4.5 Greenhouse Gas Emissions

This section summarizes the setting for greenhouse gas (GHG) emissions and climate change and analyzes the impacts related to GHG emissions and climate change due to the Housing Plan.

4.5.1 Setting

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2); methane (CH_4); nitrous oxides (N_2O); fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs); and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a 100-year GWP of 30, meaning its global warming effect is 30 times greater than CO_2 on a molecule per molecule basis (United Nations Intergovernmental Panel on Climate Change [IPCC] 2021).[1]

GHGs are emitted by natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are usually by-products of fossil fuel combustion, and CH_4 results from off-gassing associated with agricultural practices, landfills, and other sources. Human-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6 (United States Environmental Protection Agency [USEPA] 2022a).

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. The baseline against which these changes are measured originates in historical records that identify temperature changes that occurred in the past, such as during previous ice ages. The global climate is changing continuously, as evidenced in the geologic record, which indicates repeated episodes of substantial warming and cooling. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming over the past 150 years. The IPCC expressed in their Sixth Assessment Report that the rise and continued growth of atmospheric CO_2 concentrations is unequivocally due to human activities (IPCC 2021). Human influence has warmed the atmosphere, ocean, and land, which has led the climate to warm at an unprecedented rate in the last 2,000 years. It is estimated that between the period of 1850 through 2019, a total of 2,390 gigatons of

[1] The Intergovernmental Panel on Climate Change's (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2017 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change's (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

anthropogenic CO_2 was emitted. It is likely that anthropogenic activities have increased the global surface temperature by approximately 1.07 degrees Celsius between the years 2010 through 2019 (IPCC 2021).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be approximately 33 degrees Celsius (°C) cooler (World Meteorological Organization 2013). However, since 1750, estimated concentrations of CO_2, CH_4, and N_2O in the atmosphere have increased by 47 percent, 156 percent, and 23 percent, respectively, primarily due to human activity (IPCC 2021). GHG emissions from human activities, particularly the consumption of fossil fuels for electricity and gas production and transportation, are believed to have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that currently occur naturally.

a. Greenhouse Gas Emissions Inventory

Global Emissions Inventory

Worldwide anthropogenic GHG emissions totaled 47,000 million metric tons (MMT) of CO_2e in 2015, which is a 43 percent increase from 1990 GHG levels (USEPA 2022b). Specifically, 34,522 MMT of CO_2e of CO_2, 8,241 MMT of CO_2e of CH_4, 2,997 MMT of CO_2e of N_2O, and 1,001 MMT of CO_2e of fluorinated gases were emitted in 2015. The largest source of GHG emissions were energy production and fuel use from vehicles and buildings, which accounted for 75 percent of the global GHG emissions. Agriculture uses and industrial processes contributed 12 percent and six percent, respectively. Waste sources contributed three percent and international transportation sources contributed two percent. These sources account for approximately 98 percent because there was a net sink of two percent from land-use change (including afforestation/reforestation and emissions removals by other land use activities) (USEPA 2022b).

United States Emissions Inventory

Total United States (U.S.) GHG emissions were 6,558 MMT of CO_2e in 2019. Emissions decreased by 1.7 percent from 2018 to 2019. Since 1990, total U.S. emissions have increased by an average annual rate of 0.06 percent for a total increase of 1.8 percent between 1990 and 2019. The decrease from 2018 to 2019 reflects the combined influences of several long-term trends, including population changes, economic growth, energy market shifts, technological changes such as improvements in energy efficiency, and decrease carbon intensity of energy fuel choices. In 2019, the industrial and transportation end-use sectors accounted for 30 percent and 29 percent, respectively, of nationwide GHG emissions; while the commercial and residential end-use sectors accounted for 16 percent and 15 percent of nationwide GHG emissions, respectively, with electricity emissions distributed among the various sectors (USEPA 2022c).

California Emissions Inventory

Based on the California Air Resources Board (CARB) California Greenhouse Gas Inventory for 2000-2019, California produced 418.2 MMT of CO_2e in 2019, which is 7.2 MMT of CO_2e lower than 2018 levels. The major source of GHG emissions in California is the transportation sector, which comprises 40 percent of the state's total GHG emissions. Vehicle miles traveled (VMT), a measure of how much and how far people drive by private vehicle, is an indicator of GHG emissions from transportation. CARB has determined State GHG emissions goals would not be achieved without reducing VMT growth (Office of Planning and Research 2018). The industrial sector is the second

largest source, comprising 21 percent of the state's GHG emissions, while electric power accounts for approximately 14 percent (CARB 2021). The magnitude of California's total GHG emissions is due in part to its large size and large population and total overall energy consumption compared to other states. However, its relatively mild climate is a factor that reduces California's per capita fuel use and GHG emissions as compared to other states. In 2016, the State of California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels, as emissions fell below 431 MMT of CO_2e (CARB 2021).

Local Emissions Inventory

Based on the City of Santa Barbara's 2019 GHG Emissions Inventory, the city generated approximately 622,110 MMT of CO_2e in 2019. On-road transportation was the major source, accounting for 44 percent of the total, largely due to passenger vehicles, but also commercial trips and buses. Off-road transportation accounted for 7 percent. VMT is a substantial contributor to GHG emissions in Santa Barbara, due to the large amount of single-occupancy vehicle travel that occurs to, from, and within the city. Residential and nonresidential natural gas usage was the second largest source of emissions at 22 percent. Residential and nonresidential electricity use accounted for 18 percent. Solid waste, water, and wastewater combined accounted for 9 percent of emissions. These calculations are based on fuel sources used for each respective category, including the use of natural gas, petroleum, and electricity. The 2019 inventory does not account for two programs launched following 2019: Santa Barbara Clean Energy, which now offers 100% carbon free electricity to City customers, and the Santa Barbara County ReSource Center, which reduces GHG emissions from waste.

b. Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through 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 21st century than were observed during the 20th century. Each of the past three decades has been warmer than all the previous decades on record, and the decade from 2000 through 2010 has been the warmest. The observed global mean surface temperature from 2015 to 2017 was approximately 1.0°C higher than the average global mean surface temperature over the period from 1880 to 1900 (National Oceanic and Atmospheric Administration 2020). Furthermore, several independently analyzed data records of global and regional land-surface air temperature obtained from station observations jointly indicate that land-surface air temperature and sea surface temperatures have increased.

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, larger forest fires, and more drought years (State of California 2018). 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 2018). 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 because of climate change.

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 2018). 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. The magnitude of the effect of the increased concentration of ground-level ozone, 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 2018). 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 (California Natural Resources Agency 2009).

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. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common (California Department of Water Resources 2018). 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. The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meters along the central and southern California coasts (State of California 2018). The Sierra snowpack provides most of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and the amount of snowfall at lower elevations, thereby reducing the total snowpack (State of California 2018). 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).

Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding (State of California 2018). Furthermore, climate change could induce substantial sea level rise in the coming century. Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels between 1993 to 2022, observed by satellites, is approximately 3.5 millimeters per year, double the twentieth century trend of 1.6 millimeters per year (World Meteorological Organization 2013; National Aeronautics and Space Administration 2022). 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. Sea level rise may jeopardize California’s water supply due to saltwater

intrusion and induce groundwater flooding and/or exposure of buried infrastructure (State of California 2018).

In Santa Barbara, coastal storms cause accelerated erosion of beaches and coastal bluffs from wave action, landslides from saturation of the ground from water, damage to the shoreline from wave runup, and flooding from high water events and storm surge. Models show rising sea level will result in increased coastal flooding, erosion, property damage, and resource loss, including the loss of recreational, economic, cultural, and ecological beach resources (City of Santa Barbara 2019).

Agriculture

California has an over $50 billion annual agricultural industry that produces over a third of the country's vegetables and two-thirds of the country's fruits and nuts (California Department of Food and Agriculture 2020). Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (State of California 2018). Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (California Climate Change Center 2006).

Ecosystems

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 because of higher temperatures, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (Parmesan 2006; State of California 2018).

4.5.2 Regulatory Setting

a. Federal Regulations

Federal Clean Air Act

On April 2, 2007, in *Massachusetts v. EPA* (549 U.S. 497 [2007]), the U.S. Supreme Court found GHGs are air pollutants covered by the Clean Air Act (CAA). The Court held the Administrator must determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding:** The Administrator finds the current and projected concentrations of six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to GHG pollution, which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action was a prerequisite for implementing GHG emission standards for vehicles (USEPA 2022c). In collaboration with the National Highway Traffic Safety Administration (NHTSA) and CARB, the USEPA developed emission standards for light-duty vehicles and heavy-duty vehicles (NHTSA et al. 2016; U.S. Government Publishing Office 2016).

Federal Fuel Efficiency Standards (CAFE)

Under the CAA, corporate average fuel economy (CAFE) standards have been set for passenger cars and light trucks. The State of California has traditionally had a waiver to set its own more stringent fuel efficiency standards. In 2020, the NHTSA and USEPA implemented the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE Rule). Part One of the SAFE Rule revoked a waiver granted by USEPA to the State of California to enforce more stringent emission standards for motor vehicles those required by USEPA for the explicit purpose of GHG reduction. However, in 2021 the federal government formally proposed to roll back portions of the SAFE Rule, restoring California's right to enforce more stringent fuel efficiency standards (NHTSA 2022). Most recently, in December 2021, the NHTSA finalized rules to repeal the SAFE I Rule established in 2020.

Executive Order 14057

In 2021, the President issued Executive Order 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*, which sets GHG emissions reduction requirements for the United States. Executive Order 14057 requires federal agencies to achieve the following:

- Achieve 100 percent carbon pollution-free electricity by 2030, including 50 percent on a 24/7 basis.
- Reach 100 percent zero-emission vehicle acquisition by 2035, including 100 percent light-duty acquisitions by 2027.
- Achieve net-zero building emissions by 2045, including a 50 percent reduction by 2032.
- Reduce Scope 1 and 2 greenhouse gas emissions by 65 percent from 2008 levels by 2030.
- Establish targets to reduce energy and potable water use intensity by 2030.
- Reduce procurement emissions to net-zero by 2050.

b. State Regulations

California Global Warming Solutions Act of 2006 (Assembly Bill 32, Senate Bill 32, and Assembly Bill 1279)

The "California Global Warming Solutions Act of 2006," (AB 32), outlines California's major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 MMT of CO_2e, which was achieved in 2016. CARB approved the Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others.

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law, extending the California Global Warming Solutions Act of 2006 by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100 (discussed below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies (CARB 2017).

AB 1279, "The California Climate Crisis Act," was passed on September 16, 2022, and declares the State would achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045, and to achieve and maintain net negative greenhouse gas emissions thereafter. In addition, the bill states that the State would reduce GHG emissions by 85 percent below 1990 levels no later than 2045. In response, CARB published a 2022 update to the Scoping Plan. The 2022 Scoping Plan lays out a path to achieve AB 1279 targets (CARB 2022a). The actions and outcomes in the 2022 Scoping Plan would achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

Senate Bill 100 (100 Percent Clean Energy Act)

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the State's Renewables Portfolio Standard Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Senate Bill 375 (Sustainable Communities and Climate Protection Act)

SB 375, signed in August 2008, enhances the State's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. In addition, SB 375 directs each of the State's 18 major Metropolitan Planning Organizations to prepare a "sustainable communities strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. Santa Barbara County Association of Governments (SBCAG) was assigned targets of a 13 percent reduction in GHGs from passenger vehicles by 2020 and a 17 percent reduction in GHGs from passenger vehicles by 2035 (CARB 2022b).

Executive Order B-55-18

On September 10, 2018, Governor Brown issued Executive Order B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative GHG emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 32, SB 100, SB 375, and SB 1383.

CARB Innovative Clean Transit Regulations

In December 2018, CARB adopted the Innovative Clean Transit regulations, requiring all transit agencies to develop a plan to achieve zero emission bus fleets on or before 2040. Starting between 2023 and 2029, transit agencies must begin purchasing only zero-emission bus replacements and must have completed the fleet replacement program prior to 2040.

California Code of Regulations Title 24 (California Building Code)

Updated every three years through a rigorous stakeholder process, Title 24 of the California Code of Regulations requires California homes and businesses to meet strong energy efficiency and sustainability measures, thereby lowering their GHG emissions. Title 24 contains numerous subparts, including Part 1 (Administrative Code), Part 2 (Building Code), Part 3 (Electrical Code), Part 4 (Mechanical Code), Part 5 (Plumbing Code), Part 6 (Energy Code), Part 8 (Historical Building Code), Part 9 (Fire Code), Part 10 (Existing Building Code), Part 11 (Green Building Standards Code), Part 12 (Referenced Standards Code). The California Building Code is applicable to all development in California (Health and Safety Code Sections 17950 and 18938[b]. Part 6 and Part 11 set forth energy and other conservation standards which establish, among other requirements, rules for installation of solar photovoltaic and battery storage standards, solid waste diversion standards, water conservation requirements, and electric vehicle accommodation requirements. The most recent iteration of the California Building Code, the 2022 Title 24 standards, is applicable to all buildings for which an application for a building permit is submitted on or after January 1, 2023.

The regulations receive input from members of industry, as well as the public, with the goal of "[r]educing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (Public Resources Code Section 25402). These regulations are scrutinized and analyzed for technological and economic feasibility (Public Resources Code Section 25402[d]) and cost effectiveness (Public Resources Code Sections 25402[b][2] and [b][3]).

Assembly Bill 341/Assembly Bill 1826 (Mandatory Recycling/Composting)

The California Integrated Waste Management Act of 1989, as modified by AB 341, requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows diversion away from landfills of 75 percent of all solid waste by 2020 and annually thereafter. AB 1826 requires recycling of organic waste (i.e., composting). All businesses and public entities that generate four or more cubic yards of solid waste per week and multi-family residential dwellings that have five or more units are required to recycle and compost. The County's ReSource Center, located at the Tajiguas Landfill, includes a Materials Recovery Facility (MRF) which separates excess recyclable material and assists to fulfill the requirements of AB 341.

California Model Water Efficient Landscape Ordinance

The revised Model Water Efficient Landscape Ordinance became effective on December 15, 2015. New development that includes landscaped areas of 500 square feet or more are subject to the following revised ordinance requirements:

- More efficient irrigation systems
- Incentives for graywater usage
- Improvements in on-site stormwater capture
- Limiting the portion of landscape that can be planted with high water use plants

Reporting requirements for local agencies.

c. Local Regulations

SBCAG Connected 2050 RTP/SCS

The Connected 2050 RTP/SCS was adopted by SBCAG in 2021, and it builds upon the goals, policies, and forecasts of preceding plans. The Connected 2050 RTP/SCS demonstrates that the SBCAG region would achieve emissions reductions consistent with targets set forth by SB 375. GHG reductions achieved through the Connected 2050 RTP/SCS would result in corresponding reductions in energy consumption in the region. The Connected 2050 RTP/SCS sets forth goals and objectives related to mixed-use development and the jobs-housing balance by allotting more housing to the southern portion of Santa Barbara County, as well as incorporating region-specific analysis of environmental justice indicators.

Santa Barbara Clean Energy

Santa Barbara Clean Energy is a Community Choice Aggregator which procures electricity from carbon-free energy sources, such as solar, wind, biomass, and hydroelectricity for delivery to Santa Barbara. Southern California Edison, the investor-owned utility serving Santa Barbara, maintains the responsibility of providing transmission and distribution services, and metering, billing collection, and customer service, however procurement of electric power is the responsibility of the Santa Barbara Clean Energy. At a minimum, energy procured through Santa Barbara Clean Energy provides 50 percent carbon-free energy, and buildings are automatically opted-in to the Santa Barbara Clean Energy system.

City of Santa Barbara Climate Action Plan

In 2024, the City adopted a climate goal of carbon neutrality by 2035 and approved a Climate Action Plan (CAP) entitled *Together to Zero* which serves as an update to the City's 2012 CAP. The CAP sets forth measures and actions to meet an emissions reduction target of 40 percent below 1990 levels by 2030 (SB 32 target year) and reaching City Council's adopted longer-term goal of carbon neutrality by 2035 (ten years sooner than Assembly Bill [AB] 1279 goal of carbon neutrality by 2045). The CAP includes new climate action strategies that address building energy use, transportation, solid waste, water, and wastewater, carbon sequestration, and community potential.

The CAP includes a *Master Environmental Assessment Guidelines for Greenhouse Gas Emissions Analysis* document. This document is intended to provide methodological guidance and quantitative thresholds of significance for use by city planners, project applicants, consultants, agencies, and members of the public in the preparation of GHG emissions analyses under CEQA for plans and projects located within the City.

City of Santa Barbara General Plan

The City of Santa Barbara General Plan was updated in 2011 and contains goals, policies, and actions aimed at guiding future growth within the City. Policies and actions pertaining to reduction of greenhouse gas emissions and included in the General Plan Land Use, Circulation, and Environmental Resources Elements are as follows (City of Santa Barbara 2011):

Land Use Element

- **Policy LG4: Principles for Development.** Establish the following Principles for Development to focus growth, encourage a mix of land uses, strengthen mobility options and promote healthy active living:
  - **Focus Growth.** Encourage workforce and affordable housing within a quarter mile of frequent transit service and commercial services through smaller units and increased density, transit resources, parking demand standards, targeted infrastructure improvements, and increased public areas and open space. Incorporate ideas as a result of an employee survey.
  - **Mix of Land Uses.** Encourage a mix of land uses, particularly in the Downtown to maintain its strength as a viable commercial center, to include retail, office, restaurant, residential, institutional, financial and cultural arts, encourage easy access to basic needs such as groceries, drug stores, community services, recreation, and public space.
  - **Mobility and Active Living.** Link mixed-use development with main transit lines; promote active living by encouraging compact, vibrant, walkable places; encourage the use of bicycles; and reduce the need for residential parking.
- **Policy LG6: Location of Residential Growth.** Encourage new residential units in multi-family and commercial areas of the City with the highest densities to be located in the Downtown, La Cumbre Plaza/Five Points area and along Milpas Street.
- **Policy LG15: Sustainable Neighborhood Planning.** Neighborhoods shall be encouraged to preserve and enhance the sense of place, provide opportunities for healthy living and accessibility, while reducing the community's carbon footprint.

Circulation Element

- **Policy C1: Transportation Infrastructure Enhancement and Preservation.** Assess the current and potential demand for alternative transportation and where warranted increase the availability and attractiveness of alternative transportation by improving related infrastructure and facilities without reducing vehicle access.
- **Policy C2: Regional Transportation and Commuter Transit.** Coordinate regionally with agencies and the private sector to establish viable rail, bus, and carpooling options for commuters, and create an energy efficient regional transportation network.

Environmental Resources Element

- **Policy ER3: Decrease City's Global Footprint.** In addition to promoting reduced unit size, building footprints and GHG emissions, and energy conservation, promote the use of more sustainable building and landscaping materials and methods.
- **Policy ER5 Energy Efficiency and Conservation.** As part of the City's strategy for addressing climate change, minimizing pollution of air and water, depleting nonrenewable resources and insulating from volatility of fossil fuel prices, dependence on energy derived from fossil fuels shall be reduced through increased efficiency, conservation, and conversion to renewable energy sources when practicable and financially warranted.

4.5.3 Impact Analysis

a. Methodology and Significance Thresholds

Appendix G of the *CEQA Guidelines* states that a project may have a significant adverse impact if it would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
2. 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 or not 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 15064[h][1]). In relation to GHG emissions, the effects of projects refer to the global accumulation of GHG emissions in the atmosphere.

Section 15064.4 of the CEQA Guidelines recommends that lead agencies quantify GHG emissions and consider several other factors that may be used in the determination of significance of GHG emissions from a project, including the extent to which the project may increase or reduce GHG emissions; whether a project exceeds an applicable significance threshold; and the extent to which the project complies with regulations or requirements adopted to implement a plan for the reduction or mitigation of GHG emissions.

CEQA Guidelines Section 15064.4 does not establish a threshold of significance. Lead agencies have the discretion to establish significance thresholds for their respective jurisdictions, and in establishing those thresholds, a lead agency may appropriately look to thresholds developed by other public agencies, or suggested by other experts, as long as any threshold chosen is supported by substantial evidence (CEQA Guidelines Section 15064.7[c]).

According to CEQA Guidelines Section 15183.5, projects can tier off of a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through analyzing the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan, such as a CAP. The adopted 2024 CAP, *Together to Zero,* functions as the City's qualified GHG reduction plan.

The City's CAP includes a goal of reducing communitywide GHG emissions consistent with the SB 32 target for 40 percent reduction below 1990 levels by 2030. It also includes an aspirational goal to achieve carbon neutrality by 2035. As part of the CAP, the City adopted *Master Environmental Assessment Guidelines for Greenhouse Gas Emissions Analysis,* which provides methodology for qualitatively determining a project's consistency with the CAP. This document states that if a plan/project is consistent with the existing General Plan Land Use designation and maximum densities allowed by existing zoning[2], then the plan/project is consistent with business-as-usual demographic forecasts and land use assumptions and are therefore within the scope of the CAP's analysis of communitywide GHG emissions.

[2] Projects using State Density Bonus but retain consistency with the land use designation are deemed consistent with the demographic forecasts and land use assumptions used in the CAP.

In addition, the document provides quantitative GHG thresholds to utilize for CEQA analysis in the event a project does not demonstrate conformance with the CAP utilizing the CEQA GHG checklist contained within the *Master Environmental Assessment Guidelines for Greenhouse Gas Emissions Analysis*, which are based on a per capita rate. The City's quantitative thresholds are 2.18 metric tons (MT) CO_2e per resident per year for residential projects and 2.13 MT CO_2e per service person[3] per year for mixed-use projects.

Although the City has established quantitative GHG thresholds, a quantitative threshold is typically used for the evaluation of project-level impacts and is not applicable to programmatic review of plan-level documents such as the Housing Plan. As described in Section 3, *Project Description*, although the total number of housing units analyzed for the purposes of this Program EIR (8,001) is known, it is speculative to determine the housing type, location, and number of units associated with individual development projects implemented in accordance with the Housing Plan. Accordingly, the use of the quantitative thresholds identified in the *Master Environmental Assessment Guidelines for Greenhouse Gas Emissions Analysis* is not feasible for this programmatic analysis. Instead, GHG emissions associated with project implementation are discussed qualitatively by comparing the Housing Plan to statewide emission reduction targets established in CARB's 2022 Scoping Plan and consistency with the City's CAP, as well as to the goals of the SBCAG Connected 2050 RTP/SCS.

b. Project Impacts and Mitigation Measures

Threshold 1:	Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
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 GHG-1 THE HOUSING PLAN WOULD BE CONSISTENT WITH CONNECTED 2050, THE 2022 SCOPING PLAN, AND THE CITY'S CAP. THEREFORE, THE HOUSING PLAN'S POTENTIAL IMPACTS ON GREENHOUSE GAS EMISSIONS WOULD BE LESS THAN SIGNIFICANT.

Construction

New residential development facilitated by the Housing Plan would result in GHG emissions during construction, primarily from fuel consumption associated with heavy equipment, light-duty vehicles, machinery, and generators for lighting. Temporary grid power may also be provided to construction trailers or electric construction equipment that may result in indirect GHG emissions from energy generation. Construction activities in the City are required to comply with applicable federal, state, and local regulations, which minimizes inefficient fuel consumption and associated GHG emissions. Construction activities are also subject to applicable regulatory requirements of CALGreen, which describe construction waste management practices to divert construction and demolition debris from landfills. Compliance with applicable regulatory requirements for construction activity would minimize inefficient use of energy during construction and, therefore, would minimize new GHG emissions from construction activity. Furthermore, in the interest of cost efficiency, it is reasonable to assume construction contractors would not utilize fuel in a manner that is wasteful or unnecessary, which also contributes to minimizing GHG emissions.

[3] The service population is equal to the residential population plus the number of employees.

GHG emissions from construction are short-term and temporary in nature and represent a relatively small portion of a project's lifetime GHG emissions. Operational GHG emissions typically represent the vast majority of project GHG emissions. Pursuant to the Santa Barbara County Air Pollution Control District (SBCAPCD) *Scope and Content of Air Quality Sections in Environmental Documents* (2022) SBCAPCD does not recommend a construction-related climate impact threshold. Therefore, the evaluation of GHG emissions impacts associated with project implementation is focused on operational emissions, discussed below.

Operations

The Housing Plan includes new residential development that would individually result in new GHG emissions during operation, typical of those associated with residential uses, including emissions from building energy usage and fuel consumption associated with vehicle trips. A discussion of operational GHG emissions from the Housing Plan and its consistency with applicable GHG plans is presented below. As a policy document, the Housing Plan promotes a residential development pattern that reduces energy consumption, VMT, water consumption, and solid waste generation. However, the rate of GHG emissions generation in Santa Barbara with implementation of the Housing Plan is speculative, and individual residential development projects are assumed to result in direct GHG emissions generation due to fuel use, water use, vehicle trips, and other factors.

SBCAG Connected 2050 RTP/SCS

The Connected 2050 RTP/SCS demonstrates that the SBCAG region would achieve emissions reductions consistent with targets set forth by SB 375. GHG reductions achieved through the Connected 2050 RTP/SCS would result in corresponding reductions in energy consumption in the region. The Connected 2050 RTP/SCS includes goals and objectives related to mixed-use development and balancing jobs and housing by allotting more housing to the southern portion of Santa Barbara County, as well as incorporating region-specific analysis of environmental justice indicators. As shown in Table 4.5-1, the Housing Plan would be consistent with SBCAG's GHG emission reduction strategies established in the Connected 2050 RTP/SCS.

Table 4.5-1 Housing Plan Consistency with Applicable SBCAG 2050 RTP/SCS Strategies

Policy	Project Consistency
Land Use. ▪ Make land use decisions that adequately address regional transportation issues and are consistent with the RTP-SCS. ▪ Promote better balance of jobs and housing to reduce long-distance commuting by means of traditional land use zoning, infill development, and other, unconventional land use tools, such as employer-sponsored housing programs, economic development programs, commercial growth management ordinances, average unit size ordinances and parking pricing policies. ▪ Identify, minimize and mitigate adverse environmental impacts and, in particular, require mitigation of traffic impacts of new land development through onsite and related off-site improvements for all modes of transportation, including incentives to encourage the use of alternative transportation modes.	**Consistent.** The Housing Plan programs prioritize housing production on vacant and underutilized sites near transportation corridors and within biking and walking distance of existing residential and commercial development (refer to Chapter 3, *Project Description*, Section 3.1.1). The Housing Plan facilitates multimodal access to work, educational, and other destinations; plans growth near existing transit corridors; prioritizes infill and redevelopment of underutilized land to accommodate new growth and increase connectivity in existing neighborhoods; and encourages design and transportation options to reduce reliance on single-occupancy passenger automobiles.

Policy	Project Consistency
Alternative Fuels and Energy. ▪ Encourage the use of alternative fuels, and the application of advanced transportation and energy technologies to reduce vehicular emission production and energy consumption. ▪ Promote renewable energy and energy conservation, consistent with applicable federal, State, and local energy programs, goals, and objectives.	**Consistent.** Residential development projects facilitated by the Housing Plan would be required to comply with State and local regulations, including the California Building Energy Efficiency Standards and CALGreen, specifically related to the provision of electric vehicle supply equipment for parking spaces and the installation of photovoltaic solar panels on low-rise residential buildings (three stories or less) that generate an amount of electricity equal to expected electricity usage. Therefore, the Housing Plan would facilitate the use of alternative fuels and energy.
Alternative Transportation Modes. ▪ Encourage alternatives to single-occupancy vehicle trips and the use alternative transportation modes to reduce vehicle miles traveled and increase bike, walk and transit mode share. ▪ Provide for a variety of transportation modes and ensure connectivity within and between transportation modes both within and outside the Santa Barbara region. Alternative mode planning and projects shall be compatible with neighboring regions' transportation systems. ▪ Promote local and inter-city transit.	**Consistent.** The Housing Plan programs plan for infill development and redevelopment for housing units located near existing commercial destinations and transit centers, which would encourage the use of alternative transportation and connectivity between various transportation modes. Therefore, the Housing Plan encourages alternatives to single-occupancy vehicle trips and facilitates an increase, in bike, walk, and transit mode share.

Source: SBCAG 2021

2022 Scoping Plan

The 2022 Scoping Plan's strategies that are applicable to the Housing Plan include reducing fossil fuel use, energy demand, and VMT; maximizing recycling and diversion from landfills; and increasing water conservation. The Housing Plan is consistent with these goals as individual residential development projects would be required to comply with the latest Title 24 Green Building Code and Building Efficiency Energy Standards and install energy-efficient LED lighting, water-efficient faucets and toilets, water efficient landscaping and irrigation, and EV charging stations. Residential development in Santa Barbara is served electricity by Southern California Edison, which is required by SB 100 to increase procurement from eligible renewable energy resources to 60 percent by 2030 and 100 percent by 2045.

The Housing Plan prioritizes housing production on vacant and underutilized infill sites near transportation corridors and within biking and walking distance of existing residential and commercial development. Additionally, residential projects facilitated by the Housing Plan may be required to provide street dedications to maintain and/or improve walking paths for pedestrians if street standards in Chapter 22.44.080 of the Municipal Code are not met. As a result, the Housing Plan could potentially result in improved pedestrian facilities Citywide. In addition, nonresidential sites that are converted to housing would be required to change the number of bicycle parking spaces available on-site under existing conditions based on the parking requirements of Municipal Code Chapter 30.175.040. As described in Chapter 30.175.040, multi-unit residential housing requires one bicycle space per unit, while a majority of commercial, industrial, and office uses are required to provide bicycle parking at a rate of one space per 1,750 square feet. Accordingly, it is anticipated the number of bicycle parking spaces required on redeveloped residential properties would increase compared to the non-residential use due to the anticipated density increase of residences. The Housing Plan would facilitate the use of walking, biking, and transit to access

destinations, which would reduce future residents' VMT and associated fossil fuel usage. Therefore, the Housing Plan would be consistent with these goals of the 2022 Scoping Plan.

Climate Action Plan

As discussed in Section 4.5.2(c), *Local Regulations*, the City approved the 2024 CAP to meet the goal of achieving a 40 percent reduction in per capita GHG emissions compared to 1990 levels by 2030 (consistent with California Senate Bill [SB] 32) and a goal of achieving carbon neutrality by 2035 (ten years sooner than Assembly Bill [AB] 1279 goal of carbon neutrality by 2045). The CAP includes the *Master Environmental Assessment Guidelines for Greenhouse Gas Emissions Analysis*. This document states that if a plan/project is consistent with the General Plan land use designation and maximum densities allowed by existing zoning, then the plan/project is consistent with business-as-usual demographic forecasts and land use assumptions and are therefore within the scope of the CAPs analysis of communitywide GHG emissions. The Housing Plan does not propose any changes in land use to meet the City's RHNA allocation and therefore would be consistent with the existing land use designations and zoning implemented by the City. Therefore, the Housing Plan would meet the criteria presented within the *Master Environmental Assessment Guidelines for Greenhouse Gas Emissions Analysis*, for consistency with the CAP's analysis of communitywide GHG emissions. Therefore, the Housing Plan would be consistent with the CAP and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.5.4 Cumulative Impacts

GHG emissions are, by definition, cumulative impacts, as they add to the global accumulation of greenhouse gases in the atmosphere. Potential new residential development envisioned by the Housing Plan may generate temporary and long-term GHG emissions. However, as described in Impact GHG-1, the Housing Plan would be consistent with the City CAP's analysis of communitywide GHG emissions. Furthermore, residential development envisioned by the Housing Plan would be reviewed in accordance with the CAP's *Master Environmental Assessment Guidelines for Greenhouse Gas Emissions Analysis*, which would require individual projects to demonstrate consistency with the State's GHG emission reduction goals. If a residential project is found to be potentially inconsistent with the thresholds included within the *Master Environmental Assessment Guidelines for Greenhouse Gas Emissions Analysis*, the project would be required reduce impacts associated with GHG emissions. Therefore, the Housing Plan's contribution to cumulative GHG and climate change impacts would not be cumulatively considerable.

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