

## 4.5 Greenhouse Gas Emissions and Global Climate Change

This section discusses potential impacts related to greenhouse gas emissions and climate change related to the Santa Barbara County Last-Mile Broadband Program (“Broadband Program” or “Project”). This section describes the physical environmental and regulatory setting, the criteria and thresholds used to evaluate the significance of impacts, the methods used in evaluating these impacts, and the results of the impact assessment. Air quality impacts are discussed in Section 4.1, *Air Quality*.

### 4.5.1 Environmental Setting

#### Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth’s atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term “climate change” is often used interchangeably with the term “global warming,” but climate change is preferred because it conveys that other changes are happening in addition to rising temperatures. One identified cause of global warming is an increase of Greenhouse Gases (GHGs) in the atmosphere. GHGs are those compounds in Earth’s atmosphere that play a critical role in determining Earth’s surface temperature.

When energy from the sun reaches the Earth, the planet absorbs some of this energy and radiates the rest back to space as heat. The Earth’s surface temperature depends on this balance between incoming and outgoing energy. Average conditions tend to remain stable unless the Earth experiences a force that shifts the energy balance. A shift in the energy balance causes the Earth’s average temperature to become warmer or cooler. Earth’s natural warming process is known as the “greenhouse effect.” It is called the greenhouse effect because Earth and the atmosphere surrounding it are similar to a greenhouse with glass panes in that the glass allows solar radiation (sunlight) into Earth’s atmosphere but prevents radiative heat from escaping, thus warming Earth’s atmosphere. However, as GHG from human activities increase, they build up in the atmosphere and warm the climate, leading to many other changes around the world - in the atmosphere, on land, and in the oceans, with associated adverse climatic and ecological consequences (USEPA 2024a). Scientists studying the particularly rapid rise in global temperatures have determined that human activity has resulted in increased emissions of GHGs, primarily from the burning of fossil fuels (from motor vehicle travel, electricity generation, consumption of natural gas, industrial activity, manufacturing, etc.), deforestation, agricultural activity, and the decomposition of solid waste.

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. GHGs are emitted by natural processes and human activities. The gases widely seen as the principal contributors to human-induced climate change are shown in **Table 4.5-1, *Description of Identified GHGs***, and include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxides (N<sub>2</sub>O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere, and natural processes, such as oceanic evaporation, largely determine its atmospheric concentrations. Of these gases, CO<sub>2</sub> and CH<sub>4</sub> are emitted in the greatest quantities from human activities. Emissions of CO<sub>2</sub> are usually by-products of fossil fuel combustion, and CH<sub>4</sub> results from off-gassing associated with agricultural

practices. Human-made GHGs, many of which have greater heat-absorption potential than CO<sub>2</sub>, include fluorinated gases, SF<sub>6</sub>, and NF<sub>3</sub> (USEPA 2024a).

**TABLE 4.5-1  
 DESCRIPTION OF IDENTIFIED GHGS**

<b>GHG</b>	<b>General Description</b>
<b>Carbon Dioxide (CO<sub>2</sub>)</b>	An odorless, colorless GHG, which has both natural and anthropocentric sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human-caused) sources of CO <sub>2</sub> are burning coal, oil, natural gas, and wood.
<b>Methane (CH<sub>4</sub>)</b>	A flammable gas and the main component of natural gas. When one molecule of CH <sub>4</sub> is burned in the presence of oxygen, one molecule of CO <sub>2</sub> and two molecules of water are released. A natural source of CH <sub>4</sub> is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain CH <sub>4</sub> , which is extracted for fuel. Other sources are from landfills, fermentation of manure, and cattle.
<b>Nitrous Oxide (N<sub>2</sub>O)</b>	A colorless GHG. High concentrations can cause dizziness, euphoria, and sometimes slight hallucinations. N <sub>2</sub> O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used in rocket engines, race cars, and as an aerosol spray propellant.
<b>Hydrofluorocarbons (HFCs)</b>	Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in CH <sub>4</sub> or ethane (C <sub>2</sub> H <sub>6</sub> ) with chlorine and/or fluorine atoms. CFCs are non-toxic, non-flammable, insoluble, and chemically unreactive in the troposphere (the level of air at Earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. Because they destroy stratospheric ozone, the production of CFCs was stopped as required by the Montreal Protocol in 1987. HFCs are synthetic man-made chemicals that are used as a substitute for CFCs as refrigerants. HFCs deplete stratospheric ozone, but to a much lesser extent than CFCs.
<b>Perfluorocarbons (PFCs)</b>	PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane and hexafluoroethane. The two main sources of PFCs are primary aluminum production and semi-conductor manufacturing.
<b>Sulfur Hexafluoride (SF<sub>6</sub>)</b>	An inorganic, odorless, colorless, non-toxic, and non-flammable gas. SF <sub>6</sub> is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.
<b>Nitrogen Trifluoride (NF<sub>3</sub>)</b>	An inorganic, non-toxic, colorless, odorless, non-flammable gas. NF <sub>3</sub> is used in the manufacture of semi-conductors, as an oxidizer of high energy fuels, for the preparation of tetrafluorohydrazine, as an etchant gas in the electronic industry, and as a fluorine source in high power chemical lasers.

NOTE: GHGs identified in this table are ones identified in the Kyoto Protocol and other synthetic gases recently added to the IPCC's Fifth Assessment Report.

SOURCES: Association of Environmental Professionals, 2007. Alternative Approaches to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents, Final, June 29, 2007. [https://www.counties.org/sites/main/files/file-attachments/aep\\_global\\_climate\\_change\\_june\\_29\\_final1.pdf](https://www.counties.org/sites/main/files/file-attachments/aep_global_climate_change_june_29_final1.pdf). Accessed June 2024.

USEPA, 2009. Acute Exposure Guideline Levels (AEGs) for Nitrogen Trifluoride Interim; September. [https://www.epa.gov/sites/default/files/2014-09/documents/nitrogen\\_trifluoride\\_interim\\_ornl\\_sep09\\_c.pdf](https://www.epa.gov/sites/default/files/2014-09/documents/nitrogen_trifluoride_interim_ornl_sep09_c.pdf). Accessed June 2024.

Not all GHGs possess the same ability to induce climate change. CO<sub>2</sub> is the most abundant GHG in Earth's atmosphere. Other GHGs are less abundant but have higher global warming potential (GWP) than CO<sub>2</sub>. Thus, emissions of other GHGs are commonly quantified in the units of equivalent mass of carbon

dioxide (CO<sub>2</sub>e). Mass emissions are calculated by converting pollutant-specific emissions to CO<sub>2</sub>e emissions by applying the proper global warming potential (GWP) value. The larger the GWP, the more that a given gas warms the Earth compared to CO<sub>2</sub> over that time.<sup>1</sup> These GWP ratios are available from the Intergovernmental Panel on Climate Change (IPCC). Historically, GHG emission inventories have been calculated using the GWPs from the IPCC’s Second Assessment Report (SAR) (IPCC 1995). GWP is based on several factors, including the radiative efficiency (heat-absorbing ability) of each gas relative to that of CO<sub>2</sub>, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years otherwise referred to as atmospheric lifetime) relative to that of CO<sub>2</sub>. The IPCC updated the GWP values based on the science in its Fourth Assessment Report (AR4) (IPCC 2007). The California Air Resources Board (CARB) reports GHG emission inventories for California using the GWP values from the IPCC AR4, which is consistent with international reporting standards. By applying the GWP ratios, Project-related CO<sub>2</sub>e emissions can be tabulated in metric tons of carbon dioxide equivalents (MTCO<sub>2</sub>e) per year. Typically, the GWP ratio corresponding to the warming potential of CO<sub>2</sub> over a 100-year period is used as a baseline. The GWP and atmospheric lifetimes for key regulated GHGs are provided in **Table 4.5-2, Atmospheric Lifetimes and GWP**.

**TABLE 4.5-2  
 ATMOSPHERIC LIFETIMES AND GWPS**

<b>Gas</b>	<b>Atmospheric Lifetime (Years)</b>	<b>GWP (100-Year Time Horizon)</b>
Carbon Dioxide (CO <sub>2</sub> )	50-200	1
Methane (CH <sub>4</sub> )	12 (+/-3)	25
Nitrous Oxide (N <sub>2</sub> O)	114	298
HFC-23: Fluoroform (CHF <sub>3</sub> )	270	14,800
HFC-134a: 1,1,1,2-Tetrafluoroethane (CH <sub>2</sub> FCF <sub>3</sub> )	14	1,430
HFC-152a: 1,1-Difluoroethane (C <sub>2</sub> H <sub>4</sub> F <sub>2</sub> )	1.4	124
PFC-14: Tetrafluoromethane (CF <sub>4</sub> )	50,000	7,390
PFC-116: Hexafluoroethane (C <sub>2</sub> F <sub>6</sub> )	10,000	12,200
Sulfur Hexafluoride (SF <sub>6</sub> )	3,200	22,800
Nitrogen Trifluoride (NF <sub>3</sub> )	740	17,200

SOURCE: IPCC, 2007.

## Greenhouse Gas Emissions Inventories

### Global Emissions Inventory

Global GHG emissions due to human activities have grown since pre-industrial times. As reported by the United States Environmental Protection Agency (USEPA), global carbon emissions from human activities increased by about 43 percent between 1990 and 2015 with CO<sub>2</sub> emissions (which account for

<sup>1</sup> GWPs and associated CO<sub>2</sub>e values were developed by the Intergovernmental Panel on Climate Change (IPCC) and published in its Second Assessment Report (SAR) in 1996. Historically, GHG emission inventories have been calculated using the GWPs from the IPCC’s SAR. The IPCC updated the GWP values based on the Fourth Assessment Report (AR4). CARB reports GHG emission inventories for California using the GWP values from the IPCC AR4.

about three-fourths of total global GHG emissions) increasing approximately 51 percent over this same period (USEPA 2024a). In addition, in the Global Carbon Budget 2023 report, published in December 2023, atmospheric CO<sub>2</sub> concentrations in 2022 were found to be approximately 51 percent above the concentration at the start of the Industrial Revolution (P. Friedlingstein et. al. 2023). Historical measurements show that the current global atmospheric concentrations of carbon dioxide, methane, and nitrous oxide are unprecedented compared with the past 800,000 years (USEPA 2023). Global increases in CO<sub>2</sub> concentrations are due primarily to fossil fuel use, with land use change providing another significant but smaller contribution. Regarding emissions of non-CO<sub>2</sub> GHGs, these have also increased significantly since 1990 (USEPA 2023). Studies have concluded that it is very likely that the observed increase in methane (CH<sub>4</sub>) concentration is predominantly due to agriculture and fossil fuel use (USEPA 2023).

Worldwide anthropogenic emissions of GHGs were approximately 59,000 million metric tons (MMT) of CO<sub>2</sub>e in 2019 (IPCC 2023). In 2019, approximately 79 percent of global GHG emissions came from the sectors of energy, industry, transport, and buildings together and 22 percent from agriculture, forestry, and other land use (IPCC 2023).

### ***United States Emissions Inventory***

Total United States (U.S.) GHG emissions in 2022 were 6,343 MMTCO<sub>2</sub>e and 5,489 MMTCO<sub>2</sub>e after accounting for sequestration from the land sector (USEPA 2024b). Emissions increased in 2022 by 1 percent (after accounting for sequestration from the land sector) compared to the previous year driven largely by an increase in CO<sub>2</sub> emissions from fossil fuel combustion (USEPA 2024c). In 2022, GHG emissions were 17 percent below 2005 levels after accounting for sequestration from the land sector (USEPA 2024c). In 2022, the transportation and industrial end-use sectors accounted for 29 percent and 30 percent, respectively, of nationwide GHG emissions while the residential and commercial end-use sectors accounted for 31 percent of nationwide GHG emissions, and agriculture accounted for 10 percent of nationwide GHG emissions with electricity emissions distributed among the various sectors (USEPA 2024c).

### ***California Emissions Inventory***

Based on the CARB's California Greenhouse Gas Inventory for 2000-2021, California produced 381.3 MMT of CO<sub>2</sub>e in 2021. The major source of GHG emissions in California is the transportation sector, which comprises 39 percent of the state's total GHG emissions. The industrial sector is the second largest source, comprising 22 percent of the state's GHG emissions while electric power accounts for approximately 11 percent (CARB 2024a). The magnitude of California's total GHG emissions is due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions as compared to other states is its relatively mild climate. In 2016, the State of California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels as emissions fell below 431 MMTCO<sub>2</sub>e (CARB 2023). The 2030 statewide target emissions level is 260 MMTCO<sub>2</sub>e (CARB 2017).

## Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources though potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21<sup>st</sup> century than were observed during the 20<sup>th</sup> century. Each of the past three decades has been warmer than all the previous decades in the instrumental record, and the decade from 2000 through 2010 has been the warmest. The observed global mean surface temperature (GMST) from 2011 to 2020 was approximately 1.1 degree Celsius (°C) higher than the average GMST over the period from 1850 to 1900, with larger increases over land (1.59°C) than over the ocean (0.88°C) (IPCC 2023). In addition to these findings, there are identifiable signs that global warming is currently taking place, including observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones. Human influence was very likely the main driver of these increases since at least 1971 (IPCC 2023).

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 0.6 to 1.1°C higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include reduced water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (State of California 2019). In addition to statewide projections, *California's Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally specific climate change case studies (State of California 2019). However, while there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. A summary follows of some of the potential effects that could be experienced in California and the Santa Barbara County region as a result of climate change.

The California Energy Commission (CEC) has a geospatial data tool (Cal-Adapt) that provides a view of how the state could be impacted by climate change. Below is a summary of some of the potential climate change effects and relevant Cal-Adapt data, reported by an array of studies that could be experienced in California as a result of global warming and climate change.

### **Hydrology and Sea Level Rise**

Climate change could affect the intensity and frequency of storms and flooding (State of California 2019). Furthermore, climate change could induce substantial sea level rise in the coming century. Rising sea level increases the likelihood of and risk from flooding. Sea levels are rising faster now than in the previous two millennia, and the rise will probably accelerate, even with robust GHG emission control measures. Global mean sea level increased by 0.20 meters (m) between 1901 and 2018 (IPCC 2023). The average rate of sea level rise was 1.3 millimeters per year (mm/yr) between 1901 and 1971, increasing to 1.9 mm/yr between 1971 and 2006, and further increasing to 3.7 mm/yr between 2006 and 2018 (IPCC 2023). The most recent IPCC report predicts a mean sea level rise of 0.25 to 0.94 meter by 2100 (IPCC 2018). A rise in sea levels could erode 31 to 67 percent of southern California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California's water supply due to saltwater intrusion and induce groundwater flooding and/or exposure of buried infrastructure (State of California 2019). Furthermore, increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Sea level rise is defined as the rising of the level of the sea as a result of global warming. Erosion is a natural process which alters existing geomorphic features. Erosion can occur due to a number of factors, including winter storms, tidal action, wind-generated high surf, wave action, and rising sea levels. The Santa Barbara County Multi-Jurisdictional Hazard Mitigation Plan (County of Santa Barbara 2023a) identifies high-hazard areas within the County related to flood and coastal surge vulnerability. Storm waves that coincide with very high tides will continue to be a threat to the Santa Barbara County coastline, including the Cities of Goleta, Santa Barbara, and Carpinteria, in the next several decades. The impacts of sea-level rise will likely begin to increase and become more noticeable during the second half of the twenty-first century than they have been in the recent past, particularly when combined with large El Niño-driven storm waves and high tides. A continuing rise in sea level will produce a range of hazards and impacts, including increasingly frequent coastal flooding, gradual inundation of low-lying beach and shoreline areas, continued and likely increased erosion of coastal cliffs and bluffs, and flooding at stream mouths, with associated damage to development.

### ***Air Quality***

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century (State of California 2019). Higher temperatures are conducive to air pollution formation, and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains (State of California 2019). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. 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. However, if higher temperatures are accompanied by wetter, rather than drier, conditions, the rains could tend to temporarily clear the air of particulate pollution, which would effectively reduce the number of large wildfires and thereby ameliorate the pollution associated with them, although it would not eliminate all effects of increased temperatures (CNRA 2009).

According to the Cal-Adapt website’s “Local Climate Change Snapshot” database, the County of Santa Barbara could see an average annual increase in maximum temperature to 71.9 to 72.7°F in the mid-century (2035–2064) and 72.9 to 75.6°F at the end of the century (2070–2099) compared to 68.7°F for the baseline period (1961–1990) (CalAdapt 2024). The average annual number of extreme heat days also could increase to 10 to 13 days in the mid-century (2035–2064) and 14 to 26 days at the end of the century (2070–2099) compared to 3 days for the baseline period (1961–1990) (CalAdapt 2024).

### ***Water Supply***

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. With warmer temperatures and lower precipitation volumes, drought conditions continue in the state. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry

precipitation extremes have become more common (CDWR 2022). The years 2000 to 2021 have been the driest 22-year period in the last millennium in California and the rest of the southwestern United States (CDWR 2022). This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. In recent years, the fraction of precipitation that falls as rain instead of snow has increased in the Sierra Nevada and Southern Cascades, reducing the water stored in the snowpack that provides most of California's water supply (CDWR 2022). California has also seen a change in the timing of precipitation consistent with climate change projections. A comparison of historical and current precipitation (1960–1989 vs 1990–2019) averaged over the entire state shows a change in the monthly distribution of precipitation; a progressively delayed and shorter, sharper rainy season in California (CDWR 2022). Warming temperatures and their influence on a rising snowline (the altitude above which snow remains on the ground) make winter precipitation more likely to fall as rain instead of snow and run off into the ocean instead of being stored in reservoirs (CDWR 2022). Projections indicate that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (State of California 2018).

Santa Barbara County's water supply has diversified sources, including the Santa Ynez River watershed, State Water Project, groundwater, and recycled water, along with a strong water conservation program. Future temperature and weather pattern changes could result in more variable or reduced supplies from the Santa Ynez River watershed and State Water Project, and potentially more saltwater intrusion issues for groundwater. Studies and planning to address water supply issues, including climate change effects, are ongoing by the State (Department of Water Resources), regional agencies (e.g., Cachuma Operation and Maintenance Board, Santa Barbara County's Integrated Regional Water Management Program), and local agencies.

According to the Cal-Adapt website's "Local Climate Change Snapshot" database, the County of Santa Barbara could see an average annual length of dry spells of 154 to 155 days in the mid-century (2035–2064) and 154 to 162 days at the end of the century (2070–2099), compared to 146 days for the baseline period (1961–1990). The average annual precipitation could decrease to 18.3 to 18.4 inches in the mid-century (2035–2064) and potentially increase to 18.7 to 18.8 inches at the end of the century (2070–2099), compared to 18.6 inches for the baseline period (1961–1990) (CalAdapt 2024).

### **Agriculture**

California has an over \$59 billion annual agricultural industry that produces over a third of the country's vegetables and three-quarters of the country's fruits and nuts (CDFA 2024). Higher CO<sub>2</sub> levels can stimulate plant production and increase plant water-use efficiency. When plant water demand exceeds the amount available in the soil, vegetation becomes stressed, and more easily succumbs to attacks by pests and pathogens. Hot and dry conditions increase the water deficit and make dead vegetation easier to burn, heightening wildfire risk (CDWR 2022). In parts of the Central Valley, certain fruits and nuts are maturing more quickly with warming temperatures, leading to earlier harvests (CDWR 2022). Shorter maturation times generally lead to smaller fruits and nuts. Additionally, the risk of crop damage has increased as certain insects multiply faster with warmer temperatures. Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality.

## **Ecosystems and Wildlife**

Climate change and the potential resultant changes in weather patterns could have ecological effects on the global and local scales. Soil moisture is likely to decline in many regions as a result of higher temperatures, and intense rainstorms are likely to become more frequent. Rising temperatures and precipitation change could impact ecosystems and wildlife by causing population declines, shifting in their geographic distributions or ranges to track suitable climates, and facilitating the spread of invasive species, pest, pathogens, and diseases. According to studies, certain birds and mammals are found at different elevations in the Sierra Nevada compared to a century ago. Range shifts were observed in almost 75 percent of small mammal species and over 80 percent of bird species surveyed (CDWR 2022). In the Mojave Desert, which became warmer and dryer, widespread collapse of bird communities occurred due to dehydration (CDWR 2022). Additionally, climate-influenced changes in freshwater and ocean conditions are threatening the survival of Chinook salmon in Northern California rivers (CDWR 2022). Due to changing ocean conditions, fewer California sea lion pup births, higher pup mortality, and poor pup conditions at San Miguel Island off Santa Barbara County occurred during years when sea surface temperatures are unusually warm in their breeding area (CDWR 2022). In these years, the fish they feed on are less abundant and the nursing mothers must either travel farther to obtain food or eat less nutritious prey.

### **Wildfire**

Wildfires in California over the past two decades are shown to be increasing in size, severity, and adverse impacts (CARB 2020a). Warming temperatures as a result of climate change influences the length of both the fire and growing seasons and consequently affects the amount of time and intensity fires burn at and the amount of available fuels. Higher temperatures lead to drought, which decreases the fuel moisture and increases the likelihood of ignitions. The lack of moisture available to plants has also been associated with changes in the structure and composition of California's forests and woodlands—changes that have been accelerated by wildfires (CDWR 2022). Dead or dying vegetation increases the risk of wildfires: for example, the unusually high tree mortality seen during the 2012-2016 drought, which was caused by water stress, created a massive fuel load (CDWR 2022). The total area burned annually since 1950 ranged from a low in 1963 of 32,000 acres to a record high in 2020 of 4.2 million acres – more than 4 percent of the state's roughly 100 million acres of land (CDWR 2022).

According to the Cal-Adapt website's "Local Climate Change Snapshot" database, the County of Santa Barbara could see an average annual area burned of approximately 24,189.7 to 17,681.5 acres in the mid-century (2035–2064) to 24,189.7 to 24,330.4 acres by the end of the century (2070–2099), compared to 17,791.6 to 17,681.5 acres for the baseline period (1961–1990) (CalAdapt 2024). Increased wildfire activity leads to more GHG emissions from sources that would otherwise be carbon sinks (CARB 2020a). Between 2000 and 2019, emissions from wildfires ranged from a low of 1.2 MMTCO<sub>2</sub>e in 2010 to a high of 39 MMTCO<sub>2</sub>e in 2018, with an annual average of 14 MMTCO<sub>2</sub>e (CARB 2020a). Further, CARB estimates that wildfire emissions increased dramatically in 2020, totaling 112 MMTCO<sub>2</sub>e (CARB 2020a).

### **Humans**

Humans are better able to adapt to a changing climate than plants and animals in natural ecosystems. Nevertheless, climate change poses direct and indirect risks to public health, as people will experience earlier death and worsening illnesses. Heat causes the most weather-related deaths in the United States (CDWR 2022). Hospitalizations and deaths spike in years with especially high summertime temperatures.



Additionally, indicators of the impacts of climate change on human health show that warming temperatures and changes in precipitation can affect vector-borne pathogen transmission and disease patterns in California.

## 4.5.2 Regulatory Setting

### Federal

The U.S. Supreme Court determined in *Massachusetts v. EPA* (2007) 549 U.S. 497 that the USEPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. The USEPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the USEPA issued a Final Rule that established the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

In *Utility Air Regulatory Group v. Environmental Protection Agency* (134 S. Ct. 2427 [2014]), the U.S. Supreme Court held the USEPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source required to obtain a PSD or Title V permit. The Court also held that PSD permits otherwise required based on emissions of other pollutants, may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

The Federal Government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, CH<sub>4</sub> and other non-CO<sub>2</sub> gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

### **Safer Affordable Fuel-Efficient Vehicles Rule and Corporate Average Fuel-Economy Rule**

On September 27, 2019, the USEPA and the National Highway Traffic Safety Administration (NHTSA) published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program. The SAFE Rule Part One revokes California's authority to set its own GHG emissions standards and to adopt its own zero-emission vehicle mandates. On April 30, 2020, the USEPA and the NHTSA published Part Two of the SAFE Vehicles Rule, which revised corporate average fuel economy and CO<sub>2</sub> emissions standards for model years 2021-2026 passenger cars and trucks such that the standards increase by approximately 1.5 percent each year through model year 2026 as compared to the 2012 standards which required an approximately five percent annual increase (NHTSA 2020). To account for the effects of the Part Two Rule, CARB released off-model adjustment factors on June 26, 2020, to adjust GHG emissions outputs from the EMFAC model (CARB 2020b).

In February 2022, the USEPA issued the Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards (USEPA 2021). This final rule revises current GHG standards beginning for vehicles in model year 2023 and through model year 2026 and establishes the most stringent GHG standards ever set for the light-duty vehicle sector that are expected to result in average fuel economy label values of 40 mpg, while the standards they replace (the SAFE rule standards) would achieve only 32 mpg in model year 2026 vehicles (USEPA 2021).

On June 7, 2024, NHTSA announced the Final Rule for Corporate Average Fuel Economy (CAFE) Standards for Model Years 2027-2031 and Heavy-Duty Pickup Trucks and Vans (HDPUV) Fuel Efficiency Standards for Model Years 2030-2035 (NHTSA, 2024). The CAFE standards for passenger cars and light trucks increase at a rate of two percent per year for passenger cars in model years 2027-2031, zero percent per year for light trucks in model years 2027-2028 and two percent per year for light trucks in model years 2029-2031 (NHTSA 2024). The HDPUVs standards increase at a rate of 10 percent per year for model years 2030-2032 that and increase at a rate of 8 percent per year for model years 2033-2035 (NHTSA 2024).

## **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 from commercial and private activities within the state.

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

EO S-3-05 set forth the following targets for progressively reducing statewide GHG emissions (Office of the Governor 2005):

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order created the California Climate Action Team (CAT) to reduce GHG emissions to the target levels. The CAT produces biannual reports describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. The first CAT Report to the Governor and the Legislature in 2006 contained recommendations and strategies to help meet the targets in EO S-3-05. The most recent 2022 State Agency Greenhouse Gas Reduction Report Card documents the effectiveness of measures to reduce GHG emissions in California and GHG emissions from state agencies' operations. This report card documents reductions of 1.157 MMTCO<sub>2e</sub> that occurred in 2021 (CalEPA 2023). In 2016, GHG emissions were 429 MMTCO<sub>2e</sub>, showing that California reached its 2020 emissions target (431 MMTCO<sub>2e</sub>) four years early and emissions are continuing to decline.

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

In 2015, EO B-30-15 promulgated the following targets and measures (Office of the Governor 2015):

- 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.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

### ***Executive Order B-55-18***

In 2018, EO B-55-18 established a statewide policy to achieve carbon neutrality by 2045 and maintain net negative emissions thereafter. As per EO B-55-18, CARB is directed to work with relevant state agencies to develop a framework for implementation and accounting that tracks progress toward this goal and to ensure future Climate Change Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. California is making progress towards the 2045 goal, however the pathway to carbon neutrality is still under development. According to CARB, there will be a strong reliance on energy efficiency, electrification, low carbon fuels (including low-carbon electricity), and CO<sub>2</sub> removal in future policies and strategies for reaching the ambitious goal. The path to carbon neutrality lies in striving for zero emissions from all new sources and maximum sequestration to offset existing sources.

### ***Assembly Bill 32 – California Global Warming Solutions Act of 2006***

In 2006, the California Legislature adopted Assembly Bill (AB) 32 (Health and Safety Code Division 25.5), also known as the California Global Warming Solutions Act of 2006, with a focus on reducing GHG emissions in California to 1990 levels by 2020. This act defines GHGs as CO<sub>2</sub>, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The California Global Warming Solutions Act assigned CARB the primary responsibility for reducing GHG emissions, by adopting rules and regulations directing state actions to achieve the GHG emissions reductions equivalent to 1990 statewide level set at 431 MMTCO<sub>2e</sub> by 2020. In 2008, CARB adopted the Climate Change Scoping Plan, which outlines the State's strategy to achieve the 2020 GHG emissions limit. In 2014, CARB adopted the first update to the Climate Change Scoping Plan, which builds on the strategies from the first plan. In 2016, the State of California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels as emissions fell below 431 MMTCO<sub>2e</sub> (CARB 2023).

### ***Senate Bill 32 and Assembly Bill 197***

In 2016, the California Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197. SB 32 and AB 197 amended Health and Safety Code Division 25.5 and established a new climate pollution reduction target of 40 percent below 1990 levels by 2030, with provisions included to ensure that the benefits of state climate policies reach into vulnerable communities. In response to the 2030 GHG reduction target, CARB adopted the 2017 Scoping Plan (CARB 2017). The 2017 Scoping Plan outlines the strategies the state will implement to achieve the 2030 GHG emissions reduction target, which build on the Cap-and-Trade Program; the Low Carbon Fuel Standard; improved vehicle, truck, and freight

movement emissions standards; increasing renewable energy; and strategies to reduce methane emissions from agricultural and other wastes by using it to meet California’s energy needs. The 2017 Scoping Plan also comprehensively addresses GHG emissions from natural and working lands of California, including the agriculture and forestry sectors. The adopted 2017 Scoping Plan includes ongoing and statutorily required programs and the continuation of the Cap-and-Trade Program. The 2017 Scoping Plan also discusses the role of local governments in meeting the state’s GHG reductions goals because local governments have jurisdiction and land use authority related to community-scale planning and permitting processes, local codes and actions, outreach and education programs, and municipal operations (CARB 2017).

### ***Assembly Bill 1279 and 2022 Scoping Plan***

The Legislature enacted AB 1279, The California Climate Crisis Act, on September 16, 2022 (CLI 2022). AB 1279 establishes the policy of the State of California to achieve net zero GHG emissions as soon as possible but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. Additionally, AB 1279 mandates that by 2045, statewide anthropogenic GHG emissions are to be reduced at least 85 percent below 1990 levels. AB 1279 also requires CARB to ensure that the Scoping Plan identifies and recommends measures to achieve carbon neutrality, and to identify and implement policies and strategies for CO<sub>2</sub> removal solutions and carbon capture, utilization, and storage technologies. It also requires CARB to submit an annual report on progress in achieving the Scoping Plan’s goals.

In December 2022, CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan), which expands on prior scoping plans to include technologically feasible, cost-effective, and equity-focused pathways to achieve the state’s climate target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045, while also assessing the progress California is making toward the 40 percent below 1990 levels by 2030, and achieving carbon neutrality<sup>2</sup> by 2045 or earlier (CARB 2022a). The 2030 target is an interim but important stepping stone along the critical path to the broader goal of deep decarbonization by 2045. The 2022 Scoping Plan outlines the strategies the state will implement to achieve carbon neutrality by reducing GHG emissions to meet the anthropogenic target, and by expanding actions to capture and store carbon through the state’s natural and working lands and using a variety of mechanical approaches. A summary of the GHG emissions reductions and targets set forth under the 2022 Scoping Plan is provided in **Table 4.5-3, *Estimated Statewide Greenhouse Gas Emissions Reductions in the 2022 Scoping Plan.***

The 2022 Scoping Plan reflects existing and recent direction in the Governor’s Executive Orders and State Statutes, which identify policies, strategies, and regulations in support of and implementation of the Scoping Plan. Among these include Executive Order B-55-18 and AB 1279 (The California Climate Crisis Act), which identify the 2045 carbon neutrality and GHG reduction targets required for the Scoping Plan. **Table 4.5-4, *Major Climate Legislation and Executive Orders Enacted Since the 2017 Scoping***

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<sup>2</sup> *Carbon neutrality* means “net zero” emissions of GHGs. In other words, it means that GHG emissions generated by sources such as transportation, power plants, and industrial processes must be less than or equal to the amount of CO<sub>2</sub> that is stored, both in natural sinks and through mechanical sequestration. AB 1279 uses the terminology “net zero” and the 2022 Scoping Plan uses the terminology “carbon neutrality” or “carbon neutral.” For purposes of this PEIR, these terms mean the same thing and are used interchangeably.

*Plan*, provides a summary of major climate legislation and executive orders issued since the adoption of the 2017 Scoping Plan.

The 2022 Scoping Plan identifies the need to accelerate AB32’s 2030 target, from 40 percent to 48 percent below 1990 levels. Cap-and-Trade regulation continues to play a large factor in the reduction of near-term emissions for meeting the 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet these GHG reduction goals and achieve carbon neutrality no later than 2045. The 2022 Scoping Plan approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology.

**TABLE 4.5-3  
 ESTIMATED STATEWIDE GREENHOUSE GAS EMISSIONS REDUCTIONS IN THE 2022 SCOPING PLAN**

<b>Emissions Scenario</b>	<b>GHG Emissions (MMTCO<sub>2e</sub>)</b>
<b>2019</b>	
2019 State GHG Emissions	404
<b>2030</b>	
2030 BAU Forecast	312
2030 GHG Emissions without Carbon Removal and Capture	233
2030 GHG Emissions with Carbon Removal and Capture	226
2030 Emissions Target Set by AB 32 (i.e., 1990 level by 2030)	260
Reduction below Business-As-Usual necessary to achieve 1990 levels by 2030	52 (16.7%) <sup>a</sup>
<b>2045</b>	
2045 BAU Forecast	266
2045 GHG Emissions without Carbon Removal and Capture	72
2045 GHG Emissions with Carbon Removal and Capture	(3)
MMTCO <sub>2e</sub> = million metric tons of carbon dioxide equivalents; parenthetical numbers represent negative values.	
<sup>a</sup> 312 – 260 = 52 / 312 = 16.7%	
SOURCE: CARB, 2022.	

**TABLE 4.5-4  
 MAJOR CLIMATE LEGISLATION AND EXECUTIVE ORDERS ENACTED SINCE THE 2017 SCOPING PLAN**

Bill/Executive Order	Summary
<p><b>Assembly Bill 1279 (AB 1279)</b>  <b>(Muratsuchi, Chapter 337, Statutes of 2022)</b>  <i>The California Climate Crisis Act</i></p>	<p>AB 1279 establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires CARB to ensure that Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO<sub>2</sub> removal solutions and carbon capture, utilization, and storage (CCUS) technologies. This bill is reflected directly in 2022 Scoping Plan.</p>
<p><b>Senate Bill 905 (SB 905)</b>  <b>(Caballero, Chapter 359, Statutes of 2022)</b>  <i>Carbon Capture, Removal, Utilization, and Storage Program</i></p>	<p>SB 905 requires CARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate CCUS and carbon dioxide removal (CDR) projects and technology.</p> <p>The bill requires CARB, on or before January 1, 2025, to adopt regulations creating a unified state permitting application for approval of CCUS and CDR projects. The bill also requires the Secretary of the Natural Resources Agency to publish a framework for governing agreements for two or more tracts of land overlying the same geologic storage reservoir for the purposes of a carbon sequestration project.</p> <p>The 2022 Scoping Plan modeling reflects both CCUS and CDR contributions to achieve carbon neutrality.</p>
<p><b>Senate Bill 846 (SB 846) (Dodd, Chapter 239, Statutes of 2022)</b>  <i>Diablo Canyon Powerplant: Extension of Operations</i></p>	<p>SB 846 extends the Diablo Canyon Power Plant’s sunset date by up to five additional years for each of its two units and seeks to make the nuclear power plant eligible for federal loans. The bill requires that the CPUC not include and disallow a load-serving entity from including in their adopted resource plan, the energy, capacity, or any attribute from the Diablo Canyon power plant.</p> <p>The 2022 Scoping Plan explains the emissions impact of this legislation.</p>
<p><b>Senate Bill (SB 1020) (Laird, Chapter 361, Statutes of 2022)</b>  <i>Clean Energy, Jobs, and Affordability Act of 2022</i></p>	<p>SB 1020 adds interim renewable energy and zero carbon energy retail sales of electricity targets to California end-use customers set at 90 percent in 2035 and 95 percent in 2040. It accelerates the timeline required to have 100 percent renewable energy and zero carbon energy procured to serve state agencies from the original target year of 2045 to 2035. This bill requires each state agency to individually achieve the 100 percent goal by 2035 with specified requirements. This bill requires the CPUC, CEC, and CARB, on or before December 1, 2023, and annually thereafter, to issue a joint reliability progress report that reviews system and local reliability.</p> <p>The bill also modifies the requirement for CARB to hold a portion of its Scoping Plan workshops in regions of the state with the most significant exposure to air pollutants by further specifying that this includes communities with minority populations or low-income communities in areas designated as being in extreme federal non-attainment.</p> <p>The 2022 Scoping Plan describes the implications of this legislation on emissions.</p>
<p><b>Senate Bill 1137 (SB 1137)</b>  <b>(Gonzales, Chapter 365, Statutes of 2022)</b>  <i>Oil &amp; Gas Operations: Location Restrictions: Notice of Intention: Health protection zone: Sensitive receptors</i></p>	<p>SB 1137 prohibits the development of new oil and gas wells or infrastructure in health protection zones, as defined, except for purposes of public health and safety or other limited exceptions. The bill requires operators of existing oil and gas wells or infrastructure within health protection zones to undertake specified monitoring, public notice, and nuisance requirements. The bill requires CARB to consult and concur with the California Geologic Energy Management Division (CalGEM) on leak detection and repair plans for these facilities, adopt regulations as necessary to implement emission detection system standards, and collaborate with CalGEM on public access to emissions detection data.</p>

Bill/Executive Order	Summary
<p><b>Senate Bill 1075 (SB 1075)</b>  <b>(Skinner, Chapter 363, Statutes of 2022)</b>  <i>Hydrogen: Green Hydrogen: Emissions of Greenhouse Gases</i></p>	<p>SB 1075 requires CARB, by June 1, 2024, to prepare an evaluation that includes: policy recommendations regarding the use of hydrogen, and specifically the use of green hydrogen, in California; a description of strategies supporting hydrogen infrastructure, including identifying policies that promote the reduction of GHGs and short-lived climate pollutants; a description of other forms of hydrogen to achieve emission reductions; an analysis of curtailed electricity; an estimate of GHG and emission reductions that could be achieved through deployment of green hydrogen through a variety of scenarios; an analysis of the potential for opportunities to integrate hydrogen production and applications with drinking water supply treatment needs; policy recommendations for regulatory and permitting processes associated with transmitting and distributing hydrogen from production sites to end uses; an analysis of the life-cycle GHG emissions from various forms of hydrogen production; and an analysis of air pollution and other environmental impacts from hydrogen distribution and end uses.</p> <p>This bill would inform the production of hydrogen at the scale called for in the 2022 Scoping Plan.</p>
<p><b>Assembly Bill 1757 (AB 1757)</b>  <b>(Garcia, Chapter 341, Statutes of 2022)</b>  <i>California Global Warming Solutions Act of 2006: Climate Goal: Natural and Working Lands</i></p>	<p>AB 1757 requires the California Natural Resources Agency (CNRA), in collaboration with CARB, other state agencies, and an expert advisory committee, to determine a range of targets for natural carbon sequestration, and for nature-based climate solutions, that reduce GHG emissions in 2030, 2038, and 2045 by January 1, 2024. These targets must support state goals to achieve carbon neutrality and foster climate adaptation and resilience.</p> <p>This bill also requires CARB to develop standard methods for state agencies to consistently track GHG emissions and reductions, carbon sequestration, and additional benefits from natural and working lands over time. These methods will account for GHG emissions reductions of CO<sub>2</sub>, methane, and nitrous oxide related to natural and working lands and the potential impacts of climate change on the ability to reduce GHG emissions and sequester carbon from natural and working lands, where feasible.</p> <p>This 2022 Scoping Plan describes the next steps and implications of this legislation for the natural and working lands sector.</p>
<p><b>Senate Bill 1206 (SB 1206)</b>  <b>(Skinner, Chapter 884, Statutes of 2022)</b>  <i>Hydrofluorocarbon gases: sale or distribution</i></p>	<p>SB 1206 mandates a stepped sales prohibition on newly produced high- global warming potential (GWP) hydrofluorocarbons (HFCs) to transition California’s economy toward recycled and reclaimed HFCs for servicing existing HFC-based equipment. Additionally, SB 1206 also requires CARB to develop regulations to increase the adoption of very low-, i.e., GWP &lt; 10, and no-GWP technologies in sectors that currently rely on higher-GWP HFCs.</p>
<p><b>Senate Bill 27 (SB 27) (Skinner, Chapter 237, Statutes of 2021)</b>  <i>Carbon Sequestration: State Goals: Natural and Working Lands: Registry of Projects</i></p>	<p>SB 27 requires CNRA, in coordination with other state agencies, to establish the Natural and Working Lands Climate Smart Strategy by July 1, 2023. This bill also requires CARB to establish specified CO<sub>2</sub> removal targets for 2030 and beyond as part of its Scoping Plan. Under SB 27, CNRA is to establish and maintain a registry to identify projects in the state that drive climate action on natural and working lands and are seeking funding.</p> <p>CNRA also must track carbon removal and GHG emission reduction benefits derived from projects funded through the registry.</p> <p>This bill is reflected directly in 2022 Scoping Plan as CO<sub>2</sub> removal targets for 2030 and 2045 in support of carbon neutrality.</p>

Bill/Executive Order	Summary
<p><b>Senate Bill 596 (SB 596) (Becker, Chapter 246, Statutes of 2021)</b>  <i>Greenhouse Gases: Cement Sector: Net-Zero Emissions Strategy</i></p>	<p>SB 596 requires CARB, by July 1, 2023, to develop a comprehensive strategy for the state’s cement sector to achieve net-zero emissions of GHGs associated with cement used within the state as soon as possible, but no later than December 31, 2045. The bill establishes an interim target of 40 percent below the 2019 average GHG intensity of cement by December 31, 2035. Under SB 596, CARB must:</p> <p>Define a metric for GHG intensity and establish a baseline from which to measure GHG intensity reductions.</p> <ul style="list-style-type: none"> <li>• Evaluate the feasibility of the 2035 interim target (40 percent reduction in GHG intensity) by July 1, 2028.</li> <li>• Coordinate and consult with other state agencies.</li> <li>• Prioritize actions that leverage state and federal incentives.</li> <li>• Evaluate measures to support market demand and financial incentives to encourage the production and use of cement with low GHG intensity.</li> </ul> <p>The 2022 Scoping Plan modeling is designed to achieve these outcomes.</p>
<p><b>Executive Order N-82-20</b></p>	<p>Executive Order N-82-20 (October 2020) combat the climate and biodiversity crises by setting a statewide goal to conserve at least 30 percent of California’s land and coastal waters by 2030. The Executive Order also instructed the CNRA, in consultation with other state agencies, to develop a Natural and Working Lands Climate Smart Strategy that serves as a framework to advance the state’s carbon neutrality goal and build climate resilience. In addition to setting a statewide conservation goal, the Executive Order directed CARB to update the target for natural and working lands in support of carbon neutrality as part of this Scoping Plan, and to take into consideration the NWL Climate Smart Strategy.</p> <p>CO<sub>2</sub> Executive Order N-82-20 also calls on the CNRA, in consultation with other state agencies, to establish the California Biodiversity Collaborative (Collaborative). The Collaborative shall be made up of governmental partners, California Native American tribes, experts, business and community leaders, and other stakeholders from across the state. State agencies will consult the Collaborative on efforts to:</p> <ul style="list-style-type: none"> <li>• Establish a baseline assessment of California’s biodiversity that builds upon existing data and can be updated over time.</li> <li>• Analyze and project the impact of climate change and other stressors in California’s biodiversity.</li> <li>• Inventory current biodiversity efforts across all sectors and highlight opportunities for additional action to preserve and enhance biodiversity.</li> </ul> <p>CNRA also is tasked with advancing efforts to conserve biodiversity through various actions, such as streamlining the state’s process to approve and facilitate projects related to environmental restoration and land management. The California Department of Food and Agriculture (CDFA) is directed to advance efforts to conserve biodiversity through measures such as reinvigorating populations of pollinator insects, which restore biodiversity and improve agricultural production.</p> <p>The Natural and Working Lands Climate Smart Strategy informs 2022 Scoping Plan.</p>
<p><b>Executive Order N-79-20</b></p>	<p>Executive Order N-79-20 (September 2020) establishes targets for the transportation sector to support the state in its goal to achieve carbon neutrality by 2045. The targets established in this Executive Order are:</p> <ul style="list-style-type: none"> <li>• 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035.</li> <li>• 100 percent of medium- and heavy-duty vehicles will be zero-emission by 2045 for all operations where feasible, and by 2035 for drayage trucks.</li> <li>• 100 percent of off-road vehicles and equipment will be zero-emission by 2035 where feasible.</li> </ul> <p>The Executive Order also tasked CARB to develop and propose regulations that require increasing volumes of zero- electric passenger vehicles, medium- and heavy-duty vehicles,</p>



Bill/Executive Order	Summary
	<p>drayage trucks, and off-road vehicles toward their corresponding targets of 100 percent zero-emission by 2035 or 2045, as listed above.</p> <p>The 2022 Scoping Plan modeling reflects achieving these targets.</p>
<p><b>Executive Order N-19-19</b></p>	<p>Executive Order N-19-19 (September 2019) directs state government to redouble its efforts to reduce GHG emissions and mitigate the impacts of climate change while building a sustainable, inclusive economy. This Executive Order instructs the Department of Finance to create a Climate Investment Framework that:</p> <ul style="list-style-type: none"> <li>• Includes a proactive strategy for the state’s pension funds that reflects the increased risks to the economy and physical environment due to climate change.</li> <li>• Provides a timeline and criteria to shift investments to companies and industry sectors with greater growth potential based on their focus of reducing carbon emissions and adapting to the impacts of climate change.</li> <li>• Aligns with the fiduciary responsibilities of the California Public Employees’ Retirement System, California State Teachers’ Retirement System, and the University of California Retirement Program.</li> </ul> <p>Executive Order N-19-19 directs the State Transportation Agency to leverage more than \$5 billion in annual state transportation spending to help reverse the trend of increased fuel consumption and reduce GHG emissions associated with the transportation sector. It also calls on the Department of General Services to leverage its management and ownership of the state’s 19 million square feet in managed buildings, 51,000 vehicles, and other physical assets and goods to minimize state government’s carbon footprint. Finally, it tasks CARB with accelerating progress toward California’s goal of five million ZEV sales by 2030 by:</p> <ul style="list-style-type: none"> <li>• Developing new criteria for clean vehicle incentive programs to encourage manufacturers to produce clean, affordable cars.</li> <li>• Proposing new strategies to increase demand in the primary and secondary markets for ZEVs.</li> <li>• Considering strengthening existing regulations or adopting new ones to achieve the necessary GHG reductions from within the transportation sector.</li> </ul> <p>The 2022 Scoping Plan modeling reflects efforts to accelerate ZEV deployment.</p>
<p><b>Senate Bill 576 (SB 576) (Umbert, Chapter 374, Statutes of 2019)</b> <i>Coastal Resources: Climate Ready Program and Coastal Climate Change Adaptation, Infrastructure and Readiness Program</i></p>	<p>Sea level rise, combined with storm-driven waves, poses a direct risk to the state’s coastal resources, including public and private real property and infrastructure. Rising marine waters threaten sensitive coastal areas, habitats, the survival of threatened and endangered species, beaches, other recreation areas, and urban waterfronts. SB 576 mandates that the Ocean Protection Council develop and implement a coastal climate adaptation, infrastructure, and readiness program to improve the climate change resiliency of California’s coastal communities, infrastructure, and habitat. This bill also instructs the State Coastal Conservancy to administer the Climate Ready Program, which addresses the impacts and potential impacts of climate change on resources within the conservancy’s jurisdiction.</p>
<p><b>Assembly Bill 65 (AB 65) (Petrie-Norris, Chapter 347, Statutes of 2019)</b> <i>Coastal Protection: Climate Adaption: Project Prioritization: Natural Infrastructure: Local General Plans</i></p>	<p>This bill requires the State Coastal Conservancy, when it allocates any funding appropriated pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018, to prioritize projects that use natural infrastructure in coastal communities to help adapt to climate change. The bill requires the conservancy to provide information to the Office of Planning and Research on any projects funded pursuant to the above provision to be considered for inclusion into the clearinghouse for climate adaption information. The bill authorizes the conservancy to provide technical assistance to coastal communities to better assist them with their projects that use natural infrastructure.</p>
<p><b>Executive Order B-55-18</b></p>	<p>Governor Brown signed Executive Order B-55-18 in September 2018 to establish a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter. Policies and programs undertaken to achieve this goal shall:</p>

Bill/Executive Order	Summary
	<ul style="list-style-type: none"> <li>• Seek to improve air quality and support the health and economic resiliency of urban and rural communities, particularly low-income and disadvantaged communities.</li> <li>• Be implemented in a manner that supports climate adaptation and biodiversity, including protection of the state’s water supply, water quality, and native plants and animals.</li> </ul> <p>This Executive Order also calls for CARB to:</p> <ul style="list-style-type: none"> <li>• Develop a framework for implementation and accounting that tracks progress toward this goal.</li> <li>• Ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.</li> </ul> <p>The 2022 Scoping Plan is designed to achieve carbon neutrality no later than 2045 and the modeling includes technology and fuel transitions to achieve that outcome.</p>
<p><b>Senate Bill 100 (SB 100) (De León, Chapter 312, Statutes of 2018)</b>  <i>California Renewables Portfolio Standard Program: emissions of greenhouse gases</i></p>	<p>Under SB 100, the CPUC, CEC, and CARB shall use programs under existing laws to achieve 100 percent clean electricity. The statute requires these agencies to issue a joint policy report on SB 100 every four years. The first of these reports was issued in 2021.</p> <p>The 2022 Scoping Plan reflects the SB 100 Core Scenario resource mix with a few minor updates.</p>
<p><b>Assembly Bill 2127 (AB 2127) (Ting, Chapter 365, Statutes of 2018)</b>  <i>Electric Vehicle Charging Infrastructure: Assessment</i></p>	<p>This bill requires the CEC, working with CARB and the CPUC, to prepare and biennially update a statewide assessment of the electric vehicle charging infrastructure needed to support the levels of electric vehicle adoption required for the state to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030 and of reducing emissions of GHGs to 40 percent below 1990 levels by 2030. The bill requires the CEC to regularly seek data and input from stakeholders relating to electric vehicle charging infrastructure.</p> <p>This bill supports the deployment of ZEVs as modeled in 2022 Scoping Plan.</p>
<p><b>Senate Bill 30 (SB 30) (Lara, Chapter 614, Statutes of 2018)</b>  <i>Insurance: Climate Change</i></p>	<p>This bill requires the Insurance Commissioner to convene a working group to identify, assess, and recommend risk transfer market mechanisms that, among other things, promote investment in natural infrastructure to reduce the risks of climate change related to catastrophic events, create incentives for investment in natural infrastructure to reduce risks to communities, and provide mitigation incentives for private investment in natural lands to lessen exposure and reduce climate risks to public safety, property, utilities, and infrastructure. The bill requires the policies recommended to address specified questions.</p>
<p><b>Assembly Bill 2061 (AB 2061) (Frazier, Chapter 580, Statutes of 2018)</b>  <i>Near-Zero-Emission and Zero-Emission Vehicles</i></p>	<p>Existing state and federal law sets specified limits on the total gross weight imposed on the highway by a vehicle with any group of two or more consecutive axles. Under existing federal law, the maximum gross vehicle weight of that vehicle may not exceed 82,000 pounds. AB 2061 authorizes a near-zero- emission vehicle or a zero-emission vehicle to exceed the weight limits on the power unit by up to 2,000 pounds. This bill supports the deployment of cleaner trucks as modeled in this 2022 Scoping Plan.</p>

SOURCE: CARB, 2022.

The 2022 Scoping Plan strategies are broadly summarized in Table 2-1 starting on page 72 of the Scoping Plan (CARB 2022a). It includes references to relevant statutes and Executive Orders, although it is not comprehensive of all existing new authorities for directing or supporting the actions described. Table 2-1 identifies actions related to a variety of sectors such as: smart growth and reductions in Vehicle Miles Traveled (VMT); light-duty vehicles (LDV) and zero-emission vehicles (ZEV); truck ZEVs; reduce fossil energy, emissions, and GHGs for aviation, ocean-going vessels, port operations, freight and passenger rail, oil and gas extraction; and petroleum refining; improvements in electricity generation; electrical appliances in new and existing residential and commercial buildings; electrification and emission

reductions across industries such as the for food products, construction equipment, chemicals and allied products, pulp and paper, stone/clay/glass/cement, other industrial manufacturing, and agriculture; retiring of combined heat and power facilities; low carbon fuels for transportation, business, and industry; improvements in non-combustion methane emissions, and introduction of low GWP refrigerants.

Achieving the targets described in the 2022 Scoping Plan requires continued commitment to and successful implementation of existing policies and programs, and identification of new policy tools and technical solutions to go further, faster. California’s Legislature and state agencies will continue to collaborate to achieve the state’s climate, clean air, equity, and broader economic and environmental protection goals. It will be necessary to maintain and strengthen this collaborative effort, and to draw upon the assistance of the federal government, regional and local governments, tribes, communities, academic institutions, and the private sector to achieve the state’s near-term and longer-term emission reduction goals and a more equitable future for all Californians. The Scoping Plan acknowledges that the path forward is not dependent on one agency, one state, or even one country. However, the State can lead by engaging Californians and demonstrating how actions at the state, regional, and local levels of governments, as well as action at community and individual levels, can contribute to addressing the challenge.

Appendix D, Local Actions, of the 2022 Scoping Plan includes “recommendations intended to build momentum for local government actions that align with the State’s climate goals, with a focus on local GHG reduction strategies (commonly referred to as climate action planning) and approval of new land use development projects, including through environmental review under the California Environmental Quality Act (CEQA).” Appendix D is intended to provide clarification on challenges local jurisdictions face when implementing GHG reduction strategies or approving much-needed housing projects.<sup>3</sup> Aligning local jurisdiction action with state-level priorities to tackle climate change and the outcomes called for in the 2022 Scoping Plan is critical to achieving the statutory targets for 2030 and 2045. The 2022 Scoping Plan discusses the role of local governments in meeting the State’s GHG reductions goals. Local governments have the primary authority to plan, zone, approve, and permit how and where land is developed to accommodate population growth, economic growth, and the changing needs of their jurisdictions. They also make critical decisions on how and when to deploy transportation infrastructure, and can choose to support transit, walking, bicycling, and neighborhoods that do not force people into cars. Local governments also have the option to adopt building ordinances that exceed statewide building code requirements and play a critical role in facilitating the rollout of ZEV infrastructure. As a result, local government decisions play a critical role in supporting state-level measures to contain the growth of GHG emissions associated with the transportation system and the built environment—the two largest GHG emissions sectors over which local governments have authority. The County has taken the initiative in combating climate change by addressing it in the County of Santa Barbara General Plan and 2030 Climate Action Plan, which is discussed below under the *Local* subheading

### **Cap-and-Trade Program**

The Climate Change Scoping Plan identifies a Cap-and-Trade Program as one of the strategies California would employ to reduce GHG emissions. CARB asserts that this program will help put California on the

<sup>3</sup> CARB, 2022. Final 2022 Climate Change Scoping Plan – Appendix D: Local Actions, November. <https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp-appendix-d-local-actions.pdf>. Accessed January 2024.

path to meet its goal of ultimately achieving an 80 percent reduction from 1990 levels by 2050. Pursuant to its authority under AB 32, CARB designed and adopted the California Cap-and-Trade Program to reduce GHG emissions from major sources (deemed “covered entities”) by setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve AB 32’s emissions reduction mandate of returning to 1990 levels of emissions by 2020 (17 CCR Sections 95800–96023).

The Cap-and-Trade Program establishes an overall limit for GHG emissions from capped sectors (e.g., electricity generation, petroleum refining, cement production, and large industrial facilities that emit more than 25,000 MTCO<sub>2e</sub> per year) and declines over time, and facilities subject to the cap may trade permits to emit GHGs. The statewide cap for GHG emissions from the capped sectors commenced in 2013 and declines over time, achieving GHG emissions reductions throughout the program’s duration (17 CCR Sections 95811 and 9512). On July 17, 2017, the California Legislature enacted AB 398, extending the Cap-and-Trade Program through 2030.

The Cap-and-Trade Regulation provides a firm cap, ensuring that the statewide emission limits will not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are only guaranteed on an accumulative basis. In other words, because climate change is a global occurrence and the impacts of GHG emissions are considered cumulative, a focus on aggregate GHG emissions reductions, rather than source-specific reductions, is warranted.

### **Mobile Sources**

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

In 2004, CARB adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants (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 generally does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a necessary function such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

#### **Low Carbon Fuel Standard**

In 2007, Executive Order S-01-07 mandated the following: establish a statewide goal to reduce the carbon intensity of California’s transportation fuels by at least 10 percent by 2020; and adopt a low-carbon fuel standard (LCFS) for transportation fuels in California. CARB identified the LCFS as one of the nine discrete early actions in the 2008 Climate Change Scoping Plan. In September 2018, the standards were amended by CARB to require a 20 percent reduction in carbon intensity by 2030, aligning with California’s 2030 targets set by SB 32 (CARB 2018).

#### **In-Use Off-Road Diesel-Fueled Fleets Regulation**

In 2007, CARB promulgated emission 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 regulation aims to reduce emissions by installation of diesel soot

filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models.

CARB approved amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation in November of 2022 (CARB 2022b). The amendment will require fleets to phase-out use of the oldest and highest polluting off-road diesel vehicles, prohibit the addition of high-emitting vehicles to a fleet, and require the use of R99 or R100 renewable diesel in off-road diesel vehicles. The amendments phase-in starting in 2024 through the end of 2046 and include changes to enhance enforceability and encourage the adoption of zero-emission technologies. These amendments aim to further reduce emissions from the off-road sector.

### **Truck and Bus Regulation**

In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). CARB has also promulgated emission 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 regulation aims to reduce emissions by installation of diesel soot filters, and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. While these regulations primarily target reductions in criteria air pollutant emission, they have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

### **Advanced Clean Car Program**

In 2012, CARB adopted the Advanced Clean Cars (ACC) emissions-control program, which is closely associated with the emissions standards for passenger vehicles and light-duty trucks discussed above (CARB 2024b). The program requires an increase in the number of zero-emissions vehicle models for years 2015 through 2025 to control smog, soot and GHG emissions. By 2025, ZEVs must be 22 percent of large volume manufacturers overall production (CARB 2024c). This program includes the Low-Emissions Vehicle (LEV) regulations to reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles; and ZEV regulations to require manufacturers to produce an increasing number of pure ZEVs (meaning battery and fuel cell electric vehicles) with the provision to produce plug-in hybrid electric vehicles (PHEV) between 2018 and 2025.

Executive Order No. N-79-20 (September 2020) phases out the sales of new gasoline-fueled passenger cars by 2035 in California with an additional 10-year transition period for heavy vehicles. The State would not restrict used car sales, nor forbid residents from owning gas-powered vehicles. In accordance with the Executive Order, CARB is developing a 2020 Mobile Source Strategy, a comprehensive analysis that presents scenarios for possible strategies to reduce the carbon, toxic and unhealthy pollution from cars, trucks, equipment, and ships. The strategies will provide important information for numerous regulations and incentive programs going forward by conveying what is necessary to address the aggressive emission reduction requirements.

The primary mechanism for achieving the ZEV target for passenger cars and light trucks is CARB's Advanced Clean Cars II (ACC II) Program (CARB 2024d). The ACC II regulations will rapidly scale down light-duty passenger car, pickup truck and SUV emissions starting with the 2026 model year through 2035. The ACC II regulation amends the Zero-emission Vehicle Regulation to require an

increasing number of zero-emission vehicles, and relies on currently available advanced vehicle technologies, including battery-electric, hydrogen fuel cell electric and plug-in hybrid electric-vehicles, to meet air quality and climate change emissions standards which supports Executive Order N-79-20 that requires all new passenger vehicles sold in California to be zero emissions by 2035. Additionally, the ACC II regulation amends the Low-emission Vehicle Regulations to include increasingly stringent standards for gasoline cars and heavier passenger trucks to continue to reduce smog-forming emissions.

### **Advanced Clean Trucks Program**

The Advanced Clean Trucks regulations were approved on June 25, 2020, and require that manufacturers sell zero-emissions or near-zero-emissions trucks as an increasing percentage of their annual California sales beginning in 2024. The goal of this proposed strategy is to achieve nitrogen oxide (NO<sub>x</sub>) and GHG emission reductions through advanced clean technology, and to increase the penetration of the first wave of zero-emissions heavy-duty technology into applications that are well suited to its use. According to CARB, “Promoting the development and use of advanced clean trucks will help CARB achieve its emission reduction strategies as outlined in the SIP, Sustainable Freight Action Plan, SB 350, and AB 32” (CARB 2024e). The percentage of zero-emissions truck sales is required to increase every year until 2035 when sales would need to be 55 percent of Classes 2b–3 (light/medium- and medium-duty trucks) truck sales, 75 percent of Classes 4–8 (medium- to heavy-duty trucks) straight truck sales, and 40 percent of truck tractor (heavy-duty trucks weighing 33,001 pounds or greater) sales. Additionally, large fleet operators (of 50 or more trucks) would be required to report information about shipments and services and their existing fleet operations.

### **Land Use and Transportation Planning**

In 2008, SB 375 (Chapter 728, Statutes of 2008) established 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 (MPOs), to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035 (CARB 2024f). The proposed reduction targets explicitly exclude emission reductions expected from the AB 1493 and the LCFS regulations.

Under SB 375, the regional GHG reduction target must be incorporated within the applicable MPO’s Regional Transportation Plan (RTP), which is used for long-term transportation planning, in a Sustainable Communities Strategy (SCS). In 2011, CARB adopted GHG emissions reduction targets for the Santa Barbara County Association of Governments (SBCAG), the MPO for the region. In 2018, CARB updated the SB 375 targets to require a 13 percent reduction by 2020 and a 17 percent reduction by 2035 in per capita passenger vehicle GHG emissions (CARB 2024g).

### **Energy Sector**

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The 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 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.

The current California Building Energy Efficiency Standards (Title 24 standards) are the 2022 Title 24 standards, which became effective January 1, 2023. The 2022 Title 24 standards encourage efficient electric heat pumps, establish electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 standards (CEC 2022).

The California Green Building Standards Code (CCR, Title 24, Part 11), commonly referred to as the CALGreen Code, with the most current version being the 2022 version which became effective January 1, 2023. The purpose of the CALGreen Building Code is to “improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality” (CBSC 2010). The CALGreen Building Code is not intended to substitute for or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission. The CALGreen Building Code establishes mandatory measures for new residential and non-residential buildings. The CALGreen Code includes mandatory measures for non-residential development related to site development, energy efficiency, water efficiency and conservation; material conservation and resource efficiency; and environmental quality. The 2022 CALGreen Code: revises standards for electric vehicle charging for new construction, primarily multi-family dwellings and hotels/motels, including increased requirements for EV parking spaces and EVSE Level 2 chargers, establishes heat pumps as a baseline technology, strengthens ventilation standards, establishes electric-ready requirements for new homes, and sets minimum solar photovoltaic and battery energy storage capacity for high-rise multifamily and commercial buildings, including office buildings, grocery stores, and schools, and more.

The 2012 Appliance Efficiency Regulations (CCR, Title 20, Sections 1601 through 1608) took effect February 13, 2013. The regulations include standards for both federally regulated appliances and non-federally regulated appliances.

The State has adopted regulations to increase the proportion of electricity from renewable sources. SB 350 (Chapter 547, Statutes of 2015) set the Renewables Portfolio Standard (RPS) to 50 percent by 2030, including interim targets of 40 percent by 2024 and 45 percent by 2027. In 2018, SB 100 further increased California’s RPS and requires retail sellers and local publicly-owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and requires that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

The California Public Utilities Commission (CPUC) and the CEC jointly implement the RPS program. The CPUC’s responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility’s renewable energy procurement

plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy.

## Regional

### ***Santa Barbara County Association of Governments***

SBCAG serves as the MPO for Santa Barbara County as is responsible for developing and maintaining a long-range transportation plan for the region. In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources. For the SBCAG region, Connected 2050 RTP/SCS, adopted in August 2021, is the current RTP/SCS. Connected 2050 RTP/SCS focuses on the continued efforts of the previous RTP/SCS plans for an integrated approach in transportation and land use strategies in development of the SBCAG region through horizon year 2050. Connected 2050 RTP/SCS projects that the SBCAG region will meet the GHG per capita reduction targets established for the SBCAG region of 17 percent by 2035.

### ***Santa Barbara County Air Pollution Control District***

As discussed in Section 4.1, *Air Quality*, of this PEIR, the Santa Barbara County Air Pollution Control District (SBCAPCD) is responsible for air quality planning in the South Central Coast Air Basin (where the Project is located) and developing rules and regulations to bring the Air Basin into attainment of the ambient air quality standards. The SBCAPCD has adopted Environmental Review Guidelines (2015) in which it has adopted a GHG thresholds. The Guidelines state that a stationary source proposed project would not have a significant adverse environmental impact if operation of the project would:

1. Emit less than the screening significance level of 10,000 MTCO<sub>2</sub>e per year, or
2. Show compliance with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions (sources subject to the AB 32 Cap-and-Trade requirements pursuant to Title 17, Article 5 (California Cap on Greenhouse Gas Emissions and Market-based Compliance Mechanisms) would meet the criteria), or
3. Show consistency with the AB 32 Scoping Plan GHG emission reduction goals by reducing project emissions 15.3% below Business As Usual (BAU).

Additionally, the SBCAPCD has promoted a number of programs to promote energy conservation, low-carbon fuel technologies (natural gas vehicles; electric-hybrids, hydraulic-hybrids, and battery-electric vehicles), renewable energy, VMT reduction programs, and market incentive programs which would reduce GHG emissions.

## Local

### ***Santa Barbara County Environmental Thresholds and Guidelines Manual***

The Santa Barbara County Environmental Thresholds and Guidelines Manual was revised and republished in August 2024. The purpose of this document is to assist with the use and application of environmental impact thresholds. The County has established the procedure for determining the significance of impacts from project-related GHG emissions. In general, a project may be evaluated with respect to the County's adopted industrial stationary source threshold, consistency with applicable GHG



strategies in the 2030 CAP, and/or the non-industrial stationary source thresholds. The non-industrial GHG thresholds, as well as the evaluation of consistency with applicable GHG strategies in the 2030 CAP may be applicable to the Project.

### ***County of Santa Barbara General Plan***

The County of Santa Barbara General Plan Energy Element (County of Santa Barbara 2015) was adopted in 1994 and republished June 2015 and amended in August 2024, and is applicable to the unincorporated communities of the Project, such as Cuyama/New Cuyama, Casmalia, Jonata Park, Refugio Canyon, the Highway 246 Corridor (five neighborhoods between Lompoc and Buellton), and the communities East of Santa Maria (Garey, Sisquoc, and Tepusquet Road communities). The Energy Element contains the following goals and policies that address GHGs that apply to the Broadband Program:

**Goal 3: Transportation and Land Use** – Provide a composition of land-uses and transportation programs that reduces dependency on automobiles.

**Policy 3.2: Teleconferencing Telecommuting/Electronic Communication.** The County should continue to research and support opportunities for telecommunication and computer-based communication that reduce the need for travel.

**Goal 4: Water Use and Solid Waste** – Increase the efficiency of water and resource use to reduce energy consumption associated with various phases of using resources (pumping, distribution, treatment, heating, etc.).

**Policy 4.1: Construction.** Encourage recycling and reuse of construction waste to reduce energy consumption associated with extracting and manufacturing virgin materials.

**Policy 4.3: Reuse of Asphalt.** Promote reuse of asphalt removed from roads and paved structures within the county and use of recycled materials in roadway and paved surface construction.

### ***County of Santa Barbara Energy and Climate Action Plan (ECAP)***

The County's current 2015 Energy & Climate Action Plan (County of Santa Barbara 2020) sunset in 2020. The goal of the ECAP was to reduce GHG emissions by 15 percent (below 2007 levels by 2020) through the implementation of 53 measures. Results of the ECAP were that 41 out of 53 measures were either initiated or completed by 2020, five measures were not started, and seven measures were discontinued (County of Santa Barbara 2020). An estimated 100,754 out of 226,760 (44 percent) metric tons of CO<sub>2</sub>e (MTCO<sub>2</sub>e) were reduced or avoided from ECAP implementation (County of Santa Barbara 2020). Additional measures from two other programs (Community Choice Energy and Tajiguas Landfill ReSource Center) achieved an estimated reduction of 156,768 MTCO<sub>2</sub>e (County of Santa Barbara 2020). The total of all reductions equated to the County of Santa Barbara meeting 69 percent of the ECAP's reduction target, which represents a three percent decrease from 2016, the County of Santa Barbara was still 11 percent over 2007 baseline levels (County of Santa Barbara 2020).

### ***County of Santa Barbara 2030 Climate Action Plan (CAP)***

The 2030 CAP (County of Santa Barbara 2023b) has set a goal to achieve a 50% reduction of communitywide greenhouse gas emissions from 2018 levels by 2030. The measures laid out in the 2030 CAP provide a foundation that aligns with the State of California's goals to reduce GHG emissions to

40% below 1990 levels and achieve carbon neutrality by 2045. The CAP's six focus areas are: 1) Housing and Transportation; 2) Clean Energy; 3) Waste, Water, and Wastewater; 4) Nature-Based Solutions; 5) Low-Carbon Economy; and 6) Municipal Operations (County of Santa Barbara 2023b). General measures that may apply to the Project include Transportation Measure TR-2, which would help implement programs and strategies to reduce countywide vehicle miles traveled. Specifically, the proposed Project is related to Action TR-2.12, Broadband Accessibility, which directs the County to work with SBCAG to increase internet access and speed to support telecommuting, remote workforce participation and wireless (i.e., wi-fi) enabled demand response programs, especially in rural areas of the County. Additionally, Action TR-2.10, Employer Trip Reduction Requirements & Programs, is aimed to help achieve a 50-80 percent telework participation rate for large employers within the unincorporated County. The Draft 2030 CAP was adopted by the County Board of Supervisors on August 27, 2024.

### ***Santa Barbara County Code***

Santa Barbara County Code Article VI adopts the California Energy Code, 2022 Edition as the Primary Energy Code of the County. The California Energy Code has specific requirements for building design to reduce energy consumption, including the use of certain building materials to ensure a greater degree of energy efficiency during building operation and construction and energy efficiency standards for appliances, lighting amenities, and water fixtures, among other project components.

### ***Los Alamos Community Plan***

The Los Alamos Community Plan, adopted February 15, 2011, includes an Air Quality Element which contains the following goals and policies related to GHG reduction applicable to the Project:

**Goal AQ-LA-1:** Maintain Healthful Air Quality in the Los Alamos Valley.

**Policy AQ-LA-1.2:** The County shall strive for consistency of all land use planning with the Clean Air Plan.

**Policy AQ-LA-1.3:** The County shall implement those land use patterns and transportation programs which will serve to reduce vehicle trips and total vehicle miles traveled. This includes-but is not limited to the following, as additional measures are encouraged.

- Include design features to encourage alternate transportation modes.
- Allow onsite services as by right to reduce the need for travel outside the Plan Area.

**Policy AQ-LA-1.4:** The County, when reviewing discretionary projects, shall require the use of techniques designed to conserve energy and minimize pollution.

**Dev Std AQ-LA.1.4.6:** Upon application for grading permits for discretionary projects, the applicant shall submit grading plans, the proposed rate of material movement and a construction equipment schedule to the APCD. In addition, the applicant shall implement the following measures where feasible to mitigate equipment emissions:

- All construction equipment and portable engines shall be properly maintained and tuned according to manufacturer's specifications;
- All off-road and portable diesel powered equipment, including but not limited to bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors,

auxiliary power units, shall be fueled exclusively with CARB-certified motor vehicle diesel fuel;

- The applicant shall, at a minimum, use diesel construction equipment meeting the California Air Resources Board's Tier 1 emission standards for off-road heavy-duty diesel engines. Equipment meeting Tier 2 or higher emission standards should be used to the maximum extent feasible.
- All on and off-road diesel equipment shall not be allowed to idle for more than 5 minutes. Signs shall be posted in the designated queuing areas to remind drivers and operators of the 5 minute idling limit;
- The applicant shall electrify equipment where feasible;
- The applicant shall substitute gasoline-powered for diesel powered equipment where feasible;
- The applicant shall use alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel, where feasible; and
- The applicant shall apply Best Available Control Technology (BACT) as determined by the APCD.
- Recycle/Reuse demolished construction material.

**Dev Std AQ-LA.1.4.9:** The County shall require, unless economically infeasible, all future projects to incorporate the following Green House Gas reduction measures to the maximum extent feasible:

- Recycle/Reuse demolished construction material. Use locally made building materials for construction of the project and associated infrastructure.

### ***Santa Ynez Community Plan***

The Santa Ynez Valley Community Plan, adopted October 6, 2009, covers Los Olivos, and contains a Land Use Element which has the following GHG reduction policies applicable to the Project:

**Policy LUG-SYV-8:** The public shall be protected from air emissions and odors that could jeopardize health and welfare.

**Action LUG-SYV-8.3:** Specific limits on idling time for commercial vehicles, including delivery and construction vehicles, shall be set for projects proposing new commercial development.

**Dev Std LUG-SYV-8.9:** The County shall require, unless economically infeasible, all future projects to incorporate the following Green House Gas reduction measures to the maximum extent feasible:

- Recycle/Reuse demolished construction material. Use locally made building materials for construction of the project and associated infrastructure.

### ***City of Guadalupe General Plan***

The City of Guadalupe 2042 General Plan (City of Guadalupe 2022), adopted November 22, 2022, includes the Conservation and Open Space, Air Quality and Safety, and Environmental Justice Elements which contains the following goals and policies that address GHGs:

## Conservation and Open Space

**Goal COS-3:** To reduce greenhouse gas production and energy use and increase production and use of renewable energy.

**Policy COS-1.14:** Until such time as the City adopts a qualified action plan consistent with mitigation measure GHG-1, individual development projects shall be constructed to use no natural gas and to meet California Green Building Standards Code Tier 2 requirements for electric vehicle charging infrastructure. Where such projects also generate less than 110 vehicle trips per day or produce less than 1,100 metric tons per year of carbon dioxide equivalent, no further action is required. Where such projects do not meet either the daily trip volume or mass emissions criteria, a VMT analysis must be conducted. If the VMT impact is less than significant, no further action is required. If the proposed project cannot meet one or more of the three required best management practices (no natural gas, electric vehicle support infrastructure, and less-than-significant VMT impact), the project applicant shall: 1) identify and implement other GHG reduction measures, with a priority on on-site measures; and/or 2) purchase and retire carbon offsets from a qualified registry that are real, permanent, quantifiable, verifiable, enforceable, and additional. The emission reductions and/or offsets must be equivalent to reductions that would otherwise be realized from the best management practice(s) that cannot be implemented.

## Air Quality and Safety

**Goal S-1:** To achieve and maintain clean, healthy air for the residents of Guadalupe and to reduce greenhouse gases consistent with state efforts to address climate change.

**Policy S-1.4:** The City will support continuing regional efforts to mitigate the effects of climate change through the multi-jurisdictional hazard mitigation planning process administered by the County of Santa Barbara.

**Goal S-2:** To make Guadalupe a resilient community with minimized damage from climate-change-induced hazards.

## Environmental Justice

**Policy EJ-1.1:** The City will prepare a climate action plan to identify ways to reduce citywide greenhouse gas emissions and minimize the impacts of climate change on Guadalupe residents. The climate action plan will incorporate the goals of reducing emissions within the city to 40 percent below 1990 levels by 2030 and achieve carbon neutrality by 2045.

## 4.5.3 Analysis, Impacts and Mitigation

### Methodology

#### **Construction**

The proposed Project would generate GHG from construction equipment and construction worker vehicles and heavy-duty trucks during construction of the Project. Construction emissions are forecasted by assuming a conservative estimate of construction activities from each phase of the Project. Construction emissions are estimated using CalEEMod software (Version 2022.1). Consistent with calculations in Section 4.1, *Air Quality*, construction emissions were forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest

feasible date) and applying the mobile source emissions factors. As discussed in Chapter 2, *Project Description*, a total of nine communities in the County have already been identified as “Priority Areas” under the Broadband Program. However, funding has not been secured for all Priority Areas and it is unknown if all locations will be funded. Nonetheless, for the purposes of this EIR and to provide for a conservative and environmentally protective analysis, GHG emission impacts for all of the nine Priority Areas are analyzed. The input values used in this analysis were adjusted to be Project-specific based on equipment types and the construction schedule. These values were then applied to the same construction phasing assumptions used in the criteria pollutant analysis in Section 4.1, *Air Quality*, to generate GHG emissions values for the proposed Project. In addition, construction-related GHG emissions would occur from energy consumption from electricity used for the construction office (lights, electronic equipment, and heating and cooling) and water conveyance for dust control.

As per County of Santa Barbara guidelines, see Significance Thresholds below, construction GHG emissions should be amortized over a 30-year project lifetime, so that construction emissions are included as part of the operational GHG life cycle. In accordance with the County’s guidelines, GHG emissions from construction have been amortized over the 30-year lifetime of the project and are discussed as a part of the qualitative operational discussion in order to the determination of significance.

### **Operations**

Once constructed, the broadband network components would generally operate passively, with only occasional maintenance typically consisting of weed abatement and periodic accessing of hand holes and splice cases from the ground surface along a given alignment. Operational activities would generate minimal GHG emissions associated with the limited maintenance checks. It was assumed that the ongoing operation of the various broadband installations would induce no more than a few vehicles per month, which would not result in a substantial source of GHG emissions. The Project would not induce any new electrical demand or generate solid waste or wastewater beyond existing conditions.

### **Consistency with GHG Reduction Plans**

Per CEQA Guidelines Section 15064(h)(3), a project’s incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the project (14 CCR § 15064(h)(3)). To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency (14 CCR § 15064(h)(3)). Examples of such programs include a “water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, [and] plans or regulations for the reduction of greenhouse gas emissions” (14 CCR § 15064(h)(3)). Thus, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of non-significance for GHG emissions if a project complies with a program and/or other regulatory schemes to reduce GHG emissions.

## Significance Thresholds

This analysis follows the guidance and methodologies recommended in the CEQA Appendix G thresholds, SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents* (2022b), and the County of Santa Barbara *Environmental Thresholds and Guidelines Manual* (2024). While there is some overlap in the thresholds from these three sources, each has been individually listed below because thresholds from these sources may be applicable to individual projects under the Broadband Program.

### **CEQA Appendix G Significance Thresholds**

Pursuant to Appendix G of the State CEQA Guidelines, GHG impacts related to the proposed project would be significant if the project would:

- a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355).

### **SBCAPCD Significance Thresholds**

According to the SBCAPCD *Scope and Content of Air Quality Sections in Environmental Documents* (2022), a proposed stationary source<sup>4</sup> project would have a significant climate change and greenhouse gases impact on the environment if operation of the project would:

- Emit more than the screening significance level of 10,000 MTCO<sub>2</sub>e per year, or
- Does not show compliance with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions (sources subject to the AB 32 Cap-and-Trade requirements pursuant to Title 17, Article 5 (California Cap on Greenhouse Gas Emissions and Market-based Compliance Mechanisms) would meet the criteria), or
- Does not show consistency with the AB 32 Scoping Plan GHG emission reduction goals by reducing project emissions 15.3% below Business As Usual (BAU).

If annual emissions of GHGs exceed these threshold levels, the proposed project would result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant adverse environmental impact.

The SBCAPCD does not currently have quantitative thresholds of significance in place for short-term or construction GHG emissions.

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<sup>4</sup> A stationary source is any building, structure, facility, or installation which emits or may emit an air pollutant directly or as fugitive emissions.

### **County of Santa Barbara Significance Thresholds**

Consistent with CEQA Guidelines Section 15064.7, Thresholds of Significance, the County of Santa Barbara developed and adopted thresholds of significance for determining the significance of a project's GHG emissions. According to the County's Environmental Thresholds and Guidelines Manual (2024), the County has developed thresholds for project-related GHG emissions, and a significant adverse GHG impact may occur when a project, individually or cumulatively, exceeds the significance thresholds.

Any project that does not demonstrate consistency with the 2030 CAP (i.e., the project or plan is not complying with the 2030 CAP measures) cannot be tiered off of the 2030 CAP PEIR, and must be reviewed subject to the quantitative thresholds. The quantitative threshold for non-industrial projects applies to both direct and indirect emissions of GHGs. Direct emissions encompass the project's complete operations, including GHGs emitted from all on-site (e.g., natural gas combustion in appliances) and mobile sources, involved in the operation, including off-road equipment, as well as the removal of trees and other vegetation. Indirect emissions encompass GHGs that are emitted to provide the project with electricity (including generation and transmission) and supply the project with water (including water treatment and conveyance). The interim thresholds apply to emissions from the transportation and treatment of solid and liquid waste produced from the project's operations and water for the project's operations, and transportation and processing of solid waste. Construction related GHG emissions are to be amortized across the lifetime of the project (i.e., dividing total construction GHG emissions by the number of years the project is expected to be operated) if known, or a default lifetime of 30 years.

The County's thresholds are separated into three categories - residential, non-residential, and mixed-use. A project's total estimated GHG emissions calculated using CalEEMod would be divided by the total number of residents, jobs, or service persons created by the project or plan. The efficiency thresholds established by the County are 2.68 MT CO<sub>2</sub>e per resident for residential projects, 2.63 MT CO<sub>2</sub>e per employee for non-residential projects, and 2.67 MT CO<sub>2</sub>e per service person for mixed-use projects.

### **Impacts and Mitigation Measures**

This section describes generalized GHG and climate change impacts associated with the Broadband Program. The concurrent construction of the five near-term Priority Area projects analyzed in this Program EIR would be representative of future broadband projects of similar size and scale located in other areas of the County. In general, implementation of future broadband projects envisioned by the Broadband Program could result in GHG and climate change impacts as described in the following sections.

**Threshold 1: Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?**

*Impact Statement 1: Implementation of the Broadband Program could generate GHG emissions, directly or indirectly, that exceed the County of Santa Barbara or SBCAPCD screening thresholds or significance thresholds resulting in a significant impact on the environment.*

**Priority Area Projects**

**Construction**

Construction of the Project has the potential to generate GHG emissions through the use of heavy-duty construction equipment, such as backhoes, loaders, drill rigs, trenchers, and other equipment; and through vehicle trips generated by workers, haul trucks, and vendor trucks traveling to and from the Project Site. Mobile source GHG emissions would result from the use of construction equipment and worker vehicles and trucks. In accordance with County guidance, GHG emissions from construction have been amortized over the 30-year lifetime of the five near-term Priority Area projects and are added to the operational emissions discussion for the determination of significance (see discussion below under Operation for impact conclusion). While funding has not been secured for all Priority Areas, for the purposes of this analysis and to provide for a conservative and environmentally protective analysis, it is assumed that construction of five near-term Priority Area projects would occur simultaneously over a period of approximately 24 months beginning as early as in Spring 2025. Project construction emissions are shown in **Table 4.5-5, Construction GHG Emissions for the Five Near-Term Priority Area Projects**. Refer to Appendix F for construction assumptions and detailed input parameters and results.

**TABLE 4.5-5  
 CONSTRUCTION GHG EMISSIONS FOR THE FIVE NEAR-TERM PRIORITY AREA PROJECTS**

<b>Construction Year<sup>a</sup></b>	<b>CO<sub>2</sub>e (Metric Tons/year)<sup>b</sup></b>
Year 1	1,859
Year 2	4,136
Year 3	206
<b>Total Construction Emissions</b>	<b>6,202</b>
Amortized Construction Emissions (30-years)	207

<sup>a</sup> Construction of the five near-term Priority Area projects would last for approximately 24 months. For emissions modeling purposes, construction was assumed to begin in early-2025, corresponding to Year 1 and end in early 2027, corresponding to Year 3.

<sup>b</sup> Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix F.

SOURCE: ESA, 2024.

**Future Broadband Project Construction**

It is anticipated that future broadband projects, located in other areas of the County, would be of similar size and scale, with a comparable construction effort in terms of overall intensity, would employ a similar mix of construction methods and equipment, and would result in similar construction durations as those assumed for the initial five near-term Priority Area projects. Thus, they would generate approximately the same GHG emissions during construction. The Broadband Program would install broadband services in a



total of nine different areas, with the expectation that these five near-term Priority Area projects may be constructed simultaneously. The remaining four areas that would occur as future broadband projects would also generate construction-related GHG emissions; however, the linear mileage for the future broadband projects is not known. Therefore, GHG emissions have been estimated for the future broadband projects based on the assumption that the per project mileage for the future broadband projects is roughly equivalent to the per project mileage for the five near-term Priority areas. Based on these assumptions, it is expected that the construction of the future broadband projects would result in GHG emissions of approximately 4,962 MTCO<sub>2e</sub> over the course of construction with an amortized construction GHG emission of approximately 166 MTCO<sub>2e</sub>. The amortized construction GHG emissions from the future broadband projects are considered in the context of operational GHG emissions below.

## Operation

Operation of the initial five near-term Priority Area projects would generally operate passively, with only occasional maintenance typically consisting of weed abatement and periodic accessing of hand holes and splice cases from the ground surface along a given alignment. The Project's limited maintenance operations would include a few vehicles per month and would result in minimal GHG emissions. According to the Santa Barbara County Environmental Thresholds and Guidelines Manual, projects that do not demonstrate consistency with the 2030 CAP and its measures must be analyzed subject to the County's established quantitative thresholds. As discussed in depth below, the Project would be consistent with several measures within the CAP. However, the CAP's consistency checklist would not be applicable to the Proposed Project. Step 2 of the Checklist Applicability contained within the Compliance Checklist Table notes that projects that involve the preparation of a CEQA document but do not include new buildings, substantial redevelopment, or additions of more than 2,000 square feet of floor area to existing building would not be applicable for compliance analysis under the checklist and that no further GHG analysis is required. Due the fact that the proposed Project is not a typical land use project, for which the CAP checklist was primarily prepared for, the project is not required to utilize the checklist for consistency. Nevertheless, the Project would adhere to several measures contained within the CAP, including TR-2.10 and TR-2.12. Furthermore, because the CAP checklist notes that no further GHG analysis is necessary, the efficiency thresholds established by the County would not be applicable, nor suitable for the Broadband Program, because the Project does not involve the construction and operation of a traditional land use, such as a residential or office building, with well-defined residential and employee populations.

Furthermore, the Project would not require additional employees to conduct maintenance; therefore, an increase in worker-related commuting vehicle emissions would not be anticipated. The Broadband Program would also not induce new electricity demand, nor would it result in solid waste or wastewater. The Project's amortized construction GHG emissions would result in approximately 207 MTCO<sub>2e</sub>. The Project's operation would require minimal employees and maintenance vehicles and would result in negligible emissions over those of existing conditions. Additionally, the Project would expand access to broadband internet, which may introduce opportunities for telecommuting in rural areas. The Project's expansion of broadband services would likely result in a reduction in VMT countywide, lowering the GHG emissions associated with mobile vehicles. Although the County's 2030 CAP lists the expansion of Broadband services as a strategy to lower countywide vehicle miles traveled and the associated GHG

emissions, these reductions in GHG emissions were not quantified at this time. Nevertheless, the Project would have minimal operational emissions and therefore this impact is less than significant.

### **Future Broadband Project Operation**

Similar to the operation of the five near-term Priority Area projects, operation of future yet-to-be-proposed broadband projects would generally operate passively, with only occasional vehicle maintenance trips. It is anticipated that the future broadband projects, which would be located in different areas of the County, would be of similar size and scale as these five near-term Priority Area projects. As with the operation of the five near-term Priority Area projects, the operation of the future broadband projects would not require additional employees to conduct maintenance, would not induce new electricity demand, nor would it result in solid waste or wastewater. The Project's operation would result in negligible emissions over those of existing conditions.

The Project's total amortized construction GHG emissions from both the five near term Priority Areas and other future broadband installation projects would result in a total approximately 373 MTCO<sub>2</sub>e (i.e., 207 + 166 MTCO<sub>2</sub>e). The Project's total amortized construction GHG emissions estimate does not account for the reductions in GHG emissions that would occur as a result of Project implementation.

It is expected that the Broadband Program would directly contribute to achieving the 2030 CAP Action TR-2.12, Broadband Accessibility, which aims to expand internet access in rural parts of the County (County of Santa Barbara 2023b). The Project would help this expansion of broadband accessibility to support remote workforce and telecommuting efforts, which would reduce county-wide VMT levels, resulting in reduced GHG emissions from motor vehicles, primarily those associated with workforce commuting. Data provided by SBCAG's Connected 2050 RTP/SCS provides substantial evidence that the expansion of broadband accessibility would reduce county-wide VMT. As stated in SBCAG's Connected 2050 RTP/SCS, it is estimated that if people were able to work remotely, 50-80 percent would do so, and assuming they would work remotely 2 to 4 days per week, the VMT reduction would be between 450,000-750,000 per day (SBCAG 2021). Although this is a countywide estimate that would include both incorporated cities and unincorporated cities, the evidence demonstrates that those areas affected by the Project's expansion of services would experience VMT reductions and associated GHG emissions reductions. Thus, with these levels of reduction in VMT, it is expected that the reductions in VMT, and associated GHG emissions, as a result of the Project would offset the Project's total amortized construction GHG emissions. Therefore, it is expected that the Project's net GHG emissions would be minimal, and likely net negative. Therefore, GHG emission impacts would be less than significant.

### **Mitigation Measures**

None required.

## Cumulative Impacts

*Implementation of the Broadband Program, in combination with other development, could contribute to the generation of cumulative GHG emissions, directly or indirectly, that exceed the County of Santa Barbara or SBCAPCD screening thresholds or significance thresholds resulting in a significant cumulative impact on the environment.*

Analysis of GHG emissions is cumulative in nature because impacts are caused by cumulative global emissions and additionally, climate change impacts related to GHG emissions do not necessarily occur in the same area as a project is located. The emission of GHGs by a single development project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHGs from more than one project and many sources in the atmosphere that may result in global climate change. The resultant consequences of climate change can cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change.

As discussed above, the primary source of GHG emissions generated by implementation of the proposed Project would occur during construction, which would be temporary in nature. With the GHG reductions expected to result from the Project's implementation, the Project's would have minimal GHG emissions that would not conflict with any County of Santa Barbara or SBCAPCD significance thresholds and thus, would not result in a significant cumulative GHG impact. All past, present, and future projects would also have to meet the County's or SBCAPCD significance thresholds or mitigate impacts. Therefore, even when considered in conjunction with other development projects, the proposed Projects' impact would not be considered cumulatively significant since they are below the significance thresholds.

## Mitigation Measures

None required.

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

*Impact Statement 2: Implementation of the Priority Area projects and future broadband projects could contribute to cumulative GHG impacts if it would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.*

### **Priority Area Projects and Future Broadband Projects**

In order to assess the Priority Area and future broadband projects' potential to conflict with the 2022 Climate Change Scoping Plan, SBCAG's 2050 Connected RTP/SCS, and the County of Santa Barbara General Plan and 2030 Climate Action Plan, this section analyzes the Priority Area and future broadband projects consistency with the strategies and policies set forth in these plans to meet GHG emission-reduction targets set by CARB. Generally, projects are considered to not conflict with applicable land use plans and regulations if they are compatible with the general intent of the plans and would not preclude the attainment of their primary goals.

### CARB 2022 Scoping Plan

The CARB 2022 Scoping Plan was adopted in December 2022 and expands on prior Scoping Plans and recent legislations, 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 earlier (CARB 2022a). To achieve carbon neutrality by 2045, the 2022 Scoping Plan contains GHG reductions, technology, and clean energy mandated by statutes, reduction of short-lived climate pollutants, and mechanical carbon dioxide capture and sequestration actions. The 2022 Scoping Plan contains actions and strategies to meet GHG reduction goals. **Table 4.5-6, *Consistency Analysis with Applicable 2022 Scoping Plan Actions and Strategies***, contains a list of GHG emission reduction actions and strategies from the 2022 Scoping Plan and describes the Broadband Program Priority Area projects and future broadband projects consistency with them. As shown in Table 4.5-6, the Priority Area and future broadband projects would not conflict with the 2022 Scoping Plan and impacts would be less than significant.

**TABLE 4.5-6  
 CONSISTENCY ANALYSIS WITH APPLICABLE 2022 SCOPING PLAN ACTIONS AND STRATEGIES**

2022 Scoping Plan Action	Responsible Party(ies)	Consistency Analysis
<p><b>Transportation Technology and Fuels Sector</b></p> <p>Achieve 100 percent ZEV sales of light duty vehicles by 2035 and medium heavy-duty vehicles by 2040.</p> <p>Accelerate the reduction and replacement of fossil fuel production and consumption in California.</p>	<p>State agencies and local agencies</p>	<p><b>No Conflict.</b> The Priority Area and future broadband projects would not conflict with these actions but would benefit from them by reducing GHG emissions from maintenance vehicles during operation as fossil fueled vehicles are replaced with ZEV.</p>
<p><b>Vehicles Miles Traveled Sector</b></p> <p>Achieve a per capita VMT reduction of at least 25 percent below 2019 levels by 2030 and 30 percent below 2019 levels by 2045.</p>	<p>State agencies and local agencies</p>	<p><b>No Conflict.</b> The Priority Area and future broadband projects would support better internet for telecommuting in rural areas. This would result in supporting the Scoping Plan’s initiative to prioritize projects that would result in a reduction of VMT from greater availability to options for telecommuting and telehealth. The Project would support this initiative by expanding telecommuting options through improved wireless internet connectivity, and thus reducing countywide VMT. Overall, VMT reductions associated with the Priority Area and future broadband projects would exceed the minimal VMT generated from occasional inspection and maintenance activities. Additionally, the Priority Area and future broadband projects would not induce growth, so they would not affect VMT reduction efforts.</p>
<p><b>Clean Electricity Grid Sector</b></p> <p>Use long-term planning processes (Integrated Energy Policy Report, IRP, CAISO Transmission Planning Process, AB 32 Climate Change Scoping Plan) to support grid reliability and expansion of renewable and zero-carbon resource and infrastructure deployment.</p>	<p>State agencies and local agencies</p>	<p><b>No Conflict.</b> Decarbonizing the electricity sector depends on both using energy more efficiently and replacing fossil-fueled generation with renewable and zero carbon resources, including solar, wind, energy storage, geothermal, biomass, and hydroelectric power. The Priority Area and future broadband projects would not result in additional electricity demand over current existing conditions, so this measure does not apply to the Priority Area and future broadband projects. As such, the Priority Area and future broadband projects would not conflict with actions in the clean electricity grid sector to reduce GHGs.</p>

2022 Scoping Plan Action	Responsible Party(ies)	Consistency Analysis
<p><b>Sustainable Manufacturing and Buildings Industry and Building Sectors</b></p> <p>Maximize air quality benefits using the best available control technologies for stationary sources in communities most in need, including frontline, low-income, disadvantaged, rural, and tribal communities.</p> <p>Achieve three million all-electric and electric-ready homes by 2030 and seven million by 2035 with six million heat pumps installed statewide by 2030.</p>	<p>State agencies and local agencies</p>	<p><b>No Conflict.</b> The 2022 Scoping Plan reduces dependence on fossil gas in the industrial and building sectors by transitioning substantial energy demand to alternative fuels. The Project would not result in the construction of any buildings, and thus this measure does not apply to the Priority Area and future broadband projects. As such, the Priority Area and future broadband projects would not conflict with actions in the sustainable manufacturing and buildings industry and building sectors to reduce GHGs.</p>
<p><b>Carbon Dioxide Removal and Capture Sector</b></p> <p>Implement SB 905 by convening a multi-agency Carbon Capture and Sequestration Group to identify the current status, concerns, and outstanding questions concerning CCS, and develop a process to engage with communities to understand specific concerns and consider guardrails to ensure safe and effective deployment of CCS. Iteratively update the CARB CCS Protocol with the best available science and implementation experience.</p>	<p>State agencies and local agencies</p>	<p><b>No Conflict.</b> The Priority Area and future broadband projects would not conflict with measures to increase carbon dioxide removal and capture. In general, the new fiber optic lines would be installed underground along existing public or private roadways with the intention to minimize or avoid disturbance of roadway surfaces wherever feasible. However, it is possible some fiber optic lines could be installed directly under roadways in areas with limited shoulder space or where existing conduit under the road may be used, thus avoiding new surface disturbance. Lateral alignments would typically follow other utility installations. Thus, the Priority Area and future broadband projects would avoid disturbing vegetation as much as possible. As such, the Priority Area and future broadband projects are consistent with measures in the carbon dioxide removal and capture sector to reduce GHG emissions.</p>
<p><b>Short-Lived Climate Pollutants (Non-Combustion Gases) Sectors</b></p> <p>Install state of the art anaerobic digesters that maximize air and water quality protection, maximize biomethane capture, and direct biomethane to sectors that are hard to decarbonize or as a feedstock for energy.</p> <p>Maximize existing infrastructure and expand it to reduce landfill disposal, with strategies including composting, anaerobic digestion, co-digestion at wastewater treatment plants, and other non-combustion conversion technologies.</p> <p>Mitigate emissions from leaks by regular leak detection and repair (LDAR) surveys at all facilities and replace high emitting equipment with zero emission alternatives wherever feasible.</p> <p>Expand the use of very low- or no-GWP technologies in all HFC end-use sectors, including emerging sectors, like heat pumps for applications other than space conditioning, to maximize the benefits of building decarbonization.</p> <p>Reduce fuel combustion commensurate with state's climate and air quality programs, particularly from reductions in transportation emissions and agricultural equipment emissions.</p>	<p>State agencies and local agencies</p>	<p><b>No Conflict.</b> The Priority Area and future broadband projects would not conflict with SLCP dairy and livestock methane sector actions, SLCP landfill methane sector actions, SLCP upstream oil and gas methane sector action, SLCP upstream oil and gas methane sector actions, SLCP hydrofluorocarbons sector, or SLCP anthropogenic black carbon sector actions in the 2022 Scoping Plan. The Priority Area and future broadband projects do not include dairy or livestock.</p>

2022 Scoping Plan Action	Responsible Party(ies)	Consistency Analysis
<p><b>Natural and Working Lands: Strategies for Forest Shrublands and Chaparral, Grasslands, Croplands, Developed Lands, Vegetative Lands, and Wetlands NWL</b></p> <p>Implement AB 1757 and SB 27 and the Climate Smart Strategy.</p> <p>Accelerate the pace and scale of climate smart forest management to at least 2.3 million acres annually by 2025, in line with the climate smart management strategies identified in this Scoping Plan, the NWL Climate Smart Strategy, and the Wildfire and Forest Resilience Action Plan.</p> <p>Establish and expand mechanisms that ensure grasslands are protected from land conversion/parcelization and that support ongoing, rather than one-time, management actions that improve carbon sequestration.</p> <p>Accelerate the pace and scale of healthy soils practices to 80,000 acres annually by 2025, conserve at least 8,000 acres of annual crops annually, and increase organic agriculture to 20 percent of all cultivated acres by 2045.</p> <p>Increase urban forestry investment annually by 200 percent, relative to business as usual.</p> <p>Establish and expand mechanisms that ensure sparsely vegetated lands are protected from land conversion, prioritizing those areas most vulnerable to climate change and loss.</p>	<p>State agencies and local agencies</p>	<p><b>No Conflict.</b> The Priority Area and future broadband projects would not conflict with NWL strategies for forest shrublands and chaparral, grasslands, croplands, developed lands, vegetative lands, and wetlands NWL actions under the 2022 Scoping Plan. The Priority Area and future broadband projects are a last-mile broadband program which would be installed along existing roadways and would minimize disturbance. The Projects would not include any construction activities on any forest, shrublands and chaparral, grasslands, croplands, developed lands, vegetative lands, and wetlands NWL.</p>
<p>SOURCE: ESA 2024.</p>		

**SBCAG Connected 2050 RTP/SCS**

The five near-term Priority Area projects and future broadband projects would support better internet for expanded telecommuting options in rural areas, which would result in a reduction in VMT countywide. The five near-term Priority Area projects and future broadband projects support SCAG’s priority of reducing VMTs in the Connected 2050 RTP/SCS, which estimates that if people were able to work remotely, 50-80 percent would, and assuming they work remotely 2-4 days per week, the VMT reduction would be between 450,000-750,000 per day (SBCAG 2021). Overall, VMT reductions associated with five near-term Priority Area projects and future broadband projects would exceed the minimal amount of VMT generated from the Project’s maintenance activities. Additionally, the Priority Area and future broadband projects are not growth inducing and would not result in an increase of VMT within the County. Thus, the Priority Area and future broadband projects would not conflict with the SBCAG Connected RTP/SCS and impacts would be less than significant.

**Santa Barbara County Air Pollution Control District**

The five near-term Priority Area projects and future broadband projects would not exceed the screening threshold of 10,000 MTCO<sub>2e</sub> per year, established in the SBCAPCD’s Environmental Review Guidelines (2015). As previously discussed, the Project’s operations would only consist of minimal vehicle trips for occasional maintenance, which would not be a major source of GHG emissions. Furthermore, as shown above, the Project would be consistent and not conflict with the GHG emissions reduction goals of

CARB's 2022 Scoping Plan, especially for local reductions in VMT. The Project would expand access to at-home internet access for communities in rural areas of Santa Barbara County, which would support remote-work, telecommuting, and telehealth opportunities. Furthermore, the Project would comply with the local approved plans for GHG emission reduction. As such, the Project would not conflict with the thresholds established by the SBCAPCD and therefore the impacts would be less than significant.

### **County of Santa Barbara General Plan**

The five near-term Priority Area projects and future broadband projects would support Goal 3, Policy 3.2: Teleconferencing Telecommuting/Electronic Communication which states the County should research and support opportunities for telecommunication and computer-based communication that reduce the need for travel (County of Santa Barbara 2015). The Priority Area and future broadband projects would support better internet for telecommuting in rural areas which would result in a reduction in VMT countywide by reducing the need to travel. The Priority Area and future broadband projects would also comply with Goal 4, Policies 4.1, Construction, and 4.3, Reuse of Asphalt, by reusing and recycling construction waste to reduce energy consumption and by reusing asphalt where applicable. Thus, the Priority Area and future broadband projects would not conflict with the County of Santa Barbara General Plan and impacts would be less than significant.

### **County of Santa Barbara 2030 Climate Action Plan**

The five near-term Priority Area projects and future broadband projects would support better internet for telecommuting in rural areas which would result in a reduction in VMT countywide. Thus, the Broadband Project supports the 2030 CAP action TR-2.10, Employer Trip Reduction Requirements & Programs, to help achieve a 50-80 percent telework participation rate for large employers within the unincorporated County (County of Santa Barbara 2023b). Additionally, the Priority Area projects and future broadband projects would directly contribute to achieving the 2030 CAP Action TR-2.12, Broadband Accessibility, which aims to increase internet access in rural parts of the County in order to further support a remote workforce and telecommuting efforts (County of Santa Barbara 2023b). These actions have been identified by the County as methods to help reduce the emission of GHGs within the County. Thus, the Priority Area and future broadband projects would not conflict with the County of Santa Barbara 2030 CAP and impacts would be less than significant.

### **GHG Reduction Plans, Policies and Regulations**

Based on the information above, the five near-term Priority Area projects and future broadband projects would comply with plans, policies and regulations for reducing GHG emissions and this impact would be less than significant.

### **Mitigation Measures**

None required.

## **Cumulative Impacts**

*Impact Statement: Implementation of the five near-term Priority Area projects and future broadband projects, in combination with other development, could contribute to cumulative GHG impacts if it would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.*

As discussed above, the primary source of GHG emissions generated by implementation of the five near-term Priority Area projects and future broadband projects would occur during construction, which would be temporary in nature. As previously mentioned, the Projects' temporary construction and minimal operational GHG emissions would not conflict with any applicable screening or significance threshold. Therefore, the five near-term Priority Area projects and future broadband projects would not contribute to a cumulative GHG impact. Furthermore, as analyzed above, the five near-term Priority Area projects and future broadband projects would not conflict with and applicable plan, policy, or regulation for the purposes of reducing the emissions of GHGs. Therefore, even when considered in conjunction with other development, the five near-term Priority Area projects and future broadband projects' impact would not be considered cumulatively significant.

## **Mitigation Measures**

None required.



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