

19. CLIMATE CHANGE

This chapter provides an overview of climate change, the regulatory framework aimed at reducing the impacts of climate change, and discusses the potential effects climate change could have on the General Plan Planning Area.

19.1 OVERVIEW OF CLIMATE CHANGE

Climate is the long-term average of weather conditions, such as temperature and precipitation. While it is normal for Earth's climate system to experience long-term shifts in these average conditions, human activity is causing global climate change at a much more rapid pace than have occurred in the past. These activities, predominately the burning of fossil fuels, emit heat-trapping gases called greenhouse gases (GHGs) that build up in the atmosphere. As GHG levels increase, Earth's atmosphere traps more heat, triggering changes in the global climate system that may have serious and potentially catastrophic impacts on people, physical assets, and natural systems. As such, the State of California has adopted legislation which requires local jurisdictions to plan for the effects of climate change and to do their part in reducing the rate they release greenhouse gas emissions (GHG emissions).¹

The State encourages local jurisdictions to plan for climate change in two primary documents- the Assembly Bill 32 (AB 32) Scoping Plan and the Adaptation Planning Guide (APG). The AB 32 Scoping Plan outlines the State's efforts to achieve its GHG reduction targets, including identifying specific regulatory and market-based strategies. The AB 32 Scoping Plan also highlights local governments as a key partner in achieving the State's GHG reduction targets and includes guidance for how local governments can support State efforts. The APG provides guidance and resources for local governments to help them conduct climate adaptation planning efforts, including identifying vulnerabilities in their community and developing and implementing strategies to support community resilience. Legislation adopted regarding climate planning is described in Section 19.1.2 of this Chapter.

As part of the General Plan Update, City staff and the consultant team will prepare a separate Climate Action Plan (CAP). A CAP helps jurisdictions understand the existing GHG emissions within the community and identify strategies to reduce future GHG emissions to meet State reduction targets. Climate action planning often results in indirect community benefits by implementing GHG reduction strategies that also improve resiliency. These benefits may include a healthier and more robust economy, cost savings from lower energy and resource use, improved public health, and greater community equity, among many others.

19.1.1 CLIMATE CHANGE AND CEQA

The California Environmental Quality Act (CEQA) mandates the analysis and discussion of 20 environmental topics for proposed development or proposed plans, except for topics which a proposed development or plan is not anticipated to have an impact. The CEQA does not require an analysis or

¹ NASA Climate Kids, California Institute of Technology Earth Science Communications Team, June 18, 2020, What is Climate Change?, <https://climatekids.nasa.gov/climate-change-meaning/>, accessed on June 29, 2020.

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discussion of climate change, however, because sustainability and resiliency are rooted in most environmental topics, climate change is closely related to many of the topics which are analyzed and discussed in CEQA documents. Examples of CEQA topics relevant to the City of Hollister, and to climate planning, include:

- Air Quality
- Biological Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Transportation and Circulation
- Utilities and Service Systems
- Wildfire

Although climate change is not directly included in CEQA review, a CEQA review is required for the Climate Action Plan. The CAP CEQA review will analyze the impacts the goals and actions could have on the environment. Additionally, CEQA review on Climate Action Plans that meet the requirements in the State CEQA Guidelines Section 15183.5(b) can streamline the environmental review process for future development proposals if the proposed development is in compliance with and implements an adopted Climate Action Plan.

19.1.2 REGULATORY FRAMEWORK

19.1.1.1 State Regulations

Planning for climate change in California began at the state level in 2000 and has since grown in implementation through several adopted legislations.

Assembly Bill 32

Assembly Bill 32 (AB 32), otherwise known as the Global Warming Solutions Act of 2006, was adopted into State law as a comprehensive program to reduce GHG emissions from all sources throughout the state. This legislation makes the California Air Resources Board (CARB) the agency responsible for implementing AB 32 and coordinating the State's GHG reduction efforts. AB 32 requires CARB to take market-based and regulatory actions to reduce GHG emissions in the state to 1990 levels by 2020. The strategies to reach this goal are outlined in the AB 32 Scoping Plan, developed by CARB. These strategies come from virtually all sectors of the economy and are implemented through a comprehensive set of policies, planning, regulations, incentives, and voluntary efforts. The Scoping Plan, which was updated in 2014 and 2017, also identifies local governments as key partners in the State's GHG reduction efforts and identifies a target of 15 percent below 2005-2008 GHG levels as being comparable to 1990 levels for local efforts.

Executive Order B-30-15

Executive Order B-30-15 (EO B-30-15) was signed by Governor Brown in 2015 to establish an interim GHG emissions reduction target of 40 percent below 1990 levels by 2030. EO B-30-15 directed state agencies to take additional steps to prepare for the impacts of climate change. EO B-30-15 additionally required that climate change impacts be assessed in the State's Infrastructure Investment Plan and be considered in all state planning and investment decisions.

Senate Bill 32

Senate Bill 32 (SB 32) was adopted in 2016 to extend the mandate of AB 32, requiring the State to reduce GHG emissions to 40 percent below 1990 levels by 2030. SB 32 was adopted to incorporate aspects of EO B-30-15 into State legislation, both of which introduce longer-term targets for GHG emission reduction. While AB 32 established a target of returning GHG emissions to 1990 levels by 2020, EO B-30-15 and SB 32 set a target of reducing emissions 40 percent below 1990 levels by 2030. SB 32 is strictly an enforcement of GHG emission reduction and does not prescribe the strategies to do so, which continue to be outlined by CARB in the AB 32 Scoping Plan.

Senate Bill 379

SB 379, adopted in 2016, requires all cities and counties in the state to include climate adaptation and resiliency strategies in the safety elements of their general plans. These sections are required to include goals, policies, and objectives for their communities based on a vulnerability assessment or a local hazard mitigation plan.

California Adaptation Planning Guide

The California Office of Emergency Services prepared the APG to establish a system of guidance and support for local governments as they implement strategies to address the consequences of climate change. The APG sets the foundation for climate change adaptation planning and details in a step-by-step process for vulnerability assessments and adaptation strategy development for jurisdictions that do not have the capacity to pursue them separately. The APG provides options which allow jurisdictions to remain flexible in implementing strategies to reduce GHG emissions in order to cater to their time, financial, and scope needs. The APG was first adopted in 2012, and a revised version was prepared in 2020.

Safeguarding California

The Safeguarding California Plan is part of California's Climate Adaptation Strategy by the California Natural Resources Agency. Safeguarding California serves as an outline of the action taken by the State government to respond to climate change. Safeguarding California additionally includes the State's next steps and how those steps will be reached. The Safeguarding California Plan is a tool by which the State divulges their progress to the public to ensure accountability. Safeguarding California was first prepared in 2009, known at the time was the California Adaptation Strategy, and was most recently updated in 2018.

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Fourth Climate Change Assessment

California's Climate Change Assessments provide the scientific foundation for understanding climate change-related impacts and associated vulnerabilities throughout California at the state and regional level. The most recent Assessment, the Fourth Assessment, was released in 2018. The Fourth Assessment includes existing and projected future climate conditions, a description of physical impacts of climate change, and the science on the ecological systems and the impacts climate change has on them. This scientific background is used as a foundation to inform actions to increase resiliency by directly informing State policies, plans, programs, and guidance to ultimately safeguard the state from climate change. Findings in the Fourth Climate Change Assessment are also provided as summary reports and brochures which allow the public and decision makers to easily access the information and recommendations for vulnerable sectors.

The California Fourth Climate Change Assessment published, the Central Coast Region Report which details region-specific impacts from climate change. Projected changes to the Central Coast region, and Hollister, include:

- Increase in the minimum and maximum temperatures with greater increases in the inland region.
- Increase in the frequency of both extreme-dry and locally-extreme rainfall events.
- Increase in the frequency of droughts as a result in prolonged periods of dry weather.
- Wildfire threat increase due to prolonged dry spells.
- Loss of grassland vegetation due to warming temperatures.

19.2 CLIMATE CHANGE IN THE MONTEREY BAY REGION

The Association of Monterey Bay Area Governments (AMBAG) is the regional Joint Powers Authority in the Monterey region, covering Monterey, Santa Cruz, and San Benito Counties. AMBAG performs metropolitan level transportation planning on behalf of the region, including transportation demand modeling, regional housing assessments, and population and employment forecasts. AMBAG also provides climate action planning on a regional and local scale through the Energy Watch program. The Energy Watch program includes modeling GHG inventories for all member jurisdictions based on a standardized model as well as regular updates to the inventories and community engagement on the topic of climate change mitigation. The results of the City of Hollister GHG inventory are discussed in Section 19.2 below.

Additionally, AMBAG staff provides ongoing technical, legislative, and regulatory support, peer review of climate action planning documents, and development of climate mitigation strategies with all member jurisdictions. AMBAG works closely with some of their jurisdictions to create standalone reports and Energy Action Strategies, which provide an analysis of annual energy consumption patterns with conservation initiatives that are feasible and appropriate for each jurisdiction to reduce their emissions. Each Energy Action Strategies document is designed to easily fold into a larger Climate Action Plan in the case that a jurisdiction decides to pursue one.

19.2.1 CLIMATE CHANGE IN HOLLISTER

This section describes how climate change could affect Hollister in the short- and long-term future. Climate change has the possibility to increase flooding, drought, extreme heat, and wildfires in the General Plan Planning Area as described below.

19.2.1.1 Climate Change Susceptibility

The General Plan Planning Area is susceptible to several climate hazards which include flooding, extreme heat, drought, and wildfire as described below.

Flooding

Potential flooding in the General Plan Planning Area would likely occur adjacent to waterways, largely around the San Benito River to the southwest and Santa Ana Creek to the northeast of the General Plan Planning Area. Both the San Benito River and the Santa Ana Creek are principal drainage basins for the region and all water drainage in the General Plan Planning Area ends up in one of these two basins. Flooding events in the region are known to occur every four to five years. Climate change is projected to increase the occurrence of severe weather events, including intense atmospheric river storms during winter, which could increase the frequency of locally significant rainfall events.² Such events could increase the frequency of rain beyond the capacity of the San Benito River and Santa Ana Creek basins, resulting in greater flooding.

Damage as a result of flooding in and around the General Plan Planning Area would largely occur on agricultural lands in the form of agricultural losses, field work delays, and crop damages or loss. Flooding in urban areas can damage buildings, streets, bridges, and utility infrastructure.

Drought

A drought is defined as a period of drier-than-normal conditions that reduces water supplies. Droughts are becoming increasingly common throughout California. In urban areas, drought conditions can cause a decrease in available water supplies, which may lead to water conservation, water-use restrictions, and increases in water rates. Depending on the length and severity of a drought incident, some communities may need to seek alternative water supplies, which can be a costly and lengthy process. In addition, prolonged drought conditions can change soil conditions, leading to increased flooding and increased amounts of dry vegetation, which could exacerbate wildfire risk. The longest and most recent drought in California began December 27, 2011, and ended on March 5, 2019, lasting 376 weeks. This drought was among the most severe in the state's history, initiating widespread restrictions on water use.

² Langridge, Ruth. (University of California, Santa Cruz). 2018. Central Coast Summary Report. California's Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-006. Page 6.

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The Central Coast region is particularly susceptible to severe drought because the area relies heavily on annual precipitation to restore water aquifers. However, precipitation in the Central Coast region is becoming less frequent and consistent, sparking concerns that annual precipitation will not sustain annual water needs.³ Droughts are especially damaging to agricultural communities, which rely on a significant and consistent water supply to sustain agricultural operations. Droughts are also the most frequent of the natural hazards to occur in the General Plan Planning Area, with the most recent major drought lasting from 2012 to 2017.

Current modeling and analysis indicate that extended drought conditions will become more frequent and more severe because of climate change. Warmer temperatures and greater swings in precipitation events are likely to lead to increased frequency and intensity of drought events, including an increase in severe, long-lasting “mega-drought” events.⁴ Warmer temperatures, decreased levels of snowfall in the Sierra Nevada, and faster melting of snow are likely to contribute to the increased frequency of droughts. This increase in the number and intensity of drought years, along with an increase in extreme heat events, is additionally anticipated to increase the frequency and severity of wildfire events.

Extreme Heat

Extreme heat events are days where high temperatures significantly exceed normal levels. In Hollister, an extreme heat day is one with a high temperature above approximately 97 °F. Such events occur on average four times a year, but are projected to increase to 15 to 24 times a year by the end of the century.⁵ During extreme heat events, temperatures can reach dangerously high levels, which can lead to heat stroke and death. Some populations are more prone to extreme heat exposure, such as outdoor workers, athletes, and children. Prolonged exposure to extreme heat can also impact plants and animals, such as farm animals in outdoor pens or fields, and outdoor plants ranging from small gardens to large agricultural fields. These plants and animals are particularly vulnerable in the absence of adequate shelter or water. A future increase in temperatures is expected to contribute to longer and more severe California droughts, which could create significant challenges for water supplies, natural ecosystems, and agricultural operations.

Wildfire

Warm and dry conditions, winds, an abundant supply of dry brush that serves as fuel, and topography are all among the factors which contribute to the breadth and severity of a wildfire. The General Plan Planning Area is known to have dry conditions and high winds that are anticipated to increase the frequency and severity of wildfire events.⁶ However, the topography in the General Plan Planning Area is relatively flat

³ Escriva-Bou, Alvar, Public Policy Institute of California, April 10, 2018, 3 Things to Know about California Drought, <https://www.ppic.org/blog/3-things-know-california-droughts/>, accessed on June 25, 2020.

⁴ Langridge, Ruth. (University of California, Santa Cruz). 2018. Central Coast Summary Report. California’s Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-006. Page 16.

⁵ State of California Energy Commission, Cal-Adapt, Extreme Heat Days & Warm Nights tool, <https://cal-adapt.org/tools/extreme-heat/#:~:text=What%20is%20an%20extreme%20heat,1990%20between%20April%20and%20October.>, accessed on June 29, 2020.

⁶ Langridge, Ruth. (University of California, Santa Cruz). 2018. Central Coast Summary Report. California’s Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-006. Page 167.

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and is only considered to have a moderate fire hazard risk. While the threat of wildfires in the General Plan Planning Area are not as high as in other areas in the region, increased temperatures, dryer conditions, and more severe wind events caused by climate change is anticipated to increase the frequency and severity of local wildfire events. The General Plan Planning Area would also be susceptible to air quality issues from smoke generated by nearby wildfires.

19.2.1.2 Hollister's Progress in Addressing Climate Change

As discussed in Section 19.2 above, the AMBAG Energy Watch program models emissions in GHG inventories for all member jurisdictions. AMBAG assisted the City of Hollister with preparation of their 2005, 2010, and 2015 community-wide GHG emissions inventory through AMBAG's Energy Watch Program. The community-wide GHG inventory evaluated emissions released from several sectors, including residential, nonresidential (commercial and industrial), transportation, solid waste, and wastewater. The Hollister community emitted 109,090 Carbon Dioxide equivalents (CO₂e) in 2015. Of these emissions, approximately 33 percent came from the transportation sector, 30 percent from the residential sector, 25 percent from the nonresidential (commercial and industrial) sector, less than one percent from the solid waste sector, and 11 percent from the wastewater sector. Within the residential and the nonresidential (commercial and industrial) sectors, emissions are broken down into two subsectors: electricity and natural gas use, which altogether resulted in 55 percent of Hollister's community-wide emissions in 2015. Of the 55 percent of total emissions from these sectors, the residential subsectors broke down into 65 percent from natural gas and 35 percent from electricity use, and the nonresidential (commercial and industrial) subsectors broke down into 63 percent from natural gas and 37 percent from electricity.

The AMBAG GHG inventory determined that Hollister reduced their annual community-wide GHG emissions by 15 percent between 2005 and 2015. Most of the GHG emission reductions occurred in the residential and the commercial and industrial sectors, particularly the electricity subsector. These sectors were largely successful in such a dramatic reduction due to increased renewable energy sources provided through Monterey Bay Community Power (MBCP), previously known as Monterey Bay Community Power (MBCP).

19.2.1.3 Climate Action Planning Economic Benefits

As discussed, climate action planning often results in various additional benefits to a community. The City of Hollister has already experienced economic improvements due to the introduction of renewable energy. MBCP began operation as the region's Community Choice Aggregator program in 2016, serving as the default electricity supplier to customers in Monterey, San Benito, and Santa Cruz Counties. As a public agency, MBCP sells power at a lower cost than PG&E, and generally with a higher proportion of electricity from renewable energy. MBCP resulted in an estimated \$18.4 million in cost savings returned to their member jurisdictions in the first two years of operation. Additionally, MBCP dedicated millions of dollars to local energy programs such as solar power for low-income families and installation of electric vehicle charging stations. These benefits have resulted in cost savings for Hollister community members including residents, business owners, and agricultural operation owners. These cost savings result in money being reinvested in the local economy through extra spending money for families, business expansions for

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business owners, and reinvesting in business operations such as crop fields, which yield an even larger benefit on the local economy.

19.2.2 HOLLISTER CLIMATE ACTION PLAN

As discussed above, climate action plans are comprehensive planning documents that help local jurisdictions reduce their share of GHG emissions. The City of Hollister Climate Action Plan will be prepared during - but separate from - the General Plan Update process to create a roadmap the City can follow to reduce their GHG emissions. The CAP will include updated projections of Hollister's future GHG emissions, establish GHG emissions targets, and will adopt policies to help meet the GHG reduction goals.

19.3 IMPLICATIONS FOR THE GENERAL PLAN UPDATE

Based on information contained in this chapter, the General Plan Update process should consider the following:

- Identify the populations vulnerable to climate change in Hollister.
- Identify policies to reduce GHG emissions in Hollister.
- Consider climate change impacts when exploring potential land use changes.
- Integrate climate change and climate resilience into the Health and Safety Element.