



## Climate Mobilization Strategy

Public Review Draft

*prepared by*

**City of Healdsburg**  
City Manager's Office  
401 Grove Street  
Healdsburg, California 95448  
Contact: Andrew Sturmfels, Assistant City Manager

*prepared with the assistance of*

**Rincon Consultants, Inc.**  
449 15th Street, Suite 303  
Oakland, California 94612

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**RINCON CONSULTANTS, INC.**

Environmental Scientists | Planners | Engineers

[rinconconsultants.com](http://rinconconsultants.com)

# Acknowledgements

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## City Council

- **Ariel Kelley**, Mayor
- **David Hagele**, Vice Mayor
- **Ron Edwards**, Council Member
- **Chris Herrod**, Council Member
- **Evelyn Mitchell**, Council member

## City of Healdsburg Staff

- **Jeff Kay**, City Manager
- **Andrew Sturmfels**, Assistant City Manager
- **Terra Sampson**, Utility Conservation Analyst
- **Terry Crowley**, Utilities Director
- **Larry Zimmer**, Public Works Director
- **Curt Bates**, Principal Engineer
- **Jason Boaz**, Fire Chief
- **Lance Macdonald**, Division Chief/Fire Marshal
- **Scott Duiven**, Community Development Director
- **Ellen McDowell**, Senior Planner
- **Mark Themig**, Community Services Director
- **Jamie Licea**, Parks and Open Spaces Superintendent
- **Matt Jenkins**, Chief of Police
- **Tyler Ketterman**, Central Service Manager
- **Allison Mattioli**, Administrative Analyst II
- **Gabriel Munck**, Utility Conservation Intern

## Community Partners

- **Corazón Healdsburg**
- **Climate Action Healdsburg**
- **Chamber of Commerce**
- **Recology**
- **Zero Waste Sonoma**
- **Regional Climate Protection Authority**
- **Sonoma County Transit Authority**
- **Sonoma County Transit**

## Consultants

- **Rincon Consultants, Inc.**

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# 1 Introduction

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## 1.1 Purpose and Background

The Healdsburg Climate Mobilization Strategy (CMS) is a living document that outlines cost effective and impactful efforts that the City can implement to address climate change. The CMS will serve as a roadmap for the City to achieve greenhouse gas (GHG) emission reductions in support of the Regional Climate Protection Authority (RCPA) goal for Sonoma County to achieve carbon neutrality by 2030 and in alignment with the State’s goal to reduce GHG emissions by 40 percent below 1990 levels by 2030 and achieve carbon neutrality by 2045.<sup>1</sup> The primary focus of this document is to detail the City’s current and projected GHG emissions and prioritize and describe key measures and actions for the near-term that will be most impactful in reducing GHG emissions, while also being community-driven, feasible, and equitable. The CMS also highlights existing GHG reduction projects being undertaken by the City and supports the implementation of planned GHG reduction projects.

### Healdsburg Community

The City of Healdsburg is located within northern Sonoma County in California. The City is approximately 4.4 square miles and has a population of approximately 11,700 people, of which 66% are white and 29% are Hispanic or Latino per the U.S. Census Bureau. Over 94% of residents are high school graduates and 26% of the population is 65 years or older. The median household income is \$94,000 and 60% of housing is owner-occupied. However, approximately 10% of residents are living in poverty, compared to 11.6% national average. The CMS development engaged with the diverse population of Healdsburg and worked to develop climate solutions that are appropriate for this community.

The City of Healdsburg is unique for a small city, operating its own electric, water, and wastewater systems. The City also has its own public airport, golf course, senior center, and public event center. The City operates two open spaces at Fitch Mountain and the Ridge comprising of 320 acres of protected land. These unique community characteristics provide climate action opportunities that may not be possible in other communities. When asked at the beginning of the CMS development process, Healdsburg residents shared that the aspects of the community valued most are the small-town, safety, and natural environment. The CMS seeks to maintain these values and leverage these opportunities with solutions that are impactful and feasible in Healdsburg.

Healdsburg and its residents have not been immune from the impacts of climate change. In the last five years the City has experienced extreme drought conditions, flooding, and wildfires, including experiencing a full city evacuation and public safety power shutoff (PSPS) for the Kincaide Fire in 2019 and a partial evacuation and citywide evacuation warning for the Walbridge Fire in 2020.

### Past Sustainability Progress

The City of Healdsburg has been committed to increasing sustainable operations and policies for many years and has a highly engaged community committed to reducing GHG emissions throughout the community. For example, the City recently adopted the Electrification Reach Code requiring new

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<sup>1</sup> The State carbon neutrality goal established by Assembly Bill 1279 considers carbon neutrality to be at least an 85 percent reduction in GHG emissions with the remaining fraction achieved through removals such as carbon sequestration.

buildings to use electric space and water heating and has had great success with reducing the amount of organic waste going to the landfill through free compost bin giveaways and community engagement. Additionally, Healdsburg Electric is continually expanding their contracts with renewable and carbon free energy sources to decarbonize the electricity delivered to Healdsburg.

GHG inventories have been completed by RCPA for Healdsburg for 2015, 2016, 2018, and 2020 to track and understand the City’s emissions and sources. The City has adopted numerous community planning documents, including the City of Healdsburg General Plan, 2020 Strategic Plan, Healdsburg Community Base Transportation Plan, and Healdsburg Bicycle & Pedestrian Master Plan, that include a number of policies, goals, and projects that are focused on improving sustainability within the city and contribute to the reduction of GHG emissions.

## 1.2 Climate Mobilization Strategy Development Process

### Process

The CMS was built off the previously completed GHG emissions inventories prepared by RCPA and included development of future GHG emissions forecasts and analysis of GHG emission reduction targets in support of state and regional reduction goals. After the targets were analyzed, GHG emission reduction measures and supporting actions were designed based on the success of the work done previously in the City, current best practices, and community recommendations. The measures were refined based on City staff, stakeholder, and community feedback, to establish a list of priority projects and measures.

### A Community-driven Process

#### *CMS Engagement*

- 3 CMS Community Events
- 6 Stakeholder Meetings
- 3 Surveys
- 1 Climate Fest Booth
- Multiple “Pop Up” Booths

To help track successful implementation and progress monitoring, key performance indicators (KPIs) were established as benchmarks for the CMS. A streamlined implementation plan for the next 1-3 years, outlined in Chapter 5 and presented in Appendix D, was developed to track and monitor the City's progress implementing measures and action and towards achievement of the established targets. The final step of this process involves public review and adoption of the CMS. Figure 1 illustrates the CMS development process.

**Figure 1 CMS Development Process**

Developing a comprehensive strategy to tackle climate change requires collaboration among various stakeholders, community members, decision-makers, and City staff. By working together and with ongoing engagement events throughout the process, a plan that is representative of the needs and the desires of the community at large was developed.

### Community Feedback

A key goal of the CMS was to be a community-driven process. To gain as much input from a diverse set of community members, the City hosted 4 key CMS community events that were open to the community members and advertised using multiple outreach methods. Events were hosted in person, virtually, and throughout the year to provide many opportunities for community engagement and feedback. The City partnered with Corazon Healdsburg to facilitate each of the events in Spanish, helping the diverse voices of the community to be heard throughout the process. The City also hosted stakeholder group meetings, including with Climate Action Healdsburg, Healdsburg Chamber of Commerce Government Affairs Committee, Healdsburg Rotary Club, Healdsburg Senior Center, and Healdsburg High School Eco-Art Club. Event development was dynamic, taking feedback from each event and adjusting accordingly to increase access and engagement.

Additionally, the City issued three surveys with the goal of gaining an understanding of the community's current interest and concerns surrounding climate change, and what projects and actions the community would like to see the City prioritize to reduce impacts of climate change, while retaining the character of the City. The first survey received over 260 responses, with 256 English response and 12 Spanish responses. The second survey received approximately 460

responses, 106 of which were in Spanish, and additional 65 responses received from the Climate Fest Activity.

Changes were made based on the feedback received from the community, staff, and Council during the document review process. The changes made in response to public and Council comments will be flagged in the final adopted version of the CMS.

Community insight is incredibly valuable for this process as it confirms that the CMS aligns with the specific needs and aspirations of the people it aims to serve. The main outreach and engagement events that were completed as part of this project can be found in Table 1. See Appendix C for additional details.

**Table 1 Summary of Outreach and Engagement Events**

Meeting Topic	Event	Date
Community Kickoff	Community Workshop	December 12, 2022
Input on Climate Mobilization Strategy Survey	Community Input Survey	December 12, 2022 – January 31, 2023
Climate Mobilization Strategy Update – Forecast, Targets, and Initial Strategy Workshop	Virtual Community Workshop	March 1, 2023
	Spanish Watch Party/ Workshop	March 1, 2023
Climate Fest Earth Day Booth	Community Pop-up Event	April 22, 2023
Strategy Prioritization Survey	Community Input Survey	April 22, 2023 – May 21, 2023
Community Workshop – Proposed Measures and Actions Workshop	Community Workshop	July 26, 2023
Final Strategy Survey & Public Review of CMS	Community Input Survey	August 22, 2023 – September 10, 2023

## City Collaboration

The CMS will be implemented across all the city departments and the community. Success with implementation and achievement of the GHG reduction targets will require coordination and cooperation between different city departments and commitment and effort from all levels of the city's administration. The development of the CMS was led by the City Manager's Office and developed through an integrated partnership between City staff from all departments, including Community Development, Public Works, Community Services, and Utilities. To ensure practicality and effectiveness, the goals and measures presented in the CMS were developed in close collaboration with department heads. This approach ensured that the measures were feasible and that the proposed actions provided a clear roadmap to address potential barriers to implementation. By incorporating insights from City departments, the CMS struck a balance between community preferences and the City's operational capabilities.

## 2 Scientific Context for Climate Change

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Climate change is the observed increase in the average temperature of the Earth’s atmosphere and oceans along with other substantial changes in climate intensity (such as wind patterns, precipitation, and storms) over an extended period of time. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. However, scientists have observed acceleration in the rate of warming during the past 150 years. Per the United Nations Intergovernmental Panel on Climate Change (IPCC), the understanding of anthropogenic warming and cooling influences on climate has led to a high confidence (95 percent or greater chance) that the global average net effect of human activities has been the dominant cause of warming since the mid-20th century.<sup>2</sup>

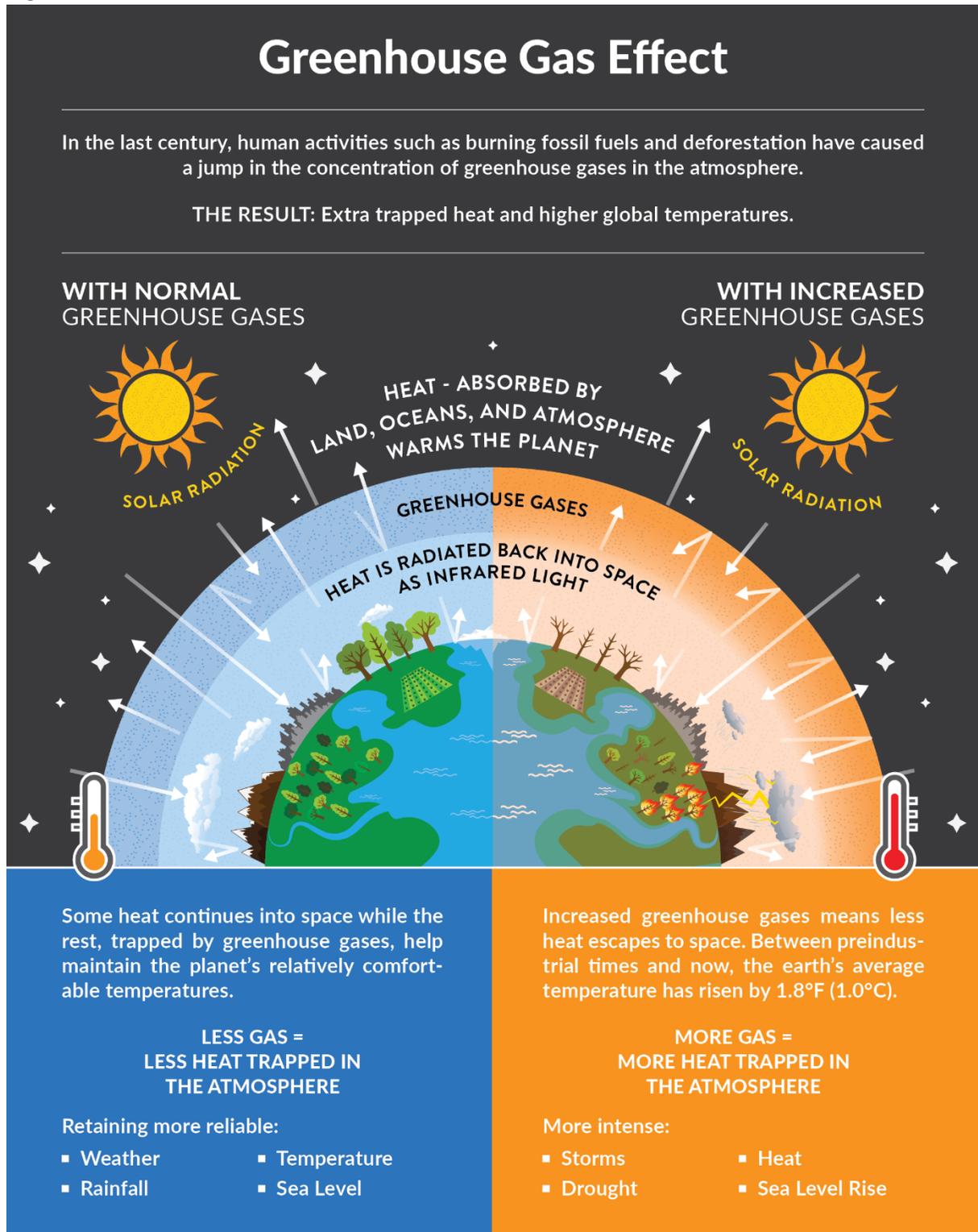
### 2.1 Background on Greenhouse Gas Emissions

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). The accumulation of GHGs in the atmosphere regulates the earth’s temperature is known as the “greenhouse gas effect”. The greenhouse effect, shown in Figure 2, is integral to sustaining life on Earth. However, human activities emit GHGs more than natural ambient concentrations, thereby contributing to the enhancement of the natural greenhouse effect. This enhanced greenhouse effect contributes to global warming, an accelerated rate of warming of Earth’s average surface temperature. More specifically, by burning fossil fuels to power homes, businesses, and automobiles, we increase the amount of GHGs emitted into the atmosphere, which, in turn, leads to increased absorption of infrared radiation by the Earth’s atmosphere and increasing temperatures near the surface.

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<sup>2</sup> SAR Climate Change 1995: The Science of Climate Change — IPCC

Figure 2 Greenhouse Gas Effect



## Types of GHGs

The United Nations Intergovernmental Panel on Climate Change's (IPCC) list of GHG emissions include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), as well as chlorofluorocarbons, hydrochlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, which are collectively called fluorinated gases.<sup>3</sup> Fluorinated gases are man-made gases that can stay in the atmosphere for centuries and contribute to the GHG effect. Ninety-seven percent of the annual GHG emissions generated in the United States consist of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O,<sup>4</sup> while fluorinated gases<sup>5</sup> result in the remaining three percent of emissions. Most fluorinated gases come from industrial sources, of which there are relatively few in Healdsburg. Due to CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O comprising the large majority of GHG emissions in Healdsburg, the CMS focuses on these three gases for its GHG emissions inventory, forecast, and reduction strategy, consistent with the ICLEI – Local Governments for Sustainability's U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions (Community Protocol).

Each type of GHG has a differing ability to trap heat in the Earth's atmosphere over a specified timescale (generally, 100 years), referred to as the gas's global warming potential (GWP).<sup>6</sup> The reference point to compare the potential impact of different GHGs is CO<sub>2</sub>, and therefore CO<sub>2</sub> has a GWP of 1, whereas CH<sub>4</sub> has a GWP of 28. This means that each metric ton (MT) of methane causes 28 times more warming than 1 MT of CO<sub>2</sub>. Even more potent, N<sub>2</sub>O has a GWP of 265, or 265 times the GWP of 1 MT of CO<sub>2</sub>.<sup>7</sup>

## Sources of GHGs

GHGs are emitted by both natural processes and human activities. 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 largely by-products of fossil fuel combustion, whereas CH<sub>4</sub> results from off-gassing associated with agricultural practices and decomposition of organic waste in landfills. These activities release GHGs into the atmosphere and contribute to climate change. With the accelerated increase in fossil fuel combustion and deforestation since the Industrial Revolution of the 19th century, concentrations of GHG emissions in the atmosphere have increased exponentially. The United States Environmental Protection Agency (U.S. EPA) tracks the country-wide emissions and publishes an annual report: Inventory of U.S. Greenhouse Gas Emissions and Sinks.<sup>8</sup> The Inventory of U.S. Greenhouse Gas Emissions and Sinks is a comprehensive account of total GHG emissions for all man-made sources in the U.S. including CO<sub>2</sub> removal from the atmosphere by "sinks," (e.g., through the uptake of carbon and storage in forests, vegetation, and soils) from management of lands in their current use, or as lands are converted to other uses. In 2020, the most recent year in which GHG emissions have been calculated nationally, emissions in the U.S. totaled 5,222 million metric tons (MMT) of CO<sub>2</sub>e after accounting for sequestration from the land sector. Emissions decreased from 2019 to 2020 by 11

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<sup>3</sup> <https://www.c2es.org/content/main-greenhouse-gases/>

<sup>4</sup> <https://www.wri.org/blog/2020/02/greenhouse-gas-emissions-by-country-sector>

<sup>5</sup> Fluorinated gases, which includes four main types: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>), are man-made gases that can stay in the atmosphere for centuries and contribute to the GHG effect.

<sup>6</sup> <https://www.ipcc.ch/assessment-report/ar5/>

<sup>7</sup> <https://www.ipcc.ch/assessment-report/ar5/>

<sup>8</sup> <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

percent due to the COVID-19 pandemic, however, preliminary estimates show that emissions rebounded in 2021 after the height of the pandemic.<sup>9</sup>

## **Effects of Climate Change**

In California, the impacts of climate change are already being felt, and will continue to become more severe throughout the twenty-first 21st century. Higher temperatures, more extreme heat events and wildfires, and rising sea levels are all effects of climate change experienced in California. The California Office of Environmental Health Hazard Assessment reported in 2018 that despite annual variations in weather patterns, California has seen a trend of increased average temperatures, more extreme heat days, higher acidity in the Pacific Ocean, earlier snowmelt, and lesser rainwater runoff. From 1895 to 2011, average temperatures have increased by about 1.7° F statewide, and a smaller proportion of annual precipitation is falling as snow instead of rain. During 1972-2018, California experienced a fivefold increase in the annual area burned, largely attributable to climate change-induced atmospheric temperature rises.

Likewise, the City of Healdsburg is likely to face direct impacts from climate change. Elevated temperatures can harm agriculture, strain water resources, and heighten the risk of heat-related illnesses. Similar to other regions in California, Healdsburg is also vulnerable to more frequent and severe wildfires due to climate change where dry and hot conditions contribute to the spread of wildfires, posing risks to communities, ecosystems, and infrastructure.

While everyone will be impacted, the effects of these environmental hazards will vary depending on factors such as age, health, and socioeconomic status. The most vulnerable individuals will bear the greatest burden from the potential impacts of climate change. It is crucial that the development of this CMS benefits all community members and does not disproportionately burden or harm vulnerable populations.

## **2.2 Public Policy Context**

### **California Climate Policy**

California is recognized globally as a leader on climate change, having established a variety of ambitious GHG reduction targets and associated strategies. The primary policies that has driven statewide GHG emissions reductions are Executive Order (EO) S-3-05, Assembly Bill (AB) 32, Senate Bill (SB) 32, EO B-55-18, and most recently AB 1279. Signed in 2005, EO S-3-05 established statewide GHG emission reduction targets to achieve long-term climate stabilization as follows: by 2020, reduce GHG emissions to 1990 levels and by 2050, reduce GHG emissions to 80 percent below 1990 levels. In 2016, SB 32 set a target for achieving a 40 percent reduction in GHG emissions below 1990 levels by 2030. In 2018, EO S-3-05 was accelerated by EO B-55-18, which established a goal of achieving carbon neutrality by 2045 and was codified by AB 1279. Carbon neutrality refers to emitting net zero carbon emissions, which can be achieved by either eliminating all GHG emissions, or balancing carbon emissions with carbon removal (which can be achieved through carbon sequestration or carbon neutral technologies). AB 1279 requires the reduction in GHG emissions by

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<sup>9</sup>[https://www.google.com/search?q=US+emissions+increase+post+pandemic&rlz=1C1GCEB\\_enUS997US997&oq=US+emissions+increase+post+pandemic&aqs=chrome..69i57j33i160.3876j0j7&sourceid=chrome&ie=UTF-8](https://www.google.com/search?q=US+emissions+increase+post+pandemic&rlz=1C1GCEB_enUS997US997&oq=US+emissions+increase+post+pandemic&aqs=chrome..69i57j33i160.3876j0j7&sourceid=chrome&ie=UTF-8)

85% below 1990 levels by 2045. The remaining 15% of emissions would be removed via carbon removal technology or natural working lands.

To meet the state's 2045 goal of carbon neutrality, CARB recommends that local agencies long-term targets align with AB 1279. Specifically, CARB guidance is for jurisdictions to first strive to exceed the SB 32 targets of reducing GHG emissions 40% below 1990 levels, while establishing a policy framework to achieve the long-term target of carbon neutrality by 2045.

### **Other Key California Climate Policies**

California's GHG-emissions-reduction strategies that will help achieve these reduction targets are developed through its Scoping Plan updates and various Sustainable Communities Strategies passed by local Metropolitan Planning Organizations. Other important climate legislation that will help California achieve its GHG-reduction targets include the state's green building code (Title 24), SB 1383, which set targets for reducing organic waste to landfills, and SB 100, which mandated 100 percent carbon-free electricity by 2045.

### **Regional and Local Goals**

In March 2021, the Sonoma County Regional Climate Protection Authority (RCPA) adopted the Sonoma Climate Mobilization Strategy (SCMS) which establishes goals and strategies for Sonoma County to achieve carbon neutrality by 2030.<sup>10</sup> The SCMS is not a qualified GHG reduction plan under CEQA.

The SCMS defines carbon neutrality as achieving an 80% reduction in emissions from 1990 levels coupled with carbon sequestration to meet the remaining 20% of emissions removal to achieve carbon neutrality by 2030. The RCPA has also adopted a goal to achieve zero waste by 2030. In 2019, City of Healdsburg adopted a resolution to achieve zero waste by 2030, defined as diversion of 90% or more of waste from the landfill.

Other City policies include Climate Emergency Resolution in 2019 and a Low-Carbon Electricity Resolution in 2018.

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<sup>10</sup> <https://rcpa.ca.gov/wp-content/uploads/2020/12/Sonoma-Climate-Mobilization-Strategy-Adopted-2021-03-08.pdf>

## 3 GHG Emissions Levels

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An important part of the CMS process is the development of a GHG inventory. A GHG emissions inventory identifies the major sources and quantities of GHG emissions produced by community wide activities within a jurisdiction's boundaries for a given year. Estimating GHG emissions enables local governments to establish an emissions baseline, track emissions trends, identify the greatest sources of GHG emissions within their jurisdiction, and set targets for future reductions.

The CMS builds off the community wide 2018 GHG emissions inventory prepared by the RCPA. The 2018 GHG emissions inventory was used to establish a GHG emissions baseline for the CMS, forecast future GHG emissions trends, and identify the greatest sources of GHG emissions within their jurisdiction. The 2018 GHG emissions inventory identifies the major sources and quantities of GHG emissions produced by communitywide activities within Healdsburg's city limits (i.e., the Healdsburg General Plan planning area).

Emissions estimates were calculated using the International Council for Local Environmental Initiatives (ICLEI) methodologies, specifically, the United States Community Protocol for Accounting and Reporting Greenhouse Gas Emissions Version 1.2 (Community Protocol) is used for community-wide emissions. To allow for comparison among GHG emissions sources, all emissions are translated to the equivalent of one metric ton of carbon dioxide, or MT CO<sub>2</sub>e. One MT CO<sub>2</sub>e is the equivalent of using 113 gallons of gasoline or driving 2,492 miles in a standard combustion vehicle.<sup>11</sup>

### 3.1 Healdsburg GHG Emissions Inventory

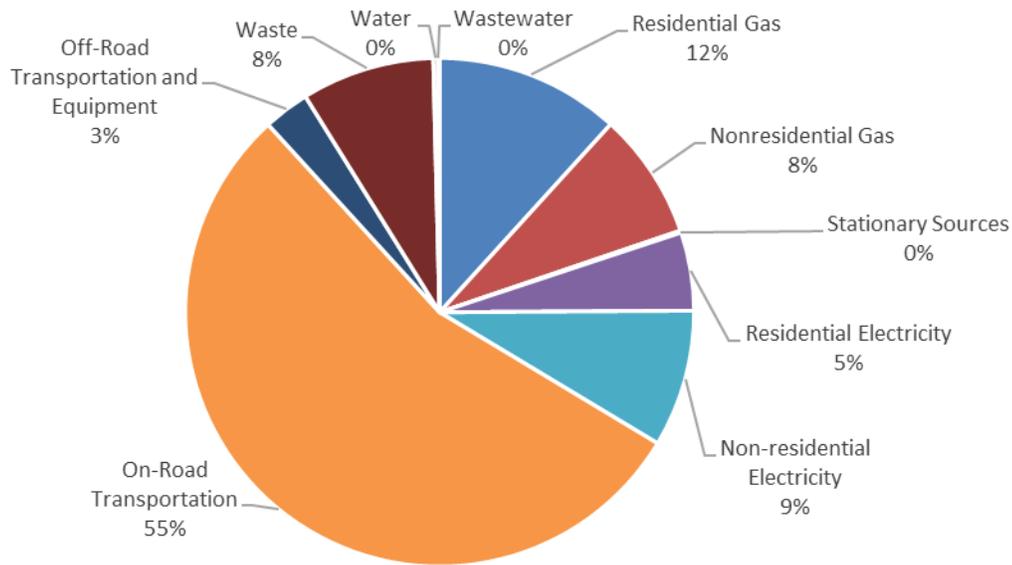
The 2018 GHG inventory prepared by RCPA was used to develop GHG emissions forecasts and GHG emission reduction targets for Healdsburg through 2045. Emissions from residential and commercial energy usage, on-road transportation, off-road transportation, landfilled waste, water, and wastewater were all included in the inventory. Healdsburg's total GHG emissions for 2018 were estimated to be 93,473 MT CO<sub>2</sub>e, as depicted in Figure 3. For more information on the data and methodologies used, refer to the Sonoma County Greenhouse Gas Inventory 2018 Update.<sup>12</sup>

According to the results of the 2018 GHG inventory, the largest source of GHG emissions in Healdsburg was from on-road transportation, which accounted for 55 percent of total emissions. The second largest source of GHG emissions was from natural gas usage in residential and non-residential buildings, combined to account for 20 percent of total emissions. Natural gas is used to heat water, homes, and businesses and to power gas-powered appliances. Electricity usage accounted for the third largest source of emissions, with residential and non-residential usage combining for a total of 14 percent of total emissions in Healdsburg.

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<sup>11</sup> <https://developer.epa.gov/greenhouse-gas-equivalencies-calculator-widget/>

<sup>12</sup> <https://scta.ca.gov/wp-content/uploads/2020/06/2018-GHG-Report-FINAL-9-25.pdf>

**Figure 3 Healdsburg GHG Emissions 2018 Inventory**

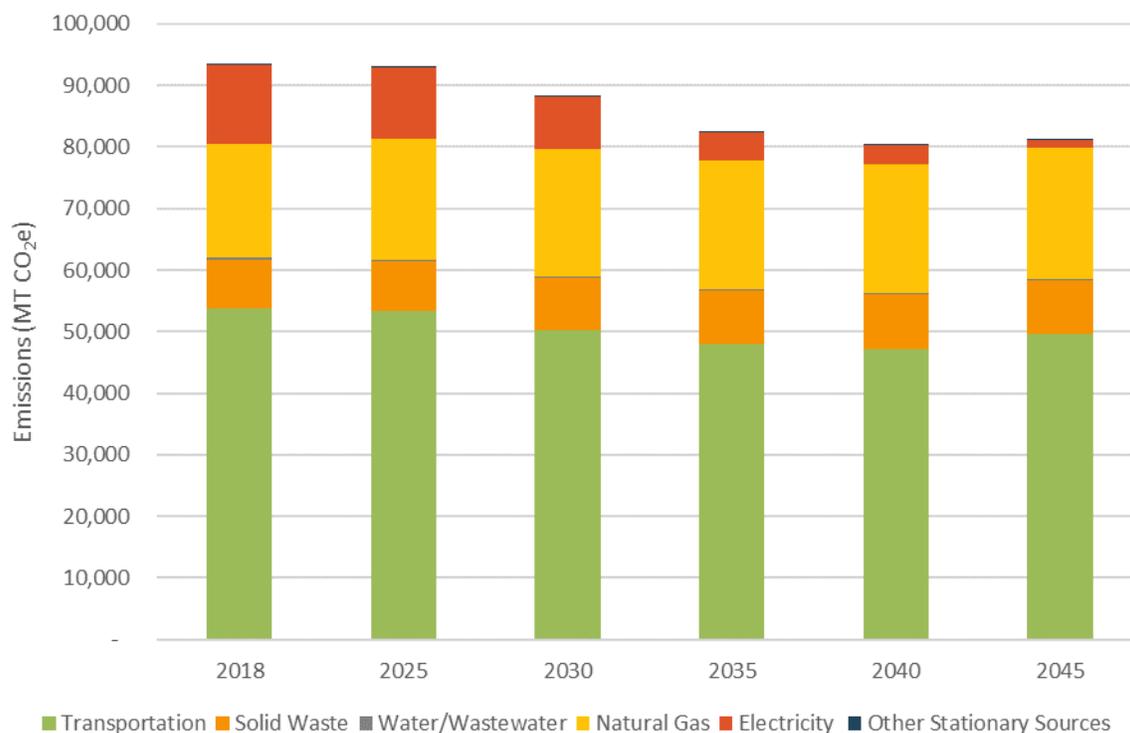
## 3.2 GHG Emissions Forecast

While GHG inventories provide data on Healdsburg’s current emissions, GHG-emissions forecasts (forecast) estimate the city’s projected GHG emissions into the future. Forecasts are developed from the most recent GHG inventory and provide an estimate of how Healdsburg’s emissions might change over time based on demographic projections, including population, employment, housing, and transportation activity data. Although the most recently prepared GHG emissions inventory for the city is the 2020 emissions inventory, the activity data for the year was impacted both by a wildfire at the geothermal plant impacting energy emissions and by COVID-19 which significantly changed community behaviors including energy use and transportation. Due to these anomalies, the 2018 GHG emission inventory was selected to serve as the baseline for the forecast as it is considered the most recent emission inventory representative of typical conditions in the community.

A GHG emissions forecast was developed to estimate future GHG emissions within the city through 2045. It was developed based on the growth and demographic projections used in the RCPA Climate Action Plan 2020, the CA Dept of Finance projections on population growth, and the Regional Housing Needs Allocation (RHNA) for the 2023-2031 housing cycle. The forecast also accounts for current and future legislative actions from the state government, such as SB 100, Title 24 building energy efficiency standards, and transportation legislation. More information on these regulations and how they were accounted for in the forecast can be found in Appendix A.

Healdsburg’s forecast projects the community’s GHG emissions will decrease through 2030 and continue to decrease, but at a slower rate, through 2045. This is due to State legislation, including Title 24 and California’s GHG vehicle emission standards, being fully phased in and then being offset by population and job growth. A summary of Healdsburg’s GHG forecast through 2045 is shown in Figure 4.

**Figure 4 Healdsburg GHG Emissions Forecast, 2018 – 2045**



### 3.3 Healdsburg GHG Emissions Goals

GHG reduction targets are used to establish measurable metrics intended to guide the community’s commitment to achieve GHG emissions reduction and help gauge progress with reducing emissions over time. GHG targets are developed relative to a baseline emissions level. California has established Statewide GHG reduction goals for 2030 and 2045. The State has encouraged communities to adopt their own plans consistent with these goals in the CARB 2022 Scoping Plan. Thus, local agencies are recommended to establish at a minimum, equivalent reduction targets at the local level by establishing community wide GHG reduction goals for climate action that will help California achieve its 2030 and 2045 GHG emissions goals.

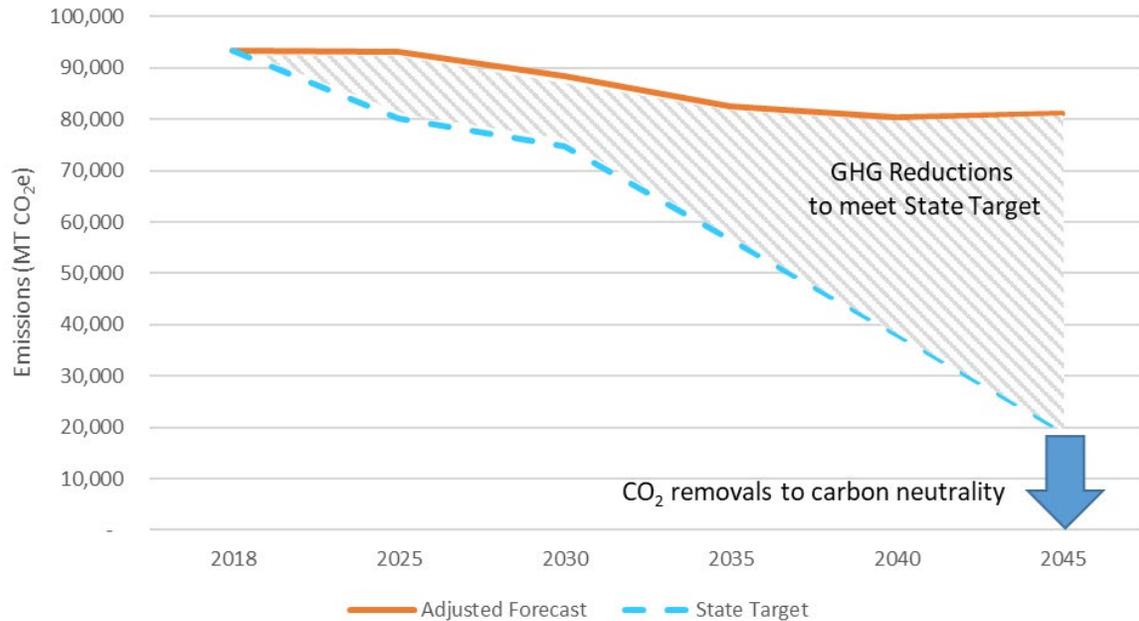
The RCPA has set a regional goal to achieve carbon neutrality, an 80 percent reduction in GHG emissions with 20 percent carbon sequestration, for Sonoma County. This CMS establishes an efficiency target of 40 percent reduction in GHG emissions per capita from 1990 levels in alignment with state goals, and in support of the RCPA goal recognizing that the City alone is not able to meet a carbon neutrality goal by 2030.<sup>13</sup> The pathway to achieve Healdsburg targets in alignment with the state’s targets is shown in Figure 5. The emissions gap between the forecast and the target pathway represent the amount of GHG emissions that Healdsburg is committed to reducing through local GHG reduction strategies and projects. As shown in Table 2, the state’s efficiency target requires reducing emissions by 1 MT CO<sub>2</sub>e per capita by 2030 and working towards carbon

<sup>13</sup> Efficiency targets have been recommended in the CARB Scoping Plan as an appropriate target that normalizes GHG emissions to population changes.

neutrality by 2045. Based on the forecasted population in 2030 and 2045 this translates to a mass emissions reduction of approximately 13,636 MT CO<sub>2</sub>e and 81,219 MT CO<sub>2</sub>e, respectively.

In areas where there is substantial community and Council support, as well as staff resources and budget, the City will seek to exceed the state’s efficiency target. This CMS is expected to achieve a 31,675 MT CO<sub>2</sub>e reduction if fully implemented by 2030.

**Figure 5 Healdsburg GHG Emission Reduction Goals**



**Table 2 GHG Emissions Target Pathway**

Metric	2025	2030 <sup>2</sup>	2035	2040	2045 <sup>3</sup>
Population <sup>1</sup>	12,025	12,746	12,882	13,018	13,127
Per Capita Adjusted Forecast (MT CO <sub>2</sub> e per capita)	7.7	6.9	6.4	6.2	6.2
<b>State Emissions Target and Gap</b>					
Per Capita State Targets (MT CO <sub>2</sub> e per capita)	6.7	5.9	3.9	2.0	0.0
State Efficiency Emissions Target (Pathway) (MT CO <sub>2</sub> e)	80,240	74,746	50,362	25,447	–
Remaining Emissions Gap from State targets (MT CO <sub>2</sub> e)	12,881	13,636	32,224	54,927	81,219

Notes: MT CO<sub>2</sub>e = Metric tons of carbon dioxide equivalent; N/A = not applicable

Emissions have been rounded to the nearest whole number and therefore sums may not match.

<sup>1</sup> Population projections for the GHG inventories (1990,2010, 2015, 2018) and forecasted population projections obtained from CA Dept of Finance, RCPA Climate Action Plan 2020.

<sup>2</sup> The RCPA has set a target to exceed the states target by reaching carbon neutrality by 2030 and urges cities within Sonoma County to adopt a similar target. City of Healdsburg is in support of the RCPA goal, but has established a target in alignment with the states 2030 target established by SB 32.

<sup>3</sup> Under AB 1279 it is anticipated that to reach carbon neutrality by 2045 approximately 85% of the reduction would be achieved through direct reduction of emissions in the community while the remaining 15% would be achieved with carbon removal.

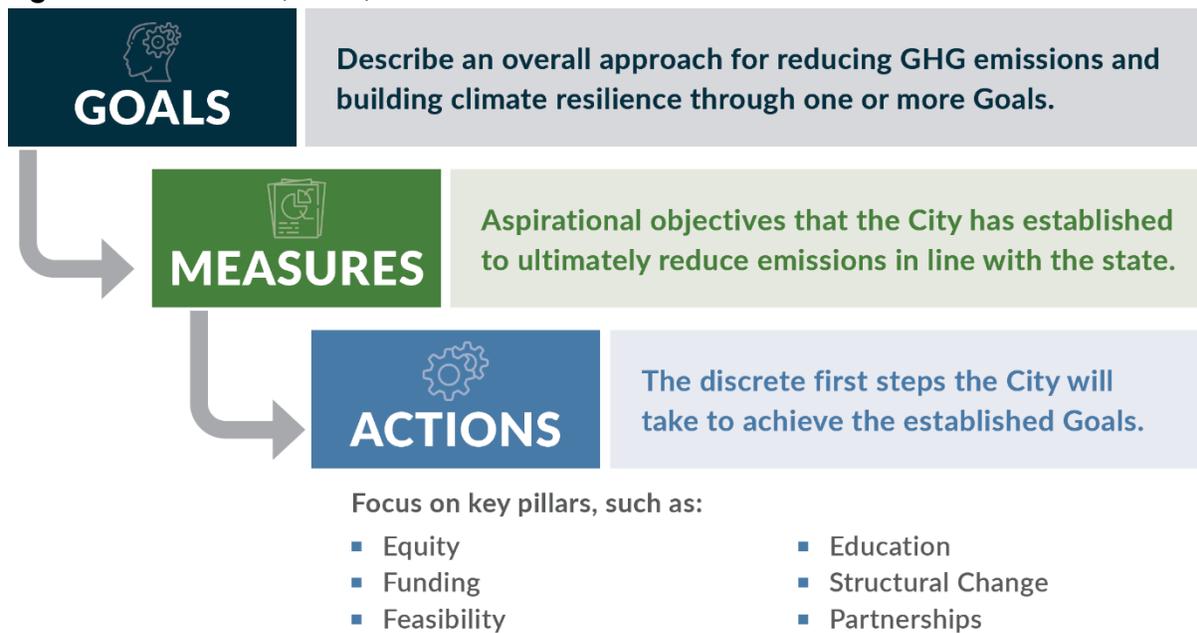
# 4 GHG Emission Reduction Strategy

## 4.1 Strategy Development

The CMS sets forth a roadmap for how the City will reduce GHG emissions in the near term to meet the established 2030 goals and make progress towards carbon neutrality in 2045. This CMS builds upon Healdsburg’s previous efforts with actions that are equitable, achievable, and implementable. The measures and actions in the CMS were developed through a collaborative process between City staff, the City Council, key stakeholders, and the community.

The following sections detail the City’s mitigation strategies and the considerations made to develop them. The measures identify specific goals (i.e., Healdsburg activity data targets by 2030) within each sector that will contribute to the overall GHG reduction goal. The measures are organized into sectors, which relate to the specific area to which the strategies and actions pertain. These include Building Energy, Transportation, Solid Waste, Water and Wastewater, and Carbon Sequestration. Each measure also has supporting actions, which consist of the specific steps that the City will take in support of the strategies. Actions identify the supportive programs, policies, financial pathways, and other commitments that will accomplish a measure goal. The Actions should be viewed as the steps to implement the goal. Figure 6 depicts the structure of the CMS measures, goals, and actions.

**Figure 6 Measure, Goal, and Action Structure**



*Over time, the Strategy will be reviewed, and additional actions will need to be added to make greater progress on the established Goals. This Climate Mobilization Strategy serves as the City’s first step in climate planning and will continue to be refined.*

### Key Strategy Attributes

In general, measures are designed to encompass six key attributes that are essential to effective climate policy implementation. Together, these specific key attributes have been identified to be specific community impact areas that together will activate or guide the buildout of actions for each

measure. In general, the actions under a single measure should collectively address all the key attributes. The key attributes include:

- **Structural Change:** Establishing a program/policy/ordinance that will allow the City to reach the target that we have within a measure (e.g., ordinance or code)
- **Education:** To support a structural action we want to get community buy in and promote the existence of the program and educate stakeholders (e.g., educational events or materials)
- **Equity:** Actions that engage and consider vulnerable communities (low-income families, fixed-income seniors, agricultural workers, etc.) that may experience secondary impacts or not benefit directly from the measure's objective (e.g., actions that ensure the overall community benefit)
- **Feasibility Studies:** Used to understand more about the details/obstacles/feasibility or implementation of a program (e.g., analysis necessary to identify the best path or the feasibility of implementing a specific measure)
- **Funding:** The financial backing to get a program going – a dive into grant funding or financing opportunities (e.g., grants or rebates that help pay for the implementation of a measure, funding to adequately staff the program)
- **Partnerships:** Looking at outside non-profits or agencies that can help with implementation of a measure's actions (e.g., community organizations that are best positioned to move a measure forward consistently or sustainably)

## Co-benefits

The City's commitment to reduce GHG emissions means the community will benefit from various co-benefits that will have lasting positive impacts on the community residents and in helping Healdsburg preserve their character, including improved public health, new opportunities for economic growth and resilience, connected communities, increased adaptive capacity, and greater energy-supply security. The co-benefits identified for each CMS Measure include:

- **Environmental Quality:** Enhancing urban natural environments safeguards biodiversity and ecosystem services, such as cleaner air and water. Healthy ecosystems mitigate pollution, provide species habitat, and offer recreational spaces for the community. They also assist in managing extreme weather effects by absorbing rainwater and reducing strain on the City's infrastructure. Overall, increasing green spaces, reducing air pollution, and water pollution enhances the community's quality of life.
- **Preserve Community Character:** Healdsburg residents strongly value the small-town feel of the City and community connectivity. Creating opportunities for community members to engage in public life and build connections to their neighbors promotes a tightly-knit City with a strong sense of community.
- **Public Health and Safety:** Reduction in use of fossil fuels in vehicles and homes improve air quality and public health. Increasing access to a safe and well-connected active transportation network can also lead to healthier communities.
- **Energy Resilience:** Certain GHG reduction strategies can also yield resilience benefits, and the reverse is true as well. For instance, enhancing local energy storage and power generation can improve energy resilience, ensuring uninterrupted access to affordable energy from local sources.

## Equity Guardrails

Integral to sustainability planning is ensuring that the impacts, co-benefits, and opportunities associated with developed strategies are equitably distributed amongst the community and that additional burdens on vulnerable communities are avoided. The City of Healdsburg defines vulnerable communities as follows:

- Vulnerable community: an area with concentrated populations of fixed-income seniors, persons with a disability, and lower income residents.<sup>14</sup>

Such communities are often disproportionately affected by the impacts of climate change and the burdens of sustainability actions. For this reason, they must be engaged, represented, and prioritized during the planning process. This kind of equitable community planning, can help cities design safe, thoughtful, and specific policies that improve public health across the community, provide equitable job opportunities and better incomes, and minimize disproportionate burdens. Altogether, equitable community planning provides a strong foundation for realistic sustainability initiatives to be developed and implemented by the community.

Establishing equity guardrails act as minimum standards that must be met for any measure to be considered. The equity guardrails are developed based on specific community concerns and help distil the diverse and higher-level discussions about equity into a mechanism that can be used to inform policy and create concrete change. Each Measure included in this CMS was reviewed for each criterion to determine if its associated actions would result in disproportionate burdens, inequities, or discrimination in the City. If determined it could, the measure was updated to ensure the actions instead benefited the community members that have the most to gain. Following are the equity goals/guardrails used in the drafting of the measures and actions in this document.

**Table 3 Equity Guardrail Criteria**

Equity Guardrails	Description
Integrate Health and Safety	Ensure each Measure provides access to health, safety, and comfort benefits associated with the CMS by prioritizing access for vulnerable communities.
Equitable Economics	Ensure each Measure establish funding and financing opportunities that are designed for and can be accessed by vulnerable communities and that additional financial burdens on these groups are avoided.
Provide Social and Cultural Support	Ensure each Measure includes access to information and materials and meaningful support for vulnerable communities. This may involve the addition/expansion of programs in partnership with community-based organizations that educate, engage, provide resources, and respond to barriers.
Affordability and Anti-displacement Potential	Ensure each Measure contains guardrails to protect vulnerable communities from displacement and increased cost of living.
Continued Investment and Engagement	Ensure each Measure includes specific mechanisms for continued investment in and engagement with vulnerable communities throughout implementation of the CMS to address any identified barriers as well as unforeseen equity barriers that may arise as the CMS is implemented.

<sup>14</sup> Definitions sourced from the General Plan’s Community Health & Environmental Justice Element.

## Cost Assessment

Determining cost for measures is a complex process that involves an evaluation of capital cost, marginal cost, cost of inaction, change in cost overtime, and return on investment. Variability in implementation costs depends on the Goals identified, their level of specificity, and the accompanying funding and financing strategies. Costs may vary from capital-intensive investments, like the installation of bike infrastructure to encourage alternative means of transportation, to less capital-intensive but more staff-intensive investments, like conducting outreach and education campaigns to increase organic waste diversion. Additionally, costs can be categorized as internal or external costs where internal costs are those felt by the City (aka. municipal costs) while external costs are those felt by the residents and businesses (aka. community costs). These costs have been broken down into three categories presented Table 4. Each Measure in the following section includes the overall cost category for the City and Community. For a complete description of cost considerations for the Measures and Actions see Appendix B.

**Table 4 Cost Categories**

Cost Category	City	Community
No-Cost	Goals associated with operational changes that do not include new upfront costs or result in zero lifecycle costs. <ul style="list-style-type: none"> <li>Continuing existing programs</li> </ul>	Goals associated with changes that do not include new upfront costs or result in zero lifecycle costs. <ul style="list-style-type: none"> <li>Switching transportation modes from single occupancy vehicles to active transportation.</li> </ul>
Low-Cost	Goals associated with low upfront costs and will only require staff time to implement, such as: <ul style="list-style-type: none"> <li>Developing partnerships</li> <li>Policy Updates</li> <li>Community Outreach</li> </ul>	Goals associated with low upfront costs compared to existing alternatives, such as: <ul style="list-style-type: none"> <li>Additional energy bill costs for renewable energy compared to fossil fuel-based energy</li> </ul>
Moderate-Cost	Goals associated with moderate upfront costs to the City and require moderate capital costs or consultant time along with staff time, such as: <ul style="list-style-type: none"> <li>Feasibility Studies</li> <li>Incentive and Compliance Programs</li> <li>Pilot Projects</li> </ul>	Goals associated with moderate upfront costs that are not comparable to existing costs nor are offset over lifetime, such as: <ul style="list-style-type: none"> <li>New fees from utilities or city taxes</li> <li>Upfront costs partially offset by rebate opportunities</li> </ul>
High-Cost	Goals associated with high upfront costs and require substantial investments into infrastructure and technology system upgrades, such as: <ul style="list-style-type: none"> <li>Bike Lanes</li> <li>Energy Storage Systems</li> <li>EV Charging Networks</li> </ul>	Goals associated with high upfront costs that are not comparable to existing cost nor are offset over lifetime, such as: <ul style="list-style-type: none"> <li>New electric vehicle purchase prior to existing vehicle replacement</li> </ul>

## Community and City Feedback

Measures and actions were developed based on best practices to achieve GHG emission reductions from the 2018 levels used to develop Healdsburg’s GHG forecast. Specific measure goals for GHG reduction were set based on community, City staff, City Council, and stakeholder input. Feedback from the community was received through three workshops, a pop-event, and three surveys. In addition to community engagement, the City hosted several small group meetings with community organization stakeholders to hear specific feedback on the CMS and strategies developed. The surveys and events were designed to understand what the community was most concerned about

with climate change and the sectors to be prioritized, as well as the type of strategies to be pursued through the CMS and of those strategies the way to implement the strategies through specific actions. Feedback was analyzed both quantitatively and qualitatively to inform the final list of measures and actions in this document. Throughout this process, the community was informed through advertisements and community events of the progress of the CMS, including the results of the GHG emissions analysis, a cost assessment of the proposed measures and actions, and provided a draft of the document for public review and feedback prior to the document being taken to Council.

The strategies were developed through cross-departmental collaboration where feasibility, priorities, and barriers for implementation are considered and accounted for in the measure goals and actions contained in this CMS. Draft measures and actions were taken to City Council to hear and incorporate feedback throughout the process.

## 4.2 Measures

The measures are organized by sector (e.g., Building Energy, Transportation, Waste, Water & Wastewater, Carbon Sequestration, and Administration). Each topic identifies the measures and goals the City will strive to meet by 2030.

Each measure includes a description of the measure that provides background on the measure and considerations for implementation, as well as a summary table that includes the specific actions that make up the measure, and several additional details such as GHG reduction potential, cost, co-benefits, and KPI(s) to measure progress of implementation. Figure 7 provides an overview of how to read this section.

**Figure 7 How to Read this Section**

**MEASURE GOAL**  
Identifies specific objective to achieve

**MEASURE DESCRIPTION**  
Summary of measure and provides background information and implementation considerations associated with measure.

**ACTION INFORMATION**  
Identifies and defines what the City will do and what pillar the action supports.

**IMPLEMENTATION INFORMATION**  
Identifies the expected GHG reductions from full measure implementation, relative cost and cost-effectiveness, co-benefits associated with measure, and the KPIs to track progress.

Measure T-5: Increase commercial zero-emission vehicle use and adoption to 40% by 2030.

The state has adopted several rules and programs focused on accelerating the penetration of commercial ZEVs, including the Innovative Clean Transit regulation, the Advanced Clean Trucks regulation, and the Advanced Clean Fleet rule. The Advanced Clean Truck rule adopted in June of 2020, requires truck manufacturers to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024, and establishing a target for every new truck sold in California to be zero-emission by 2045. In 2023, CARB approved the Advanced Clean Fleets regulation, which requires a phased-in transition toward zero-emission medium-and-heavy duty vehicles for government, public, and private fleets. To accelerate commercial electric vehicle adoption in the City, the City plans to actively identify and engage businesses/employers with vehicle fleets to accelerate ZEV adoption. Actions supporting this measure are detailed below in Table 15.

Action Number	Pillar	Action
T-5.1	Feasibility Studies	Inventory commercial vehicle fleets in Healdsburg and identify employers to target for accelerating zero emission vehicle adoption. Develop a plan for City-supported accelerated fleet electrification.
T-5.2	Structural	Adopt a ZEV plan for commercial vehicles in line with state targets and in line with the findings of the accompanying feasibility study. Work with stakeholders to develop and implement the plan for City-supported accelerated fleet electrification. As part of the plan, identify opportunities for accelerated fleet electrification and promote zero-emission vehicle (ZEV) adoption within business and municipal fleets.
T-5.3	Education/ Partnership	Provide information to businesses on state and federal programs to help fund conversion of commercial fleets to zero emissions vehicles.
T-5.4	Equity/ Funding	Identify, implement, and connect vehicle fleet owners, particularly those serving vulnerable communities to incentivize vehicle electrification. This could include local tax breaks.
T-5.5	Funding	Secure funding from state programs (such as the California Air Resources Board's Clean Vehicle Rebate Project and the Truck and Bus Voucher Incentive Program) and federal sources to increase procurement of EV or ZEV cars, trucks, and other vehicles and installation of EV/ZEV charging/fueling infrastructure.

Total GHG Emission Reductions from Measure: 2,000 MT CO2e

City Cost:	Low-Moderate
Community Cost:	Moderate
Cost Effectiveness:	Moderate
Co-Benefits:	Environmental Quality
KPI:	Commercial ZEV adoption (%)

## Building Energy

Building energy makes up approximately 34% of Healdsburg GHG profile. Of that, approximately 60% of building energy emissions are due to use of natural gas and 40% due to indirect emissions associated with electricity use. In California, the primary strategies for reducing building energy GHG emissions are decarbonization of the electricity grid and electrification of buildings. The State has implemented several regulations to decarbonize energy including Senate Bill (SB) 100 and SB 1020 aimed towards shifting the electricity grid to 100% renewable and zero-carbon power sources by 2045 and the Title 24 building code that is regularly updated to increase energy efficiency and accelerate the electrification of buildings.

*Measure BE-1: Procure 85% of electricity from renewable and zero-carbon sources by 2030 and 100% renewable and carbon-free no later than 2045.*

Emissions associated with electricity consumption are related to the source of power used to generate electricity (i.e., combustion of natural gas, solar, geothermal). Retail electricity providers, like Healdsburg Electric, are required by Senate Bill 100 to procure at least 60% of the electricity from eligible renewable energy sources (i.e., solar, wind, geothermal, small hydroelectric, and biomass) by 2030 and 100% eligible renewable resources and zero-carbon resources by 2045. Senate Bill 1020 establishes additional rules, requiring that 90% of the electricity mix be from eligible renewable resources or zero-carbon resources by 2035 and 95% by 2040. In 2022, the Healdsburg Electric community-wide electricity mix was 50% from eligible renewables (38% from geothermal, 10% from solar, 2% small hydroelectric), 15% from large hydroelectric, and 35% from fossil-fuel sources. More information about Healdsburg's power content is available at [healdsburg.gov/powercontent](https://healdsburg.gov/powercontent).

GHG emission reductions related to this Measure would result from exceeding state requirements (i.e., Senate Bill 100 and Senate Bill 1020) and removing the use of fossil-fuel powered electricity from the electricity mix. Switching an electricity grid to renewable and zero-carbon sources has significant GHG reduction potential, however, it does include significant investment and some supply and technological limitations. For example, certain renewable electricity sources such as solar and wind are zero-carbon and can be supplied in abundance, however, they are not consistently supplied through-out the day and the supply are often mis-matched with the demand straining the electricity grid. Renewable electricity sources such as geothermal and biomass are reliable and consistent sources of power, however, these sources generate a small amount of GHG emissions and there are capacity limitations in terms of maximum output of power supplied. Some solutions include diversifying the electricity grid to ensure electricity can be provided at all times when needed at a reasonable cost and installation or use of energy storage systems (e.g., battery banks). Recently completed renewable projects include the floating solar project at the Waste Water Reclamation Facility, Antelope Solar development, and contracts for small hydroelectric. Actions supporting this Measure are detailed below in Table 5.

**Table 5 Measure BE-1 Actions**

Action Number	Pillar	Action
BE-1.1	Feasibility Study	<p>Conduct electrification infrastructure and capacity feasibility studies. This would include:</p> <ul style="list-style-type: none"> <li>▪ Develop a long-range community-wide electric energy and demand forecast to estimate future usage and peak demands due to adoption rates of building and transportation electrification. Use the forecast to help inform the amount of new energy sources needed and system capacity improvements.</li> <li>▪ Formalize the City’s electric department long-range (ten-year) electric capital improvement plan with consideration for necessary infrastructure improvements to meet future demands.</li> <li>▪ Using the developed long-range energy and demand forecast, formalize a pathway (resource-plan) to meet the City’s energy needs and list of potential resources through 2045. Generation Resources may include a combination of local and remote generation sites as well as energy storage.</li> <li>▪ Prioritize and schedule projects for implementation.</li> </ul> <p>The energy forecast study and formalized plans should identify barriers for implementation of priority projects, as well as identify funding sources, impacts on rates, and partnerships needed for successful implementation.</p>
BE-1.2	Structural	<p>Develop a resolution that Healdsburg Electric will exceed the requirements of SB 100 and SB 1020 by 2030 where 85% of the electricity mix is sourced from eligible renewable sources and/or carbon-free sources. As part of this resolution include actions of:</p> <ol style="list-style-type: none"> <li>1. In setting the target establish valuation rankings for various generation types and projects.</li> <li>2. Consider the reliability and cost benefits of energy storage and/or demand response by 2030</li> <li>3. Continue to offer 100% renewable Green Rate with consideration that both the Standard and Green rates will reach the SB 100 goal of 100% renewable and carbon-free energy by 2045.</li> <li>4. Indicate that geothermal and other low-carbon eligible renewables will continue to be included in the overall electricity mix.</li> </ol>
BE-1.3	Partnership/ Funding	<p>Work with Lodi Energy Center (LEC) project participants to continue to advocate for and support the Department of Energy grant application to fund the LEC hydrogen-electrolyzer project. Identify and pursue other possible incentives or funding to transition facility to green hydrogen. This will reduce emissions of Healdsburg Electric electricity and increase reliability of the electricity source.</p>
BE-1.4	Partnership/ Education	<p>Work with community groups, local organizations, and NCPA to:</p> <ul style="list-style-type: none"> <li>▪ Engage with community to advertise/highlight the adoption of the resolution establishing the goal of achieving 85% renewable and/or carbon-free electricity by 2030 and 100% renewable and/or carbon-free no later than 2045. Provide information on the process for providing reliable electricity 24/7 year around and the importance of power sources to ensure the reliability of the electricity provided.</li> <li>▪ Provide information to the community on the importance of achieving this goal and how to meet this goal through city and community actions and involvement. This may include information on the benefits of local generation of renewable energy versus purchasing of Renewable Energy Certificates (RECs) to promote community installation and use of solar and battery storage to better achieve local carbon-free electricity community wide.</li> <li>▪ Implement a software solution for residents and businesses to view electric consumption data in near real time.</li> <li>▪ Include information on time of energy use as it factors into carbon intensity and how community members can capitalize on using electricity when it has the lowest carbon intensity (e.g., when to charge electric vehicles and when to run space heating and cooling). Work with industry experts to help with demand response planning,</li> </ul>

Action Number	Pillar	Action
		developing strategies to increase flexibility of the grid, and for informing consumers of carbon intensity of the electricity they are using to promote behavior change.
BE-1.5	Partnership/ Equity	Partner with community organizations to ensure low/moderate income households are aware of the CARE and State’s HEAP program to receive decreased electricity rates and provide technical assistance.
<b>Total GHG Emission Reductions from Measure: 2,171 MT CO2e</b>		
<b>City Cost:</b>		Moderate
<b>Community Cost:</b>		Moderate
<b>Cost Effectiveness:</b>		Moderate
<b>Co-Benefits:</b>		Environmental Quality, Public Health and Safety, Energy Resilience
<b>KPI:</b>		Change in Healdsburg Electric emission factor (%)

*Measure BE-2: Continue to adopt an Electrification Reach Code for all new residential and commercial buildings with each triannual code cycle. Update electrification ordinance to eliminate natural gas consumption in new construction for the 2025 California Building Standards Code and moving forward.*

The City of Healdsburg has already adopted an Electrification Reach Code that requires electric space and water heating appliances in all new residential and commercial buildings. The policy currently allows for natural gas cooking and decorative fireplaces. Heating appliances make up approximately 90% of the natural gas usage in buildings. The adjusted forecast projects that natural gas usage in the community due to new buildings would increase by approximately 7% without the implementation of this ordinance. As such, this ordinance has the potential to avoid an increase of ~7% of GHG emissions from new buildings. The GHG emissions associated with electricity usage in place of natural gas are driven by the emission factor of the electricity grid. The City also currently promotes energy efficiency and efficient electrification with rebates and informational resources. Actions supporting this Measure are detailed below in Table 6.

**Table 6 Measure BE-2 Actions**

Action Number	Pillar	Action
BE-2.1	Structural	Continue to enforce the Electrification Reach Code for the 2022 California Building Standards Code requiring electric space and water heating in new construction.
BE-2.2	Structural	In 2025 and every 3-years thereafter if not included within State building codes, revisit the building electrification ordinance to update the scope and reduce exemptions to align with industry technology advancements. As part of ordinance update, include the following scope changes: <ol style="list-style-type: none"> <li>1. Minimize the exemptions associated with the ordinance and continue to require the submittal of an infeasibility waiver to review specific end uses where electrification is technologically infeasible.</li> <li>2. Require that any end-use deemed infeasible for electrification exceed existing Title 24 energy efficiency standards and be electric ready for future electrification.</li> <li>3. Establish a zero NOx threshold.</li> <li>4. To limit stranded assets, work with developers and PG&amp;E to restrict construction of new natural gas lines for new construction.</li> </ol>

Action Number	Pillar	Action
		<ol style="list-style-type: none"> <li>5. Streamline permitting for battery storage for use as a demand response tool and resiliency in the event of power outage.</li> <li>6. Specify that affordable housing developments will be all-electric to ensure no stranded assets.</li> <li>7. Revisit substantial remodel and improvement definitions to be included in the ordinance.</li> </ol>
BE-2.3	Education	Engage with the community, key stakeholders, and local-based community organizations representing vulnerable communities to raise awareness about building electrification before revising the electrification ordinance. Emphasize the economic and environmental advantages of electrification and address concerns related to emergency response to minimize exceptions. Publicize the cost savings, environmental benefits, and flexibility of electrification through the City website and permit counters, targeting builders, property owners, and contractors.
BE-2.4	Partnership/ Equity	Engage with interested parties, both internal interested parties, such as City staff and officials, and external interested parties, such as local developers and community groups regarding the purpose and impact of the Healdsburg Electrification Reach Code and to identify and address equity concerns in policy implementation.
BE-2.5	Funding/ Equity	Engage with affordable housing developers to leverage incentives for new all-electric and efficient low-income residential buildings through the California Energy Commission Building Initiative for Low-Emissions Development (BUILD) Program and the Affordable Housing and Sustainable Communities (AHSC) Program. Regularly investigate and leverage other incentive programs available for electrification of new buildings.
<b>Total GHG Emission Reductions from Measure: 929 MT CO<sub>2</sub>e</b>		
<b>City Cost:</b>	Low	
<b>Community Cost:</b>	No Cost	
<b>Cost Effectiveness:</b>	High	
<b>Co-Benefits:</b>	Environmental Quality, Public Health and Safety, Energy Resilience	
<b>KPI:</b>	Share of new construction electrified (%)	

*Measure BE-3: Decarbonize residential building stock by 10% by 2030*

Residential buildings account for approximately 17% of Healdsburg’s total GHG emissions with 70% of residential building emissions attributed to natural gas consumption. Electrifying existing residential buildings requires the replacement of natural gas appliances with electric equipment. The GHG reduction potential of this strategy is dependent on the degree to which the existing residential building stock can be electrified. Actions that rely on voluntary replacement of electric equipment or ordinances requiring electrification at end-of-life replacements have been shown to reduce GHG emissions by approximately 10-30%, whereas the adoption of an end of natural gas flow date that requires all existing buildings to convert to electric equipment would eliminate all emissions associated with natural gas consumption in buildings. Since electric appliances are approximately three times more efficient than similar natural gas burning equipment and appliances, the use of electric equipment instead of natural gas would result in improved energy efficiency and a reduction in overall energy consumption for replaced natural gas equipment. The City currently promotes energy efficiency and efficient electrification with rebates and informational resources. This measure focuses on continuing activities to promote voluntary electrification of residential buildings as well as updating the building code to require electrification of existing residential buildings when triggered by specific thresholds. Actions supporting this Measure are detailed below in Table 7.

**Table 7 Measure BE-3 Actions**

Action Number	Pillar	Action
BE-3.1	Feasibility Study	Assess the feasibility and cost for electrification retrofitting as well as identify potential equity concerns/impacts. Identify the appropriate project threshold to require electric upgrades in order to electrify 10% of existing residential buildings by 2030. Establish the funding and financing requirements necessary to support the community in this transition.
BE-3.2	Structural	Continue to monitor the 9 <sup>th</sup> circuit court of appeals of the CRA vs City of Berkeley ruling. Once electrification costs and funding/financing options are identified, develop an electric-preferred reach code for existing residential buildings during the next building code cycle to be implemented through the building code for projects that are valued at \$250,000 or greater. Include the following aspects in the code development: <ol style="list-style-type: none"> <li>1. If necessary, modify the reach code such that it satisfies the federal Energy Policy and Conservation Act’s (EPCA) seven criteria for an exemption from preemption.</li> <li>2. Establish a zero-NOx standards for replacement appliances.</li> <li>3. Establish a time of renovation energy efficiency performance requirement and electrification requirement that includes a checklist of cost-effective efficiency and electrification options for renovations to be completed based on scale of project.</li> </ol>
BE-3.3	Structural	Align with SB 379 to implement an online, automated permitting platform. As part of a comprehensive permitting compliance program, include routine training of City staff, dedicating City staff time to building inspections, charging fees for noncompliance, providing easy-to-understand compliance checklists online and with permit applications, and facilitating expedited permitting online.
BE-3.4	Funding/Equity	Continue to provide incentives available for community members installing solar and battery storage to their homes such as a Net Metering Program with high-compensation NEM rates, and continue to provide incentives for energy efficiency and efficient electrification upgrades. Provide resource information to the community through websites, workshops, and partnerships. Include outreach to newly sold homes, when homeowners are more likely to make upgrades.
BE-3.5	Equity	Review incentives, rebates, and financing options for procedural equity and ensure that existing and updated incentive programs are being equitably distributed to the community. Develop a suite of Equity Guardrails with input from the community to ensure existing building electrification improves equity in the community.
BE-3.6	Structural	Develop an appliance direct install program for Multi-Family income-restricted properties. Consider implementing a Neighborhood Retrofit Program to improve resiliency in residential buildings (i.e., on-site power generation and storage, weatherization, cooling, etc.), with an emphasis on connecting incentives and resources with rental property owners and low-income residents. Partner with community organizations to utilize existing resources.
BE-3.7	Funding	Once feasibility studies and cost analysis are completed, dedicate staff time or funding of consultants to pursue funds through CARB, the Investment Reduction Act, and the Infrastructure Investment and Jobs Act including, but not limited to: <ol style="list-style-type: none"> <li>1. DOE block grants</li> <li>2. Green bonds</li> <li>3. Grant Anticipation Notes or Short-Term Loans</li> <li>4. Tax exempt lease purchases</li> <li>5. Energy as a service</li> <li>6. Energy Performance Contracting from Energy Service Companies (ESCOs)</li> </ol>
BE-3.8	Partnership	Continue to conduct periodic energy efficiency rebates reviews. Promote existing available rebates and incentives for energy efficiency and electrification from Healdsburg Electric, the State, and the Federal government through partnership with Climate Action Healdsburg to educate the community on ways to finance electrification.

Action Number	Pillar	Action
<b>Total GHG Emission Reductions from Measure:</b> 947 MT CO <sub>2</sub> e		
<b>City Cost:</b>		Moderate
<b>Community Cost:</b>		Moderate
<b>Cost Effectiveness:</b>		Moderate
<b>Co-Benefits:</b>		Environmental Quality, Public Health and Safety, Energy Resilience
<b>KPI:</b>		Change in residential natural gas consumption (%)

*Measure BE-4: Decarbonize non-residential building stock by 10% by 2030*

Non-residential buildings account for approximately 17% of Healdsburg’s total GHG emissions with 48% of non-residential building emissions attributed to natural gas consumption. Similar to the residential sector in BE-3, electrifying existing non-residential buildings requires the replacement of natural gas appliances with electric equipment. This measure focuses on continuing activities to promote voluntary electrification and energy benchmarking of non-residential buildings as well as updating the building code to require electrification of existing non-residential buildings when triggered by specific thresholds. Actions supporting this Measure are detailed below in Table 8.

**Table 8 Measure BE-4 Actions**

Action Number	Pillar	Action
BE-4.1	Feasibility Studies	Identify non-residential building electrification barriers and analysis supporting future adoption of a non-residential building electric-preferred reach code. Assess the cost range for electrification retrofitting for different industries. Identify the appropriate project threshold to require electric upgrade in order to electrify 10% of existing non-residential buildings by 2030.
BE-4.2	Structural Change	Continue to monitor the 9 <sup>th</sup> circuit court of appeals of the CRA vs City of Berkeley ruling. As part of the next building code cycle, develop an electric-preferred reach code for existing non-residential buildings to be adopted by 2026 to be implemented through the building code for projects that are valued at \$500,000 or greater. As part of this reach code include the following steps: <ol style="list-style-type: none"> <li>1. If necessary, modify the reach code such that it satisfies the federal EPCA’s seven criteria for an exemption from preemption.</li> <li>2. Encourage commercial buildings to comply with the Commercial Energy Performance Assessment and Disclosure Program (AB 1103).</li> <li>3. Establish a zero-NOx standards for replacement appliances.</li> <li>4. Enforce the permitting of replacement appliances through the same permitting compliance program as for residential building electric-preferred reach code.</li> </ol>
BE-4.3	Education	Develop an education campaign to promote electrification and include items in the program such as: <ol style="list-style-type: none"> <li>1. Conduct engagement efforts for the commercial sector to identify ways the City can support commercial energy storage installations and neighborhood scale microgrid opportunities.</li> <li>2. Facilitate funding opportunities for commercial business electrification by identifying and supporting grant opportunities available to the community, prioritizing small and community owned.</li> <li>3. Implement feedback provided during the community outreach process for small businesses and community-owned businesses to address potential equity impacts of the building performance program.</li> </ol>

Action Number	Pillar	Action
		<ol style="list-style-type: none"> <li>4. Utility bill inserts to advertise the incentive programs or grants available and the cost benefits of electric appliances</li> <li>5. Targeted outreach to builders, developers, local contractors, and property managers with an informational brochure describing the financial benefits of replacing natural gas appliances with all electric appliance when they apply for permits</li> <li>6. Provide informational webinars and an updated website to advertise and promote All-Electric Building Initiative rebates and incentives</li> <li>7. Promote the use of the Energy Star Portfolio Manager program and benchmarking training programs for nonresidential building owners.</li> </ol>
BE-4.4	Education/ Partnership	Continue to partner with electrification/efficiency experts to provide guidance to commercial buildings covered by the new code(s) and/or ordinance(s).
BE-4.5	Education/ Partnership	Partner with the Healdsburg businesses and the Chamber of Commerce to inform and facilitate electrification for commercial business owners.
<b>Total GHG Emission Reductions from Measure: 706 MT CO<sub>2</sub>e</b>		
<b>City Cost:</b>	Low	
<b>Community Cost:</b>	Moderate	
<b>Cost Effectiveness:</b>	Moderate	
<b>Co-Benefits:</b>	Environmental Quality, Public Health and Safety, Energy Resilience	
<b>KPI:</b>	Change in non-residential natural gas consumption (%)	

*Measure BE-4A: Decarbonize 50% municipal buildings and facilities by 2030*

By demonstrating the feasibility of building electrification within municipal buildings and facilities the City can lead by example in driving down building emissions. For example, the City has already retrofit most buildings with LED lighting and replaced failing equipment with efficient electric alternatives, such as the all-electric and efficiency upgrades made to City Hall in 2018. Special focus is also given to the wastewater treatment plan, which accounts for approximately 5% of community wide electricity consumption and nearly 60% of municipal consumption. While all City accounts are on the Green Rate for 100% renewable electricity, reducing electric consumption at the wastewater treatment plant and other city facilities allows for more green electricity to be available to meet the needs of other community members and businesses in Healdsburg. Actions supporting this measure are detailed below in Table 9.

**Table 9 Measure BE-4A Actions**

Action Number	Pillar	Action
BE-4A.1	Structural	Develop a resolution to decarbonize 50% of municipal buildings and facilities by 2030 and 100% by 2045, by retrofitting natural gas appliances with electric alternatives. Include in the resolution an ‘electric first’ purchasing policy for any equipment or appliances in need of replacement.
BE-4A.2	Feasibility Studies/ Funding	Conduct a feasibility study to understand current decarbonization and barriers to installing additional distributed energy resources such as solar and battery storage, or other renewable energy generation infrastructure, at municipal facilities. Plan for directing resources through the city for funding, energy storage, and distributed energy resources. Direct municipal efforts to sourcing space for energy storage projects, microgrid implementation, and future electrification.
BE-4A.3	Structural	Gain funding for and complete a Wastewater treatment plant energy efficiency study and implement the highest impact recommendations.
<b>Total GHG Emission Reductions from Measure: Supportive</b>		
<b>City Cost:</b>	High	
<b>Community Cost:</b>	No Cost	
<b>Cost Effectiveness:</b>	Moderate	
<b>Co-Benefits:</b>	Environmental Quality, Public Health and Safety, Energy Resilience	
<b>KPI:</b>	Change in municipal natural gas consumption (%)	

## Transportation

Transportation makes up approximately 60% of Healdsburg GHG profile. Of that, approximately 95% of transportation GHG emissions are due to on-road transportation. The primary strategies to reduce transportation involve mode shift away from single-occupancy vehicles and electrifying the remaining vehicle miles traveled (VMT).

*Measure T-1 Implement programs that increase access to safe active transportation, such as walking and biking, that achieve 15% of active transportation mode share by 2030.*

The City currently supports active transportation through the continual increase in bicycle and pedestrian routes and maintenance of existing routes. Increasing the mode shift from single-occupancy vehicles to active transportation options is largely dependent on safe routes and a behavior shift from the community. Increasing the available safe bicycle and pedestrian routes, the connectivity of such routes to locations of interest, and increasing the benefit of using such options can initiate change. Based on current census data approximately 2% of trips are associated with bike travel, and 4% associated with walking. Bicycle and walking trips primarily replace short vehicle trip types, not long distances. Studies have shown that a mode shift to active transportation can be increased up to 15%, though this level of change requires extensive change in infrastructure and behavior change. Behavior change is commonly driven by education, or incentives and disincentives, such as implementing paid parking, that promote a change. Actions supporting this measure are detailed below in Table 10.

**Table 10 Measure T-1 Actions**

Action Number	Pillar	Action
T-1.1	Structural	<p>Work with Sonoma County Transportation Authority (SCTA) to update the 2013 Existing and Planned Bicycle and Pedestrian Facilities for City of Healdsburg with new planned and completed projects by 2025. As part of the update consider including:</p> <ol style="list-style-type: none"> <li>1. Identified projects from the 2013 plan not yet implemented and include a progress update and/or reasons that identified projects were determined infeasible in updated Master Plan</li> <li>2. Safe Routes to School plan</li> <li>3. Increased biking infrastructure off the main street to enhance connectivity throughout the City and/or in communities where there is currently no or limited infrastructure</li> <li>4. In partnership with surrounding communities, identify opportunities for infrastructure improvements or expansions to enhance cross-community active transportation</li> <li>5. Explore streets for permanent through traffic closures to promote walking, biking, and other forms of active transportation with a focus on closing off downtown</li> <li>6. Explore areas of the City to remove parking and/or additional traffic lanes to prioritize outdoor seating and dining</li> <li>7. Determine equity barriers to safe bike and pedestrian infrastructure.</li> </ol>

Action Number	Pillar	Action
T-1.2	Structural	Continue to utilize discretionary funds to implement the bicycle and pedestrian infrastructure improvements and updates such as the protected bike lanes along Healdsburg Avenue and reduction of through lanes on Healdsburg Avenue (e.g., Healdsburg Avenue Improvement Project). Select consultant to finalize designs for Healdsburg Avenue Improvement Project by end of 2023 to aim for project completion end of 2028. Improvement projects underway include: <ol style="list-style-type: none"> <li>1. Healdsburg Avenue Complete Streets improvements</li> <li>2. Grove Street improves including ADA compliance</li> <li>3. Foss Creek &amp; Front Street connections</li> <li>4. Saggio Hills Foss Creek Pathways Extension</li> </ol>
T-1.3	Education/ Partnership	Support the Sonoma County Bicycle Coalition and local community groups to facilitate community outreach and education on transportation alternatives and promote infrastructure improvements and expansion, such as Foss Creek Trail. Continually improve methods for engaging the community, gathering input, and utilizing it to prioritize projects from the Bicycle and Pedestrian Master Plan. Promote and distribute regionally available tools, such as bike maps, bus routes and schedules, etc. to the community and to hotels and tourism centers to increase visitor use of active transportation.
T-1.4	Structural	Develop the Pilot Bike Share Program into a permanent and dependable bike share network that provides access to key destinations throughout the City, and work with regional partners including SMART and others, to assess potential for a regional bike share system. Include educational outreach and campaigns promoting use of the re-inspired program.
T-1.5	Education/ Partnership	Coordinate regionally through Sonoma County leveraging the regional active transportation plan to facilitate cross-community active transportation improvements, such as SMART multi-use path and Great Redwood Trail. As part of this action include community outreach and education on active transportation improvements to affected areas as well as the community.
T-1.6	Feasibility Studies	Evaluate existing bike parking facilities and evaluate what improvements can be made to increase supply, reduce theft, and increase rider attraction. This would include surveying existing bike parking facilities throughout the city and developing policies to increase and/or improve these facilities with preference given to improving bike parking facilities near public transit stops and expand access to safe transit (i.e., first and last-mile access). Include analysis of last mile limitations and hurdles. Explore ways to require safe, secure bike parking and/or bike lockers as part of large commercial and multi-family projects.
T-1.7	Partnership	Support the tourism and business sectors of the greater Healdsburg County region to increase active transportation from tourists and employees.
T-1.8	Funding/ Equity	Partner with local bike shops to provide subsidies to low-income residents for bicycles, helmets, pumps, and other bicycle equipment. Continue to offer e-bike rebates with increased rebate opportunities for low-income customers. Implement an income-qualified coupon for the e-bike share program, in addition to the available 50% discounted e-bike share rate.
<b>Total GHG Emission Reductions from Measure: 353 MT CO<sub>2</sub>e</b>		
<b>City Cost:</b>	High	
<b>Community Cost:</b>	No Cost	
<b>Cost Effectiveness:</b>	Low	
<b>Co-Benefits:</b>	Environmental Quality, Preserve Community Character, Public Health and Safety	
<b>KPI:</b>	Bicycle and pedestrian mode share (%)	

*Measure T-2: Implement programs for public transportation that achieve 10% of public transit mode share by 2030.*

To increase the mode shift from single-occupancy vehicles to using public transit or other car-share options is largely a behavior shift that relies on community members initiative. Increasing the access and convenience of such transportation options or increasing the benefit of using such options can initiate change. Currently public transit options in Healdsburg are limited and based on census data, approximately 1% of trips are associated with public transit use. Studies have shown that public transit use can be increased up to approximately 25%, though this level of change requires extensive change in infrastructure and offered services that meet the needs of the riders (e.g., commuting, local travel, travel for City visitors). The City is not the responsible agency for public transit services, however works closely with the regional provider, Sonoma County Transit (SCT). Currently, the Healdsburg bus route is serviced by an electric shuttle and provides free ridership. Discount programs are also available for regional transit. At this time the City does not have the funding or resources to fund, implement and maintain its own public fleet or increase SCT’s services in Healdsburg, and would require partnering with an outside company and organization and funding through new tax revenue sourced through either the community or tourists. This measure therefore focuses on collaborating with regional public transit providers and other partners to enhance regional connectivity. Actions supporting this measure are detailed below in Table 11.

**Table 11 Measure T-2 Actions**

Action Number	Pillar	Action
T-2.1	Feasibility Study/ Partnership	Partner with SCT to conduct a feasibility study to inform the development of a tourism-based mobility plan aimed at decreasing tourism-based single passenger vehicle use. In this study: <ol style="list-style-type: none"> <li>1. Identify community boundary locations for tourism designated parking and optimal route connectivity.</li> <li>2. Identify opportunities for town shuttle services and park-and-ride locations for residents and tourists.</li> <li>3. Pilot study on private funded transportation to wineries.</li> <li>4. Gauge potential of private partnerships with big tourism destinations such as wineries and local businesses to implement direct public transit routes between park and ride and the relevant tourist destinations.</li> </ol>
T-2.2	Study/ Partnership	Partner with regional organizations or community groups to conduct local transportation surveys to better understand the community’s needs and motivation for traveling by car versus other alternatives such as the bus. Use survey results to inform policy development and education/outreach campaigns that are transit focused.
T-2.3	Equity/ Partnership	In the identification of access improvements to transportation include design improvements of seating and shading at bus stops and along active transportation routes. Partner with SCT to incorporate design changes throughout infrastructure modifications.
T-2.4	Equity/Studies	Work with SCT to ensure public transportation access and improvements are prioritized in low-income areas, active aging neighborhoods, schools and at major destinations. This could include surveying existing transportation services, routes, schedules, and facilities throughout the city and developing a plan to improve these for implementation with preference given to improving public transportation facilities and expand access to transit (i.e., first and last-mile access).
T-2.5	Education/ Funding/Equity	Promote free or subsidized regional public transit programs for vulnerable communities in Healdsburg that makes it free or discounted for participants to travel regionally via SCT.

Action Number	Pillar	Action
<b>Total GHG Emission Reductions from Measure:</b> 2,022 MT CO <sub>2</sub> e		
<b>City Cost:</b>		Moderate
<b>Community Cost:</b>		No Cost
<b>Cost Effectiveness:</b>		Moderate
<b>Co-Benefits:</b>		Environmental Quality, Preserve Community Character, Public Health and Safety
<b>KPI:</b>		Public transit mode share (%)

*Measure T-2A: Explore the development of a micro-mobility and/or car-share program to support mode shift from single occupancy fossil fuel vehicles to Zero Emission Vehicles.*

To support the mode shift out of single-occupancy vehicles to using zero-emission vehicles (ZEVs) the City plans to explore additional micro-mobility options within the community. Increasing the access and convenience of such transportation options or increasing the benefit of using such options can initiate change. This measure consists of largely feasibility studies and outreach efforts to gauge the viability of additional micro-mobility devices. Additionally, the community has expressed a strong interest in an on-demand shuttle or a micro-transit program. As part of this Measure, the City will conduct the necessary feasibility studies to determine the viability and costs of a micro-transit system in town. This measure also focuses rounding out equity in access to alternative transportation. Actions supporting this measure are detailed below in Table 12.

**Table 12 Measure T-2A Actions**

Action Number	Pillar	Action
T-2A.1	Feasibility Study	Conduct a background review of options for purchasing, operating, and maintaining an on-demand door-to-door e-shuttle. This may include the development of a new on-demand e-shuttle, the expansion of DASH for all residents of Healdsburg, or the development of a program to subsidize the cost for electric car-share programs such as Uber or Lyft. The analysis should include identification of potential funding sources (e.g., grants, local taxes, local business sponsorship, discretionary funds, etc.) and identification of barriers and opportunities for how such a micro-mobility program may enhance active transportation or public transit use. Present the findings to City Council and the public to determine next steps.
T-2A.2	Structural	Based on the findings of the feasibility study and the response from City Council and the public, develop and implement a micro-mobility policy that establishes a deployment protocol and permitting process, identifies any restrictions for use for safety reasons, and promotes equitable access through requirements for consistent placement of micro-mobility devices (e-scooters, e-bikes, etc.) in underserved areas or reductions in usage fees for lower-income users.
T-2A.3	Equity	Facilitate transportation equity through multilingual programs that identify local equity issues and seek to remove barriers for vulnerable communities to use carshare or micro-mobility options.
T-2A.4	Education/ Partnership	Leverage community groups and local organizations to develop outreach and education materials advertising micro-mobility options and the benefits of use for traveling locally and increasing connectivity of public transit. Provide information on available funding opportunities or subsidies offered for low-income residents.

Action Number	Pillar	Action
<b>Total GHG Emission Reductions from Measure:</b> Supportive		
<b>City Cost:</b>		Moderate to High
<b>Community Cost:</b>		Low
<b>Cost Effectiveness:</b>		Low
<b>Co-Benefits:</b>		Public Health and Safety
<b>KPI:</b>		Micro-transit mode share (%)

*Measure T-3: Develop programs and policies to discourage driving single passenger vehicles and to support the bicycle/pedestrian and public transit mode share goals of Measures T-1 and T-2.*

While Measures T-1 and T-2 can be effective in changing community choices around transportation, the impacts of incentive-based policies increase when coupled with disincentives for less favorable choices, such as making it less convenient to drive a gasoline-fueled single passenger vehicle. Therefore, this measure aims to support transitions in mode shift by planning for additional forecasted VMT and offsetting it through development of active and micro-mobility alternatives as well as identifying locations to limit or charge for parking in downtown areas to discourage driving. Through provisions of additional incentives, options, and systems enabling community-wide shifts from single passenger vehicles the City is aiming to further support transportation mode shifts. Actions supporting this measure are detailed below in Table 13.

**Table 13 Measure T-3 Actions**

Action Number	Pillar	Action
T-3.1	Structural	Reduce future VMT of new development through infrastructure requirements modifying the General Plan and/or specific plans (e.g., Central Healdsburg Avenue Plan) such that the plans for different City areas include policies that support the development of a connected pedestrian and cyclist network. Infrastructure requirements may include: <ol style="list-style-type: none"> <li>1. Small scale version of park and ride for residents and tourists.</li> <li>2. Interconnected bike lanes and sidewalks throughout the City.</li> <li>3. Electric Bike stations or other micro-mobility hubs outside of major residences and shop destinations</li> </ol>
T-3.2	Structural/ Funding	Investigate parking policies to disincentivize single passenger vehicles while enabling alternative options for communities meeting defined equity metrics. Based on City Council and public feedback, implement parking policies to disincentivize single passenger vehicles. This <i>may</i> include options such as, but not limited to: <ol style="list-style-type: none"> <li>1. Eliminate or severely limit parking options for single-passenger vehicles in downtown and other commercial areas of the city using best available information on implementation. <ol style="list-style-type: none"> <li>a. Implement a parking permit system to reserve available parking for employees of businesses downtown or in commercial areas.</li> </ol> </li> <li>2. Utilize a static or dynamic parking pricing for all downtown parking locations and use revenue to fund active transportation and public transportation projects.</li> <li>3. Price all public parking spaces for all areas of the city with fees directed towards active transportation</li> </ol>
T-3.3	Feasibility Study	Conduct an analysis of the potential community impacts and benefits of charging for parking in downtown. Analysis should include evaluation of different parking fee structures as well as ensure that potential equity concerns are identified.

Action Number	Pillar	Action
T-3.4	Structural	City lead by example by encouraging and providing incentives for active transportation and public transit use, such as free access to the e-bike share program, public transit passes, telework options, or other incentives.
<b>Total GHG Emission Reductions from Measure:</b> Supportive		
<b>City Cost:</b>	Moderate	
<b>Community Cost:</b>	Low	
<b>Cost Effectiveness:</b>	Low	
<b>Co-Benefits:</b>	Environmental Quality, Public Health and Safety	
<b>KPI:</b>	Change in community mode share to public transit or active transportation (%)	

*Measure T-4: Increase passenger zero-emission vehicle use and adoption to 50% by 2030.*

The state has adopted Executive Order N-79-20 requiring that 100% of new sales of passenger vehicles be zero-emissions by 2035, as well as invested billions of dollars into programs developed to support the expansion of ZEV and electric vehicle (EV) infrastructure throughout the state and increase access to ZEVs for all Californians including low- or moderate-income consumers. Based on consumer choice models and regulatory drivers, California’s Motor Vehicle Emission Factor model has conservatively estimated that by 2030 there will be about a 7% penetration of passenger EVs. Accelerating this rate is primarily driven by increasing access to EVs and charging infrastructure and developing a connective network. Actions supporting this measure are detailed below in Table 14.

**Table 14 Measure T-4 Actions**

Action Number	Pillar	Action
T-4.1	Structural	<p>Develop a reach code requiring electric vehicle capable charging spaces. Amend the Healdsburg Development and Municipal Code to promote EV chargers in new development and existing parking spaces, to require at a minimum:</p> <ul style="list-style-type: none"> <li>▪ Single Family – CalGreen Tier 2 provisions</li> <li>▪ Multifamily – CalGreen Tier 2 provisions</li> <li>▪ Non-Residential – CalGreen Tier 2 provisions</li> <li>▪ Expand the designation of EV charging parking spaces to 15% of existing parking spaces within the City by 2030.</li> <li>▪ Require larger residential rental building owners (more than 20 tenants) and large commercial building owners (more than 10,000 square feet) to install working electric vehicle chargers in 20% of parking spaces for new and existing buildings.</li> <li>▪ Expediate EV charger permits</li> </ul>
T-4.2	Structural	Develop an ordinance requiring Healdsburg vehicles to participate in the States Biennial smog check program and contribute towards clean energy standards. Work with the Northern Sonoma County Air Pollution Control District to require biennial smog checks.
T-4.3	Education/ Partnership	Partner with local organizations and community groups to distribute outreach and education materials to residents and local businesses on the financial, environmental, and health and safety benefits of ZEVs, as well as anti-idling for fossil-fuel vehicles. Provide information on available funding opportunities.
T-4.4	Equity/ Partnership	Identify private sector partnerships and develop affordable, zero-emission vehicle car share programs to serve affordable housing and/or multifamily developments with a priority to target vulnerable communities.

Action Number	Pillar	Action
T-4.5	Equity/ Funding	Continue to promote the EV Monthly Bill Discount Program with increased discount opportunities for low-income customers, and develop an updated or replacement program following program sunset in 2025. Continue to promote affordable EV charging rates at city-owned EV charging stations and adjust rates as necessary to cover program costs.
T-4.6	Funding	Utilize the CALeVIP rebate to install new electric vehicle chargers at the Senior Center and downtown Maher lot. Applied for Federal Charging and Fueling Infrastructure (CFI) grant to install electric vehicle chargers at the Community Center, Giorgi Park, High School, and West Plaza.
T-4.7	Feasibility Study	In addition to the 6 City-owned lots already identified, conduct a survey of existing publicly accessible electric vehicle chargers and their locations and identify a prioritized list of additional locations for new electric vehicle charging stations, or lots for increased chargers, with consideration for equitable distribution of chargers to vulnerable communities. Study should include an evaluation of capacity needs associated with the installation of new EV chargers and identification of the businesses or stakeholders that own the property to coordinate with for installation of chargers.
T-4.8	Funding	Promote incentives and financing options for residential electric vehicle charger installations. Develop programs and policies to add 500 new publicly accessible and private workplace Level 2 and 3 electric vehicle charging stations to the City by 2030 through grants such as the California Energy Commission’s Clean Transportation Program. Develop programs that incentivize residents and businesses to charge during times of abundant solar resources and avoid charging during peak hours and grid emergencies
T-4.9	Partnership/ Equity	Collaborate with neighboring jurisdictions and the Sonoma County Transportation Authority to develop a connected network on ZEV car share. Prioritize car share to serve affordable housing and/or multifamily developments.
T-4.10	Funding/ Partnership/ Equity	Partner with the local air district and RCPA to communicate State requirements for off road equipment and identify funding opportunities to support low-income residents to replace gas-powered landscaping equipment and off-road engines with zero emission equipment, such as through rebates or buyback programs.
<b>Total GHG Emission Reductions from Measure: 14,513 MT CO<sub>2</sub>e</b>		
<b>City Cost:</b>	High	
<b>Community Cost:</b>	Moderate	
<b>Cost Effectiveness:</b>	Moderate	
<b>Co-Benefits:</b>	Environmental Quality	
<b>KPI:</b>	Passenger ZEV adoption (%)	

*Measure T-5: Increase commercial zero-emission vehicle use and adoption to 40% by 2030.*

The state has adopted several rules and programs focused on accelerating the penetration of commercial ZEVs, including the Innovative Clean Transit regulation, the Advanced Clean Trucks regulation, and the Advanced Clean Fleet rule. The Advanced Clean Truck rule adopted in June of 2020, requires truck manufacturers to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024, and establishing a target for every new truck sold in California to be zero-emission by 2045. In 2023, CARB approved the Advanced Clean Fleets regulation, which requires a phased-in transition toward zero-emission medium-and-heavy duty vehicles for government, public, and private fleets. To accelerate commercial electric vehicle adoption in the City, the City plans to actively identify and engage businesses/employers with vehicle fleets to accelerate ZEV adoption. Actions supporting this measure are detailed below in Table 15.

**Table 15 Measure T-5 Actions**

Action Number	Pillar	Action
T-5.1	Feasibility Studies	Inventory commercial vehicle fleets in Healdsburg and identify employers to target for accelerating zero emission vehicle adoption. Develop a plan for City-supported accelerated fleet electrification.
T-5.2	Structural	Adopt a ZEV plan for commercial vehicles in line with state targets and in line with the findings of the accompanying feasibility study. Work with stakeholders to develop and implement the plan for City-supported accelerated fleet electrification. As part of the plan, identify opportunities for accelerated fleet electrification and promote zero-emission vehicle (ZEV) adoption within business and municipal fleets.
T-5.3	Education/ Partnership	Provide information to businesses on state and federal programs to help fund conversion of commercial fleets to zero emissions vehicles.
T-5.4	Equity/ Funding	Identify, implement, and connect vehicle fleet owners, particularly those serving vulnerable communities to incentivize vehicle electrification. This could include local tax breaks.
T-5.5	Funding	Secure funding from state programs (such as the California Air Resources Board's Clean Vehicle Rebate Project and the Truck and Bus Voucher Incentive Program) and federal sources to increase procurement of EV or ZEV cars, trucks, and other vehicles and installation of EV/ZEV charging/fueling infrastructure.
<b>Total GHG Emission Reductions from Measure: 2,000 MT CO2e</b>		
<b>City Cost:</b>	Low-Moderate	
<b>Community Cost:</b>	Moderate	
<b>Cost Effectiveness:</b>	Moderate	
<b>Co-Benefits:</b>	Environmental Quality	
<b>KPI:</b>	Commercial ZEV adoption (%)	

*Measure T-5A: Lead by example and electrify or otherwise decarbonize the municipal fleet in compliance with the state's Advanced Clean Fleet Rule.*

The state’s Advanced Clean Fleet regulation requires the electrification of the City’ municipal fleet. The decarbonization of municipal vehicles and equipment with ZEVs and EVs at time of replacement are outlined as actions supporting this measure detailed below in Table 16.

**Table 16 Measure T-5A Actions**

Action Number	Pillar	Action
T-5A.1	Structural	Continue to implement the Zero-emission vehicle first purchasing policy for all light-duty municipal vehicles, and update to also include off road equipment, medium-duty vehicles, and provide a path to comply with the State’s Advanced Clean Fleet rule requiring 50% of medium- and heavy-duty vehicle purchases be zero-emissions beginning in 2024 and 100% beginning in 2027. Also consider operational needs to determine appropriate size of vehicles. Maintain exemptions needed to ensure public safety and delivery of critical services.
T-5A.2	Structural	Install additional ZEV chargers in municipal parking lots for fleet, employees, and public use to meet projected demand.
T-5A.3	Structural	Develop a resolution to replace City-owned end-of-life small off-road equipment with electric equipment (e.g., lawn equipment and leaf blowers) at time of replacement.

Action Number	Pillar	Action
<b>Total GHG Emission Reductions from Measure:</b> Supportive		
<b>City Cost:</b>		Moderate
<b>Community Cost:</b>		No Cost
<b>Cost Effectiveness:</b>		Moderate
<b>Co-Benefits:</b>		Environmental Quality
<b>KPI:</b>		Change in municipal fleet to ZEV (%)

**Waste**

GHG emissions associated with solid waste generated by the community makes up approximately 8% of Healdsburg GHG profile. A majority of emissions associated with waste generation are associated with the decomposition of organic material in the landfill. Therefore, the primary strategy for reducing emissions associated with solid waste generation is the diversion from the landfill and reuse of materials.

*Measure SW-1: Achieve Zero Waste by 2030 through 90% diversion of solid waste from the landfill.*

Senate Bill 1383 that took effect in 2022, requires all persons and entities to divert generated organic materials (e.g., food waste, green waste, etc.) from the garbage sent to the landfill. Entities that provide food are also required to donate excess food. The City of Healdsburg is a part of the County’s Zero Waste Sonoma and has a franchise agreement with Recology to provide solid waste, recycling, and compost services to residents and business in Healdsburg in accordance with the solid waste recycle and diversion legislation. It is the responsibility of businesses and residents to comply with the requirements of Senate Bill 1383 through proper sorting and disposal of waste materials. Currently, user fees support a part time Zero Waste Specialist position for Healdsburg at Recology. Implementation of new waste-related actions would require either an increase in time for the Recology position and/or dedicated City staff time. Examples of completed and ongoing actions include high-quality food scrap countertop bin giveaways by the City and free bulky item pick up from Recology, as well as many ongoing educational campaigns and development of a construction and demolition materials ordinance by Zero Waste Sonoma. Actions supporting this measure are detailed below in Table 17.

**Table 17 Measure SW-1 Actions**

Action Number	Pillar	Action
SW-1.1	Structural	<p>Meet the requirements of SB 1383 to reduce organics in the waste stream by 75% below 2014 levels by 2025 and achieve Zero Waste through 90% solid waste diversion by 2030. Include activities such as:</p> <ol style="list-style-type: none"> <li>1. Implement enforcement and fee for incorrectly sorted materials with sensitivity to shared collection.</li> <li>2. Assure adequate bin signage across commercial and residential areas of acceptable landfill, recyclable, and compostable materials.</li> <li>3. Conduct additional free compost bin giveaways and promote the free curbside organics collection service by Recology</li> <li>4. Expand existing ban on polystyrene foam products containing PFAS to include additional items without means of recycling or recycling markets, such as produce bags, plastic packaging, straws, plastics #4-7, and mixed materials.</li> <li>5. Implement pilot project for reusables for restaurant to-go containers.</li> <li>6. Identify long-term and alternate solutions for the community’s wastewater bio-solids to avoid long hauling distances and develop local, beneficial reuse.</li> <li>7. Identify public areas for adding composting and recycling bins where needed.</li> </ol> <p>Partner with Recology and Zero Waste Sonoma as applicable for the actions listed above.</p>

Action Number	Pillar	Action
SW-1.2	Education/ Partnership	Partner with Zero Waste Sonoma to support a Bring your own (BYO) education and outreach training for residents and businesses on reusables and implementing more sustainable packaging into daily use. Also educate the community on food scraps. Provide resources of education and technical assistance on city website. Partner with libraries and other existing facilities to market campaigns about waste reductions, reuse and repair.
SW-1.3	Equity/ Partnership	Leverage community groups and local organizations to work with multi-family property owners/managers to increase education through signage for their properties and supplies for proper sorting.
SW-1.4	Feasibility Studies/ Partnership	Leverage Zero Waste Sonoma 2022 Waste Characterization study and visual characterization conducted at the Healdsburg transfer station to understand the waste stream and create a plan to increase diversion and reduce contamination. Continue to work with Zero Waste Sonoma to conduct a waste characterization study every 5 years that includes Healdsburg to inform programs and policies.
SW-1.5	Funding/ Partnership	Partner with Recology and/or Zero Waste Sonoma to pursue funding, such as from CalRecycle, to outfit multi-family homes with zero waste infrastructure and expand waste diversions programs within the City.
SW-1.6	Structural	Develop and implement a Zero Waste Protocol for special events.
<b>Total GHG Emission Reductions from Measure: 7,729 MT CO<sub>2</sub>e</b>		
<b>City Cost:</b>	Moderate	
<b>Community Cost:</b>	Low	
<b>Cost Effectiveness:</b>	High	
<b>Co-Benefits:</b>	Environmental Quality, Public Health and Safety	
<b>KPI(s):</b>	Change in total tonnage of landfilled waste (%) Change in landfilled organic waste compared with 2014 baseline levels using waste characterization studies (%)	

## Water & Wastewater

GHG emissions associated with water and wastewater make up <1% of Healdsburg GHG profile. Emissions associated with water are due to indirect emissions from the electricity consumption for water conveyance, treatment and delivery to consumers in the City. Emissions associated with wastewater are due to the direct fugitive emissions from wastewater treatment. Therefore, the primary strategy for reducing emissions associated with water use and wastewater generation is to reduce water consumption and wastewater generation.

While water and wastewater reduction do not achieve substantial emissions reductions, this strategy is also important for community resilience. Healdsburg prepares a long-range water supply plan every five years, called the Urban Water Management Plan, which takes into account population, water supply, drought risk, and more.

*Measure W-1: Reduce per capita potable water consumption by 25% by 2030.*

Measures related to this sector include promoting water conservation by reducing per capita potable water consumption and increasing access to and use of recycled water. Water and wastewater (along with all City accounts) utilize renewable power for the pumping and treatment of local water sources. Reducing electricity consumption helps more renewable electricity be available for other community members and businesses to use, as well as reducing the small amount of emissions associated with green energy sources. Actions supporting this measure are detailed below in Table 18.

**Table 18 Measure W-1 Actions**

Action Number	Pillar	Action
W-1.1	Structural	<p>Update the Urban Water Management Plan every 5 years, as required by the State, and implement the identified demand reduction actions to ensure compliance with the State’s Making Water Conservation a Way of Life regulations. Include new actions in the UWMP as needed to achieve State regulations, which may include:</p> <ol style="list-style-type: none"> <li>1. Amend the City’s Water Shortage Contingency Plan to restrict any water waste at any time for households, businesses, industries, and public infrastructure.</li> <li>2. Work with Community Development, large water users, and other stakeholders to develop an On-Site Water Reuse Plan to maximize utilization of local water supplies decreasing energy intensity of distribution.</li> <li>3. Revisit and update the Water Efficient Landscape Ordinance as needed. Engage, through regional partnerships, with builders and developers to provide information on the requirements for development projects.</li> <li>4. Develop an ordinance for installation of dual-plumbing water systems that utilize greywater or recycled water for irrigation at new residential and commercial construction.</li> <li>5. Increase engagement with the community, specifically low-to-moderate income residents, to understand available incentives or rebates, options, and programs to reduce per capita water use. Leverage regional programs and resources available through membership in the Sonoma-Marin Saving Water Partnership, and leverage partnerships with local organizations to expand water conservation outreach.</li> <li>6. Implement a software solution for residents and businesses to view water consumption data in near real time.</li> <li>7. Complete grant funded Municipal Water Pipeline and work to expand the Municipal Recycled Water Pipeline project, as funding is available. Identify additional locations available for recycled water use and establish a schedule for potable water replacement with recycled water in appropriate applications residentially, commercially, and municipally, and determine recycled water user fees.</li> <li>8. Revise water and wastewater rates as necessary to ensure cost of service is covered.</li> </ol>

City of Healdsburg  
**Climate Mobilization Strategy**

Action Number	Pillar	Action
<b>Total GHG Emission Reductions from Measure: 46 MT CO<sub>2</sub>e</b>		
<b>City Cost:</b>		Moderate
<b>Community Cost:</b>		No Cost
<b>Cost Effectiveness:</b>		Low
<b>Co-Benefits:</b>		Environmental Quality, Public Health and Safety
<b>KPI:</b>		Change in per capita water consumption (%)

## Carbon Sequestration

Carbon sequestration is the process of removing carbon from the atmosphere using technology and natural solutions. Over time as GHG emissions are reduced from more and more sectors, carbon sequestration and carbon removal will play an increasingly important role in California’s ability to achieve carbon neutrality. Carbon can be removed from the atmosphere both naturally by trees and the carbon cycle as well as industrially via carbon capture equipment. As technology and methodologies advance, there may be significant reductions in GHG emissions that can be achieved to meet the States goal.

The RCPA goal of reaching carbon neutrality by 2030 relies on 20% of total emissions being removed via carbon sequestration. For the City of Healdsburg this would equate to the removal of approximately 25,000 MT CO2e. At this time, the technology is not available to the City of Healdsburg to achieve this level of carbon removal and it is not possible to achieve that level of carbon removal via natural carbon sequestration in the land mass under the City’s jurisdictional control. However, the City is committed to identifying pathways to increase natural carbon sequestration within City boundaries and explore other opportunities for carbon removal as they become available.

*Measure CS-1: Increase carbon sequestration by preserving existing mature trees and planting 500 new trees and high emissions reduction potential land cover types throughout the community by 2030.*

This measure assists in reaching carbon neutrality through the preservation of mature trees and the planting of 500 new trees of high emissions reduction potential land cover types. The City aims to utilize trees as natural carbon sinks, helping to reduce GHG emissions and create co-benefits of cleaner air and reduced urban heat island effect. Actions supporting this measure are detailed below in Table 19.

**Table 19 Measure CS-1 Actions**

Action Number	Pillar	Action
CS-1.1	Structural/ Partnership/ Equity	Develop a Street Tree Master Plan to include goals for promoting street tree health, enhancing resiliency, increasing the environmental benefits and co-benefits resulting from street trees and shading, community engagement around the urban forest. Include activity to promote street tree health and maintaining existing trees through partnerships with the community and local organizations, including organizations with connections to vulnerable communities to assist in the implementation of the Street Tree Master Plan to ensure equity is prioritized as part of the plan.
CS-1.2	Structural	Develop a new Tree Protection Ordinance to include protection for native and heritage trees. The ordinance should regulate the removal of not just heritage trees, but native trees that increase the City’s carbon stock and carbon sequestration. Ordinance may include: <ol style="list-style-type: none"> <li>1) Development requirements to protect or replace one-for-one existing trees and greenspace.</li> <li>2) Implementation of a tree removal in-lieu fee that provides funding for the City to plant a new tree equivalent to every tree removed from private property.</li> <li>3) Identification of native tree species and heritage trees to be protected.</li> <li>4) Shade tree requirements for new development</li> <li>5) Parking lot landscaping requirements</li> <li>6) Increased permeable surfaces and green spaces in new development</li> </ol>

Action Number	Pillar	Action
		7) Vegetative barrier requirements between busy roadways and developments to reduce exposure to air pollutants from traffic 8) Protocols for proper tree maintenance and care 9) Best practices to protect existing carbon stocks against wildfire risk
CS-1.3	Education	Establish an adopt-a-tree or adopt-a-street program that enables individuals, businesses, and community organizations to plant and care for trees in selected communities. Program should provide formalized information on appropriate trees eligible for planting in Healdsburg (i.e., native, drought tolerant, locations, fire resistant) and their maintenance. Leverage existing plant lists developed by nearby and partner organizations.
CS-1.4	Equity	Prioritize low-income areas of the city with less existing tree canopy for tree plantings. Increase shading in gathering spaces.
CS-1.5	Funding	Explore urban and community forestry grant programs (e.g., CAL FIRE) and other sources of state, federal, and philanthropic funding to fund urban forestry programs. As part of this effort, establish a goal to apply for at least one grant every three years.
<b>Total GHG Emission Reductions from Measure: 25 MT CO<sub>2</sub>e</b>		
<b>City Cost:</b>	Low	
<b>Community Cost:</b>	Low	
<b>Cost Effectiveness:</b>	Low	
<b>Co-Benefits:</b>	Environmental Quality, Preserve Community Character	
<b>KPI:</b>	Number of new trees planted by 2030	

*Measure CS-2: Maintain and expand existing restoration projects to sequester carbon in restored lands.*

The City of Healdsburg contains several continuous green spaces including urban parks, the Healdsburg Ridge Open Space Preserve, and the Fitch Mountain Park and Open Space Preserve which act as natural carbon sinks in the community through provision of flora and fauna that absorb carbon dioxide. This measure aims to bolster the potential of the natural working lands in Healdsburg through an increased commitment to the restoration and preservation of parks and open spaces. Actions supporting this measure are detailed below in Table 20.

**Table 20 Measure CS-2 Actions**

Action Number	Pillar	Action
CS-2.1	Structural	Continue maintenance and expansion of Healdsburg Ridge Open Space Preserve (150 acres), and the Fitch Mountain Park and Open Space Preserve (170 acres), including wildfire mitigation. Continue maintenance and restoration projects in existing green spaces within City and urban areas.
CS-2.2	Education	Develop a community-based volunteer program supporting restoration project activity to create a maintained restoration process.
CS-2.3	Funding	Apply for at least one grant every three years for obtaining grant funding for restoration and preservation activities with a focus on projects that have been unable to be fully completed due to funding constraints.
CS-2.4	Partnership	Partner with local community organizations to promote and coordinate sequestration opportunities and facilitate volunteer maintenance projects.

Action Number	Pillar	Action
<b>Total GHG Emission Reductions from Measure:</b> Supportive		
<b>City Cost:</b>		Low
<b>Community Cost:</b>		No Cost
<b>Cost Effectiveness:</b>		Moderate
<b>Co-Benefits:</b>		Environmental Quality, Preserve Community Character
<b>KPI:</b>		Change in restored land (%)

*Measure CS-3: Align with SB 1383 and procure products of organic diversion at a rate of 0.08 tons of organic waste per capita per year with a focus on increasing compost application within City limits to increase carbon sequestration.*

As an extension of Measure SW-1, this measure focuses on the procurement requirements of recycled organic products outlined in Senate Bill 1383. Recycled organic products include compost, mulch, biofuel, and renewable electricity and jurisdictions can meet their procurement targets through procuring any combination of these authorized recycled organic products. Based on the existing opportunities, the City has focused its attention on procurement of compost to meet the SB 1383 procurement target. The bulk of this measure is accomplished through the City’s agreements with Zero Waste Sonoma and Recology to provide solid waste, recycling, and compost services to residents and business in Healdsburg in accordance with the solid waste recycle and diversion legislation. Actions supporting this measure are detailed below in Table 21.

**Table 21 Measure CS-3 Actions**

Action Number	Pillar	Action
CS-3.1	Structural Change	Meet the baseline procurement requirement of SB 1383 through direct procurement of applicable products, as feasible, for the City’s use and application. Establish contracts with service providers that use applicable products (e.g., landscape services, transportation services, waste haulers) on the City’s behalf to meet the remaining procurement requirement not met through direct procurement.
CS-3.2	Feasibility Studies/ Partnership	Identify locations within the City to apply compost as applicable/appropriate to help meet the procurement requirements of SB 1383. Leverage Zero Waste Sonoma to collaborate with local schools, Public Works, Community Services, Ag+Open Space, and the Resource Conservation Districts to identify additional opportunities to apply compost.
CS-3.3	Structural Change	Implement compost application on City-owned properties, according to findings of feasibility study for suitable locations and appropriate application rates.
CS-3.4	Structural Change	Develop requirements for compost application, tracking, and reporting for developers.
CS-3.5	Education	Work with Recology and ZWS to provide residents, businesses, and developers with educational material on where to get compost and how it can be used (i.e., landscaping), as well as how compost promotes carbon sequestration. Consider increasing free compost giveaways.
CS-3.6	Equity	Prioritize providing increased outreach and translated materials on the annual compost giveaway to low-income households, small businesses, and other vulnerable communities.
CS-3.7	Funding	Apply for at least one grant every three years for obtaining grant funding for SB 1383 compliance.

Action Number	Pillar	Action
CS-3.8	Partnership	Work with Sonoma County to identify opportunities for a regional compost procurement program to help meet the organics procurement provisions of SB 1383 as well as streamline hauler routes through regional collaboration.
<b>Total GHG Emission Reductions from Measure: 235 MT CO<sub>2</sub>e</b>		
<b>City Cost:</b>	Moderate	
<b>Community Cost:</b>	No Cost	
<b>Cost Effectiveness:</b>	Low	
<b>Co-Benefits:</b>	Environmental Quality, Preserve Community Character	
<b>KPI:</b>	Compost applied annually (tons per capita)	

## Administration

Measures focused on the administration of the CMS and funding of the CMS do not provide direct quantifiable GHG emissions reduction; however they are key in successful implementation of the CMS and achieving the overall goal of the CMS.

### *Measure F-1: Identify Administrative Needs for Successful CMS Implementation*

To best assist the accountability of the above measures and actions, the City plans to create a Climate Program Manager responsible for implementation, communications, and pursuit of new opportunities and funding for implementation of the CMS. Currently, the City has a Utility Conservation Analyst to implement the Utilities Department energy efficiency, building electrification, transportation electrification, and water efficiency actions. The Climate Program Manager would be responsible for managing the overall CMS and working with all Departments to implement their actions. The City’s ability to successfully implement the CMS will be dependent on staff and resource capacity to manage the overall CMS. Actions supporting this measure are detailed below in Table 22.

**Table 22 Measure F-1 Actions**

Action Number	Pillar	Action
F-1.2	Structural	Consider creating a Climate Program Manager new position who is responsible for implementing CMS measures and actions by drafting ordinances, managing technical studies, leading outreach efforts, updating online information, managing the webpages and social media posts to promote climate programs, networking with partners and stakeholders, and pursuing grant opportunities.
F-1.2	Structural	Report progress on CMS implementation annually to the City Council to measure progress and ensure accountability in achieving CMS emissions reduction goals.
F-1.3	Partnership/ Education	Partner with RCPA and other jurisdictions to ensure transparency in GHG emission reporting and make GHG emission data and inputs publicly available.
<b>Total GHG Emission Reductions from Measure:</b> Supportive		
<b>City Cost:</b>	Moderate	
<b>Community Cost:</b>	No Cost	
<b>Cost Effectiveness:</b>	N/A, supportive measure	
<b>Co-Benefits:</b>	Environmental Quality	

## 5 Implementation

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One of the key purposes of this CMS was to identify and prioritize key measures and actions to be implemented in the near-term that are most impactful at reducing GHG emissions. Based on substantial evidence and CMS specific data, the measures and actions details in the previous section have been developed to be capable of reducing a specific quantity of GHG emissions within a reasonable period of time, considering economic, environmental, legal, social, and technological factors. As such, the following section establishes an implementation plan that has been developed through City department coordination and evaluation of implementation feasibility given budget and staff capacity. The implementation timeline presented in Appendix D includes just the actions that will be completed in the next one to three years. The actions within the above section are those that will be completed prior to 2030, however are not anticipated to be completed over the next three years and therefore are not listed in the implementation timeline table included in Appendix D. Measures and actions that were considered throughout this process that are either not technologically or financially feasible at this time have been included in Appendix E as actions and efforts to consider in the future after the Measures in this CMS have been implemented.

### 5.1 Prioritization of Funding

In establishing the implementation timeline the City considered the following principles to guide how measures and actions were prioritized.

- **GHG Reduction Potential.** The CMS prioritizes measures and actions that will have a meaningful impact in reducing GHG emissions.
- **Cost-effectiveness.** The CMS prioritizes cost-effective actions, which considers the least cost for the greatest GHG reduction impact as well as actions that generate cost savings or the greatest return on investment.
- **Community Interest.** The CMS considered community feedback throughout the process to prioritize actions that had great community interest and would have the largest benefit for the community.
- **Funding Source.** The City has a finite budget to apply to implementation of the CMS, therefore budgetary constraints were considered. The City also considered the opportunities and availability of outside funding sources that could be leveraged to augment local resources, such as grants, or State and Federal incentives.
- **Equity.** The costs of implementing policies should be equitably spread amongst the community, and extra caution was taken to limit new costs being placed on vulnerable populations.
- **Mandates:** Measures and actions that support State mandates were prioritized to ensure compliance with meeting State regulations.
- **In Progress/Time Dependent:** Actions that are already substantially in progress were prioritized to leverage already completed work and further build on the progress. Actions that have a specific timeline for implementation were also prioritized for implementation in the next 1-3 years, such as amendments to the building code during the next state building code update.

## 5.2 Monitoring

A key to successful implementation is monitoring progress and tracking implementation over time. As part of the CMS, the City will annually report on the status of the CMS implementation. GHG reductions will be tracked over time through the continued preparation of the RCPA inventories. Tracking implementation of the plan in conjunction with the inventory updates will demonstrate the progress the City is making in reducing GHG emissions and achieving its 2030 goal.

If the actions identified in the CMS to meet the 2030 GHG emissions reduction milestone goal are not implemented, additional actions may need to be developed to meet the 2030 goals. The longer taking action is delayed, the more significant actions need to be taken to achieve the longer-term GHG emissions reduction targets.

## 5.3 Implementation Plan

Appendix D presents the measures and actions to be implemented in the next 1-3 years (through June 30, 2026). Measures and actions not included in this 1-3 year implementation plan will be revisited in preparation for the City's following budgeting cycle (Fiscal Years 26/27 and 27/28).

There may also be other actions that local organizations or community groups will take the lead on during the next 1-3 years. Although not listed in the Implementation Plan, the City can support these efforts where feasible as they arise.

The 1-3 year implementation plan in Appendix D includes the measure, action description, timeframe, responsible departments, and estimated costs.

In order to achieve the 2030 GHG emissions reductions goals discussed in Chapter 4, Healdsburg will begin implementing the measures and actions as soon as possible to make real progress over the next few years. The CMS identifies the start date to begin implementation of a specific action. Additionally, actions already in progress are denoted as such and actions that will be ongoing, such as an education program, will have a start date and indicate that the action is "ongoing".

Some actions such as adopting ordinances to decarbonize building stock, planting trees, or conducting the initial feasibility studies can be accomplished on a short timetable; while others, such as implementation of strategies to increase infrastructure for active transportation or ZEVs may require longer timelines to conduct a feasibility assessment, obtain funding, and rollout any required infrastructure change.

# Glossary

Term	Definition
Active Transportation	A means of transportation that is powered by human energy, for example walking or biking.
Adaptation	Adjustment or preparation of natural or human systems to a new or changing environment which moderates harm or exploits beneficial opportunities
Anthropogenic	Made by people or resulting from human activities; usually used in the context of emissions that are produced as a result of human activities
CALGreen	An abbreviated reference to the California Green Building Standards code, which sets minimum requirements for sustainable practices for construction (residential and commercial) projects throughout the state. It is updated every three years in accordance with the building cycle.
CALGreen Tier 1 & 2	Requirements beyond the mandatory measures laid out by CALGreen: Tier 1 adds additional requirements to the mandatory sustainability requirements, and Tier 2 further increases those sustainability requirements
CalRecycle	Agency that administers and provides oversight for all of California’s state-managed non-hazardous waste handling and recycling programs
California Air Resources Board (CARB)	The lead agency for climate change programs that also oversees all air pollution control efforts in California to attain and maintain health-based air quality standards
Carbon-free Energy	Energy produced by a resource that generates no carbon emissions, for example, wind power
Carbon-neutrality/ Net-Zero Emissions	Balancing anthropomorphically generated emissions out by removing GHGs from the atmosphere in a process known as carbon sequestration
Carbon sequestration	The long-term storage or capture of carbon dioxide and other forms of carbon from the atmosphere through biological, chemical, and physical processes
CH4	Methane, a hydrocarbon that is a greenhouse gas produced through anaerobic (without oxygen) decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion
Climate	The average of weather patterns over a long period of time (usually 30 or more years)
Climate Change	A change in the average conditions — such as temperature and rainfall — in a region over a long period of time
Complete Streets	Are designed and operated to enable safe use and support mobility for all users. Complete Streets approaches address a range of elements including sidewalks, bicycle lanes, bus lanes, public transportation stops, and median islands
CO2	Carbon dioxide, a naturally occurring gas and a by-product of burning fossil fuels and biomass, as well as land-use changes and other industrial processes
CO2e	Carbon dioxide equivalent, a metric measure used to compare the emissions from various greenhouse gases based upon their GWP
Decarbonization	Replacing technologies and services that run on fossil fuels (ex. natural gas) with ones that run on zero-carbon sources of energy (for example electricity from renewable energy like solar or wind power), ideally from renewable sources
Electric Vehicle (EV)	A vehicle that uses one or more electric motors or traction motors for propulsion
Energy Storage	Can provide frequency regulation to maintain balance between the network’s load and detected power generated, achieving more reliable power supplies. Batteries are an example of energy storage

Term	Definition
Fossil Fuel	A general term for fuel formed from decayed plants and animals that have been converted to crude oil, coal, natural gas, or heavy oils by exposure to heat and pressure in the Earth's crust
Greenhouse Gas (GHG)	A gas that absorbs infrared radiation, traps heat in the atmosphere, and contributes to the greenhouse effect
Global Warming Potential (GWP)	Total contribution to global warming resulting from the emission of one unit of that gas relative to one unit of the reference gas, carbon dioxide, which is assigned a value of 1
Greywater	Graywater refers to water that has been used domestically, commercially, and industrially
Local Governments for Sustainability (ICLEI)	A global network of more than 1,750 local and regional governments committed to sustainable urban development – emissions estimates were calculated using ICLEI's best available methodologies
Mitigation	An action that will reduce or prevent greenhouse gas emissions, such as electrifying buildings that previously ran on natural gas
Metric Tons (MT)	Common international measurement for the quantity of greenhouse gas emissions – one metric ton is equal to 2205 pounds or 1.1 short tons
Metric tons carbon dioxide equivalent (MT CO <sub>2</sub> e)	Metric/unit that GHG emissions are reported per standard practice; when dealing with an array of emissions, the gases are converted to their carbon dioxide equivalents for comparison purposes
Microgrid	A group of interconnected loads and distributed energy resources that act as a single controllable entity in respect to the grid. A microgrid can operate in 'island mode' and disconnect from the grid, or operate while connection to the grid
Mode Shift	Changing from one form of transportation to another, specifically, switching from traveling via car to traveling via bicycle or public transport
N <sub>2</sub> O	Nitrous Oxide, a powerful GHG with a high global warming potential; major sources of nitrous oxide include soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning
Organic Material	Natural or organic materials, for example food scraps and yard waste
Reach Code	A building code which requires a higher level of energy efficiency than the standard statewide code. Reach codes are allowed and encouraged under Title 24.
Remodels/Alterations	A building update that changes the exterior detail of a structure, but not its basic shape or size
Renewable Energy	Energy derived from natural sources that are replenished at a higher rate than they are consumed (ex. wind, biomass)
Resilience	Ability to anticipate, prepare for, and respond to hazardous events, trends, or disturbances related to climate
Supportive Measure or Action	One which has not been quantified and does not provide a direct or easily quantified GHG reduction; however, these measures are expected to contribute to overall GHG reductions and/or provide co-benefits
Transportation Demand Management (TDM)	Transportation Demand Management focuses on how people make their transportation decisions, and facilitates greater usage of infrastructure for transit, ridesharing, walking, biking, and telework
Vehicle Miles Traveled (VMT)	VMT is the amount of total miles traveled by motor vehicle that are generated over a population over a given timeframe (Ex. 1 year)
Vehicle to Grid Charging	A vehicle-to-grid charging device absorbs electricity from a car battery and pushes it back to the grid, allowing EVs to function as backup storage cells for the electrical grid.
Vulnerable Community	An area with concentrated populations of fixed-income seniors, persons with a disability, and lower income residents.

Term	Definition
Zero-Emissions-Vehicle (ZEV)	A vehicle that never emits exhaust gas from the onboard source of power
Zero Waste	The conservation of all resources by means of responsible production, consumption, reuse, and recovery of materials and packaging, without burning, and with no discharges to land, water, or air that threaten human health