would help to fulfill those goals.

Santa Clara County Sustainability Master Plan

The County of Santa Clara's Sustainability Master Plan (SMP) integrates the County's many existing policies, programs, practices, and countywide initiatives that promote the three core elements of sustainability: Environment, Economy, and Equity. The SMP's mission is achieved through promoting actions across four Priority Areas that combine include eight goals, 30 strategies, and 90 targets to monitor the implementation of the County's sustainability vision.

The strategies and targets that guide the County's progress towards the eight goals identified in the SMP are primarily implementable at the county level through ordinances and policies and would also be applicable to the development of future housing projects facilitated by the project. Strategies in the SMP aim to transition to a 100 percent renewable energy system by 2045, enhance energy efficiency of existing buildings and electrify new buildings to help the County become carbon neutral and support a transition to zero waste and zero emissions. All

development in the county, including development facilitated by the project would be required to comply with these strategies and hence not conflict with the SMP.

CALGreen Code and Santa Clara County Reach Codes

Development facilitated by the project would be required to comply with the most recent update to the CALGreen Code. All projects facilitated by the project would also be required to comply with the County's Reach Codes that aim to achieve energy savings and GHG reductions beyond the State's minimum requirements. In addition, Mitigation Measures GHG-1 would require all housing development facilitated by the project to be constructed to comply with Tier 2 EV charging requirements in the applicable CALGreen code at the time of individual project review.

Conclusion

With implementation of new Mitigation Measures GHG-1, the project would not conflict with the GHG reduction targets established by EO S-3-05, SB 32, and AB 1279, or the reduction measures identified in CARB's 2017 and 2022 Scoping Plans. In addition, the project would not conflict with Plan Bay Area or the Santa Clara County Sustainability Master Plan, and would be subject to measures in the CALGreen Code and the County's Reach Codes.

Mitigation: Implement Mitigation Measures GHG-1.

Significance after Mitigation: With the implementation of Mitigation Measures GHG-1, all subsequent housing projects facilitated by the project would be consistent with the BAAQMD's updated GHG significance thresholds. Compliance with these thresholds would mean that these projects would not generate GHG emissions that would conflict with the State's GHG reduction goals or plans and policies in place to achieve these goals. Therefore, this impact would be considered **less than significant with mitigation**.

Cumulative Impacts

Global GHG emissions are inherently a cumulative concern that is understood for CEQA purposes to be an existing significant and adverse condition. Accordingly, the significance of GHG emissions in this analysis is determined based on whether such emissions would have a cumulatively considerable impact on global climate change. Although the geographic scope of cumulative impacts related to GHG emissions is global, this analysis focuses on the project's direct and/or indirect generation of GHG emissions on the region and the state. CAPCOA considers GHG impacts to be exclusively cumulative impacts, in that no single project could, by itself, result in a substantial change in climate (CAPCOA, 2008). Therefore, the evaluation of cumulative GHG impacts presented in this section considers whether the project would make a considerable contribution to cumulative emissions of GHG. Implementation of the project would result in a less than significant impact with mitigation. Implementation of Mitigation Measures GHG-1a and GHG-1b would ensure consistency with the State's 2030 GHG reduction goals. Therefore, the project's incremental impact relative to GHG emissions in the cumulative context would also be **less than significant with mitigation**.

4.7.5 References

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