Humboldt County Regional Climate Action Plan

Final Report

prepared by

Humboldt County
825 5th Street
Eureka, California 95501
Contact: John Ford, Director of Planning and Building

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

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- City of Blue Lake
- City of Eureka
- City of Ferndale
- City of Fortuna
- City of Rio Dell
- City of Trinidad

Regional Partners

- Redwood Coast Energy Authority (RCEA)
- Humboldt Transit Authority (HTA)
- Humboldt County Association of Governments (HCAOG)
- Humboldt Waste Management Authority (HWMA)
- Recology

Regional RCAP Coordination Team

- John Ford, County of Humboldt Director of Planning and Building
- Megan Acevedo, County of Humboldt Associate Planner
- Elizabeth Schatz, County of Humboldt Planning Manager
- Rodney Yandell, County of Humboldt Planning Manager
- Tom Mattson, County of Humboldt Director of Public Works
- Hank Seemann, County of Humboldt Deputy Director (Environmental Services) Public Works
- Rincon Consultants, Inc.

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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.
Biofuel	Biofuels are liquid fuels produced from renewable biological sources, including plants, algae, and from agricultural, domestic or industrial bio waste.
Biodiesel	Biodiesel is a liquid fuel produced from renewable sources, such as new and used vegetable oils and animal fats. Biodiesel is a biodegradable type of biofuel that can be used in diesel engines.
Biogenic CO_2 emissions	Biogenic CO_2 emissions are carbon dioxide emissions that are a result of the natural carbon cycle and the processing of biologically based materials.
Bus headway	The amount of time between two vehicles (e.g., buses) on the same route. The amount of headway on a bus route dictates the length of time a rider will wait between buses.
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, solar, large hydropower, and nuclear. Not all carbon-free energy sources are considered eligible renewable by California's Renewable Portfolio Standard defined below.
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.
CH_4	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.

Term	Definition
CO_2	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.
CO_2e	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.
Disadvantaged Communities	Refers to the areas throughout California disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure or environmental degradation. This includes areas with concentrations of people that are of low income, high unemployment, low levels of home ownership, high rent burden, or low levels of educational attainment.
Electric Vehicle (EV)	Refers to Battery Electric Vehicles (BEVs) and Plug-In Hybrid Electric Vehicles (PHEVs). BEV refers to any vehicle that operates solely by use of a battery or battery pack, or that is powered primarily through the use of an electric battery or battery pack but uses a flywheel or capacitor that stores energy produced by the electric motor or through regenerative braking to assist in vehicle operation. PHEV refers to a hybrid electric vehicle with the capability to charge a battery from an off-vehicle electric energy source that cannot be connected or coupled to the vehicle in any manner while the vehicle is being driven.
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.
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.
Infill Priority Area	Building within unused and underutilized lands within existing development patterns, typically but not exclusively in urban areas, and within a half mile of existing transit stop.
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_2e)	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 wider grid or operate while connected to the wider grid.
Mode Shift	Changing from one form of transportation to another, specifically, switching from traveling via car to traveling via bicycle or public transport.

Term	Definition
N_2O	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.
Nano-grid	A small-scale power grid that supplies electricity to a single building or load.
Non-biogenic CO_2 emissions	Non-biogenic CO_2 emissions are emissions that come from non-living sources, such as the burning of fossil fuels and industrial processes.
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.
Regional Housing Needs Allocation (RHNA)	Refers to the first two steps (Determination and Allocation) of a multi-step process that California governments utilize to plan for housing needs in each region of the state. The RHNA is a minimum projection of additional housing units needed to accommodate projected household growth of all income levels.
Remodels/Alterations	A building update that changes the exterior detail of a structure, but not its basic shape or size.
Renewable Diesel	Renewable diesel is a fuel made from fats and oils, such as soybean oil or canola oil, and is processed to be chemically the same as petroleum diesel. It meets the ASTM D975 specification for petroleum. Renewable diesel can be used as a replacement fuel or blended with any amount of petroleum diesel.
Renewable Energy	Energy derived from natural sources that are replenished at a higher rate than they are consumed (ex. wind, biomass); sources qualifying as renewable in California are listed in the State's Renewables Portfolio Standard.
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.
Timberland	Land, other than land owned by the Federal government and land designated by the Board of Forestry as experimental forest land, which is available for, and capable of growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees.
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)	The total miles traveled by motor vehicles by a population over a given timeframe (Ex. 1 year).
Vehicle to Grid Charging	A device that 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	Communities that experience heightened risk and increased sensitivity to climate change and have less capacity and fewer resources to cope with, adapt to, or recover from climate impacts. These disproportionate effects are caused by physical (built and environmental), social, political, and/ or economic factor(s), which are exacerbated by climate impacts. These factors include, but are not limited to, race, class, sexual orientation and identification, national origin, and income inequality. In Humboldt, this includes low-income families, fixed-income seniors, agricultural workers, etc.
Zero-Emissions-Vehicle (ZEV)	A vehicle that produces zero exhaust emissions of any criteria pollutant (or precursor pollutant) or greenhouse gas, excluding emissions from air conditioning systems, under any possible operational modes or conditions.
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

Term	Definition
	to land, water, or air that threaten human health. CalRecycle defines Zero Waste as a circular economy that collects and reuses items or remakes them into new products, SB 1383 established specific State goals for waste reduction.

1 Introduction

1.1 Vision

Humboldt County is a diverse region made up of communities, rural areas, ecosystems, and infrastructure that are impacted by climate change and acknowledges that to avoid the most catastrophic effects of climate change, greenhouse (GHG) emissions must be reduced significantly over the next two decades. Recognizing the strength in collaboration, the County of Humboldt, City of Arcata, City of Blue Lake, City of Eureka, City of Ferndale, City of Fortuna, City of Rio Dell, and City of Trinidad, collectively referred to as Humboldt hereafter, have crafted this Regional Climate Action Plan (RCAP) as a regional approach for addressing climate change. This RCAP is a starting place for a regional coalition focused on change and details a set of strategies to reduce GHG emissions, increase climate resiliency, and strengthen the growing regional green economy.

1.2 Purpose

Climate Action

The Humboldt RCAP is a long-range planning document that guides the Humboldt region towards long-term GHG emission reduction in accordance with the State's goal to reduce GHG emissions by 40 percent below 1990 levels by 2030 and achieve carbon neutrality by 2045.[1] See Appendix A for a written description of regulations related to climate action planning. This RCAP focuses on creating a climate coalition to maximize regional efficiencies, overcome challenges facing rural areas, attract funding, build a green economy, mitigate emissions, and increase resilience. By prioritizing collaborative efforts and tailored strategies, this RCAP aims to address the unique needs of the rural communities in the region while advancing comprehensive GHG reduction and economic development goals.

CEQA GHG Emissions Analysis Streamlining

California Environmental Quality Act (CEQA) Guidelines Section 15183.5(b) provides a methodology for agencies to analyze and mitigate the significant impacts of GHGs at a programmatic level using a qualified CAP. This methodology allows a lead agency to determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a qualified CAP. A qualified CAP is one that clearly demonstrates that GHG emissions within a defined geographic area will be reduced over time in a manner consistent with State reduction targets. State guidance and recent CEQA case law makes it clear that streamlining GHG emissions analysis from a qualified CAP provides a defensible method of achieving GHG CEQA clearance for new development proposals.

This RCAP fulfills the requirements of California Environmental Quality Act (CEQA) Guidelines Section 15183.5(b) to be considered a "qualified" GHG reduction plan.[2] In compliance with CEQA and State CEQA Guidelines, local agencies must evaluate the environmental impacts of new

[1] 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.

[2] Governor's Office of Planning and Research (OPR) (2019). *General Plan Guidelines - Chapter 8: Climate Change*. Accessed May 20, 2024 from https://opr.ca.gov/docs/OPR_C8_final.pdf

development projects or plans, including impacts related to GHG emissions associated with the construction and operation of projects or plans. This process can be cumbersome for local agencies and developers alike and can result in project delays. The CEQA Guidelines provide an option for new projects to streamline the CEQA analysis of GHG emissions by showing compliance with a qualified GHG reduction plan.

The RCAP is consistent with the criteria set forth in CEQA Guidelines Section 15183.5 (b) as outlined in Table 1. For jurisdictions that adopt the RCAP, CEQA analysis of GHGs can be streamlined for projects by establishing consistency with the RCAP and GHG emissions may be considered to have a less than significant impact.[3]

Table 1 CEQA Guidelines Section 15183.5(b) Criteria Addressed in RCAP

CEQA Criteria	RCAP Chapter Addressing Criteria
1. Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area	Chapter 3 Appendix B
2. Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable	Chapter 3
3. Identify and analyze sector specific GHG emissions from specific actions or categories of actions anticipated within the geographic area	Chapter 3 Appendix C
4. Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level	Chapters 4 Appendix C
5. Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels	Chapter 5
6. Adopt in a public process following environmental review	Pending Adoption

1.3 Background

The Humboldt region is a geographic area that has long been committed to sustainability initiatives focused on environmental conservation, renewable energy, and sustainable agriculture. There are strong environmental conservation efforts, with numerous protected areas and initiatives aimed at preserving the county's natural beauty and biodiversity. Many local businesses and organizations focus on sustainable tourism and promoting activities that do not harm the environment.

The Humboldt region is most vulnerable to sea level rise, extreme weather events, and wildfire. In recent years the region has experienced a growing frequency and intensity of precipitation events leading to flooding that regularly closes the primary routes into Humboldt County. This further isolates communities in the region, impacts the movement of goods across the region, and results in economic losses that the region counts on.[4]

Humboldt jurisdictions came together in 2019 and began preparing the RCAP to tackle climate change regionally, recognizing that a regional approach best leverages limited resources in the

[3] Governor's Office of Planning and Research (OPR) (2019). *General Plan Guidelines - Chapter 8: Climate Change*. Accessed May 20, 2024 from https://opr.ca.gov/docs/OPR_C8_final.pdf

[4] Governor's Office of Planning and Research (OPR), California Energy Commission (CEC), and California Natural Resources Agency (CNRA) (2018). *California's Fourth Climate Change Assessment - North Coast Region Report*. Accessed June 10, 2024, from https://www.energy.ca.gov/sites/default/files/2019-11/Reg_Report-SUM-CCCA4-2018-001_NorthCoast_ADA.pdf

region. Further, regional ab maximizes the effectiveness and benefit of GHG reduction strategies. Humboldt obtained a Rural Energy for America Program (REAP) grant from the US Department of Agriculture and the Humboldt County Association of Governments (HCAOG) to prepare the RCAP.

Humboldt Community

Located on the northern coast of California, Humboldt County is 270 miles north of San Francisco. Humboldt is known for its natural beauty with rugged coastlines, pristine rivers, mountainous terrain, and for being home to one of the largest densities of old-growth coast redwood forests with the largest concentration of old-growth redwood in the world. Historically, logging and the timber industry were the backbone of the county's economy. However, the timber industry has been in decline over the past few decades. Timber production in 1990 was 609,900 thousand board feet (MBF) but has been stable for over a decade with a harvest of 221,617 MBF in 2012 and 230,207 MBF in 2023.[5] Other drivers of the economy in the region include agriculture, particularly dairy farming and specialty crops, tourism, and in recent decades cannabis production.

The county is approximately 2,290,000 acres with 93% of this dedicated as natural and working lands (e.g. agriculture, forest, timberland). Much of the agricultural lands are forested, including oak woodlands intermixed with grasslands. Conservation of agricultural lands is currently supported by zoning regulations and contracts under the Williamson Act, which provides tax incentives to landowners in exchange for restricting their land to agricultural or open space uses for a specified period. There are 990,000 acres of private timberlands protected by Timber Protection Zone (TPZ) zoning regulations, which have requirements to replant and meet minimum stocking requirements under the Forest Practice Rules. There are also 300,000 acres of public forest land, including national forests, national parks, and state parks managed by the Bureau of Land Management (BLM), and county and city-owned forests, which are managed and conserved for various public benefits. The protection of these natural and working lands can maintain and increase the sequestration of carbon within the county.

Humboldt County has a population of approximately 135,010 people, with over half the population living in the unincorporated county. There are seven incorporated cities including Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, and Trinidad that range in population size from a few hundred residents to just under 30,000 residents. The median household income in the region is $57,000 with much of the region denoted as low-income as defined for California Climate Investments. Approximately 18 percent of residents are living in poverty, compared to 11.6 percent national average. The combination of geographic isolation, economic disparities, and demographic diversity in the region contribute to varied vulnerabilities to climate change impacts. Vulnerable populations, including low-income communities, may face heightened risks from climate-related hazards such as wildfires, sea level rise, and extreme weather events.

Though the community is largely rural and faces significant economic constraints, the unique community characteristics and ample natural resources provide climate action opportunities that may not be possible in other communities. The region has a strong sense of community, a vibrant local culture, and is passionate about their natural heritage contributing to a strong sense of environmental stewardship and conservation. The RCAP seeks to maintain the values of the

[5] Humboldt Co 1990 Crop Report, CTDTFA Timber Harvest Tables by County.

Humboldt community and region while leveraging these opportunities with solutions that are impactful and feasible in Humboldt.

Regional Constraints

While addressing climate change and implementing climate change policies it is critical to understand the constraints facing the region both at a jurisdictional and community level. The Humboldt region faces unique obstacles that must be overcome for effective climate change. The primary constraints in the region for climate action policy implementation include:

1. ***Geographic Isolation and Accessibility:*** Humboldt's rural character presents challenges in terms of achieving population densities needed for cost effective public transportation, reducing vehicle miles traveled (VMT), and developing infrastructure economically. Limited economic opportunities due to geographic and social isolation further complicate these efforts. Implementing projects over a geographically dispersed population can be costly and logistically complex. For example,
    a. Jurisdictions have historically lacked integration of public transit in long range land use planning efforts. Combined with dispersed population centers and low populations densities, implementing effective public transit systems under current federal, state and local funding structures is difficult.
    b. The region's remote and rural location requires long-distance transportation of waste to processing facilities, increasing both costs and emissions.
    c. The large area, dispersed communities and geographic isolation limits the region's ability to bring in and rely upon current ZEV technologies and reduce VMT.
2. ***Limited Infrastructure:*** The region lacks local waste management facilities such as recycling, composting, or processing centers, which diminishes local control, hinders compliance with state mandates, and necessitates long-distance transportation of waste out of the county. Additionally, being on the periphery of natural gas and electrical infrastructure presents challenges for developing renewable energy projects and electrification efforts due to transmission and distribution limitations. Building and maintaining infrastructure like roads, utilities, and telecommunications networks can be more expensive and challenging in remote areas.
3. ***Economic Dependence and Limited Resources:*** Recently Humboldt has lost some of the major economic engines the region had historically relied on like logging and fishing. Beyond being economically constrained, due to the low population, Humboldt also faces limited human resources to dedicate to obtaining funding and implementing climate mitigation and adaptation efforts. Converting infrastructure and transitioning to more sustainable practices can be challenging without adequate staffing, funding support, and incentives.

4. ***Social Vulnerability:*** Approximately 40 percent of the Humboldt population is either at or below the 80th percentile of the statewide median income[6,7], categorizing them as low-income and increasing their social vulnerability to climate change.

Despite these challenges, Humboldt also has strengths that can support climate action, including a strong tradition of regional collaboration and environmental stewardship, active community organizations, and a growing interest in sustainable agriculture and renewable energy.

Regional Opportunities

Humboldt, with its rich natural resources and an environmentally conscious and engaged community, offer several opportunities to overcome the constraints the region faces:

1. ***Partnerships and Collaboration:*** No single agency is responsible for mitigating GHG emissions, just as no community can avoid impacts related to climate change. One of the benefits of isolated areas like the Humboldt region is the recognized need to establish capable agencies and to foster collaboration to overcome challenges. This recognition has helped the region establish strong cross agency coordination and partnerships. Continuing to work together through a formal coalition to implement the RCAP is a powerful way for the region to make rapid progress with GHG mitigation and increased resilience.
2. ***Green Economic Growth:*** Transitioning to a low-carbon economy presents opportunities for new green industries and job creation in Humboldt. Investments in clean energy, sustainable agriculture, eco-tourism, composting, and green infrastructure projects can stimulate economic growth while reducing GHG emissions.
3. ***Funding Opportunities:*** There are several funding opportunities for rural and low-income areas in California. This includes state and federal funding, incentives, and partnerships to implement climate-related projects in Humboldt.
4. ***Abundant Renewable Energy Resources:*** Humboldt has significant potential for renewable energy generation, particularly from wind, solar, and biomass sources. Expanding renewable energy infrastructure can reduce greenhouse gas emissions and create local jobs and stimulate economic development. Recently, the Bureau of Ocean Energy Management (BOEM) has auctioned two lease areas for potential commercial wind energy development in Federal waters off the coast of Humboldt County, referred to as the Humboldt Wind Energy Area (WEA).[8]
5. ***Carbon Sequestration in Natural Ecosystems:*** Humboldt's diverse ecosystems, including forests, wetlands, coastal habitats, and agricultural lands, provide valuable opportunities for carbon sequestration. Protecting and restoring these natural and working lands can enhance resilience to climate change impacts while mitigating carbon emissions. With its extensive natural and working lands there are significant opportunities to implement sustainable land practices that avoid carbon loss, sequester carbon, protect biodiversity, and support local economies.

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[6] California Air Resources Board (2021). Identification of Low-Income Communities under AB 1550 Methodology and Documentation for Maps. Accessed May 20, 2024, from https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/kml/ab1550_maps_documentation.pdf

[7] U.S. Census Bureau (2022). American Community Survey (ACS) 5 Year Estimates (2017-2022) S1901. Accessed June 10, 22024, from https://data.census.gov/table/ACSST1Y2022.S1901?g=050XX00US06023

[8] Bureau of Ocean Energy Management (BOEM) (2024). *Humboldt Winde Energy Area*. Accessed June 6, 2024, from https://www.boem.gov/renewable-energy/state-activities/humboldt-wind-energy-area

Overcoming the obstacles to climate change policy implementation will require collaboration, innovation, and commitment. Coalition building is a core concept of the RCAP as collaboration between stakeholders in rural areas will be the key to successful implementation of climate action policies and improving climate resiliency in Humboldt. Several resources including the California Climate Adaptation Strategy, Community Organization Boards (COBs), and the California Air Resources Board (CARB) 2022 Scoping Plan for Achieving Carbon Neutrality offer partnership strategies to reduce GHG emissions. Collaboration efforts have the potential to increase green jobs and provide other economic resources to mitigate GHG emissions and build increased resilience across the Humboldt region.

Past GHG Reduction Efforts

Humboldt has been committed to increasing sustainable operations and policies for many years and strives to reduce GHG emissions throughout the region. There are numerous community-based groups and advocacy groups established that focus on initiatives to address climate change through policy-change. For example, North Coast Resource Partnership (NCRP) collaborates on various efforts to reduce GHG emissions across the North Coast which includes Humboldt County. This collaboration works to obtain grant funding, provide educational and promotional events, and implement a variety of programs across the region such as energy efficiency programs and land use and conservation projects that reduce GHG emissions and increase climate resilience. They are also involved in transporting, planning and supporting the development of renewable energy sources in the region to create an independent energy system.[9]

Additionally, Redwood Coast Energy Authority (RCEA), a local not for profit government agency that procures electricity for the Humboldt region as a community choice aggregator is implementing several initiatives to reduce GHG emissions through the energy sector. RePower Humboldt[10], RCEA's Comprehensive Action Plan for Energy in the region, lays out a strategy to provide 100 percent clean and renewable energy by 2027. Based on community input, the final report outlines policies and goals to lower utility rates and offer clean energy from local sources. RCEA's long-term energy portfolio aims to be 100 percent renewable by 2030. In addition, RCEA offers several energy efficiencies, fuel switching, and clean transportation programs to convert household and vehicle energy use from fossil fuels to renewable (low-carbon) sources.

Redwood Community Action Agency (RCAA) also offers a Weatherization Program that provides home repair services to increase energy efficiency for low-income households. Implementation of energy efficiency efforts and a continual increase of renewable and carbon-free energy on the grid through such efforts have led to a significant decrease in GHG emissions associated with electricity use in the region.

The Humboldt region is also dedicated to reducing vehicle miles traveled in the community and consequentially GHG emissions in its transportation sector. The Humboldt County Association of Governments (HCAOG) has developed numerous planning documents to decrease VMT in the region and is currently funding the County-led development of VMT thresholds for the region that would establish what amount of VMT change from development would be considered a significant impact and would require mitigation. This helps to limit increasing VMT. Additionally, HCAOG has

[9] North Coast Resource Partnership (NCPA) (n.d.). Homepage. Accessed June 15, 2024, from https://northcoastresourcepartnership.org

[10] Redwood Coast Energy Authority (RCEA) (2019). *RePower Humboldt*. Accessed May 5, 2024, from https://redwoodenergy.org/wp-content/uploads/2020/06/RePower-2019-Update-FINAL-.pdf

secured numerous grants for the region for a variety of programs that aim to reduce VMT.[11] Several communities are planning and developing with climate change and GHG impacts in mind. For example, the City of Arcata recently adopted the Gateway Area Plan that focuses on a high-density mixed-use development that is in close access to the City's center and key amenities of the city to reduce the need to drive.[12] The City adopted the Gateway Area Code to establish the specific requirements and standards to implement the Gateway Area Plan.[13] Land use decisions and developments such as this reduce VMT by placing residents near amenities, economic centers and access to other modes of transportation that is less GHG emitting.

The Humboldt Transit Authority (HTA) is committed to fully transitioning their fleet to zero emission in compliance with the Innovative Clean Transit regulation. In 2022 HTA was awarded a $38.7 million grant funded by the California Climate Investment fund through California State Transportation Agency's Transit and Intercity Rail Capital Program (TICRP) to introduce 11 New Flyer fuel cell electric buses (FCEBs) and a hydrogen fueling station at HTA's facility in Eureka. With 11 new zero-emission FCEBs added to the fleet and the hydrogen station, this project will help kick-start a hydrogen supply chain on the North Coast.[14]

Numerous community planning documents have been adopted in the Humboldt region that include a number of policies, goals, and projects that are focused on the reduction of GHG emissions including the County and local General Plans, City of Arcata Community GHG Reduction Plan[15], RePower Humboldt[16], Humboldt County Transit Development Plan 2023 - 2028,[17] HCAOG Humboldt Bay Area Bike Map, HCAOG RTP[18], and RCEA North Coast Medium-Duty and Heavy -Duty ZEV Blueprint Plan[19].

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[11] Humboldt County Association of Governments (HCAOG) (2023). *HCAOG 2023 Highlights*. Accessed May 21, 2024, from https://www.hcaog.net/sites/default/files/HCAOG%202023%20Highlights%20(Canva).pdf

[12] City of Arcata (2024). *Resolution No. PC-24-05, Gateway Area Plan 2024*. Accessed May 15, 2024, from https://www.cityofarcata.org/DocumentCenter/View/14232/25_Gateway20240514PC

[13] City of Arcata (2024). *Arcata Municipal Code Chapter 9.110 - Gateway Area Districts*. Accessed May 15, 2024, from https://www.cityofarcata.org/DocumentCenter/View/14200/Gateway-FBC20240514_PC-Adopted

[14] California Climate Investments (2023). *Kick-Starting Zero-emission Fleets and Expanding Transit on California's North Coast*. Accessed June 10, 2024, from https://www.caclimateinvestments.ca.gov/2023-profiles/hta

[15] City of Arcata (2006). *Community Greenhouse Gas Reduction Plan*. Accessed June 7, 2024, from https://www.ca-ilg.org/sites/main/files/file-attachments/resources__Greenhouse_Gas_Reduction_Plan_0.pdf?1460653786

[16] Redwood Coast Energy Authority (RCEA) (2019). *RePower Humboldt*. Accessed May 5, 2024, from https://redwoodenergy.org/wp-content/uploads/2020/06/RePower-2019-Update-FINAL-.pdf

[17] Humboldt County Association of Governments (HCAOG) (2023). *Humboldt County Transit Development Plan 2023-2028*. Accessed May 10, 2024, from https://www.hcaog.net/sites/default/files/humboldt_county_transit_development_plan_-_final_report_no_appendices_compressed_0.pdf

[18] Humboldt County Association of Governments (HCAOG). *Regional Transportation Plan, VROOM 2022-2042*. Accessed May 10, 2024, from https://www.hcaog.net/sites/default/files/vroom_2022-2042_full_report_0.pdf

[19] Redwood Coast Energy Authority (RCEA) (2023). *North Coast Medium-Duty and Heavy-Duty ZEV Blueprint Plan*. Provided by the County via SharePoint on March 15, 2023.

1.4 Regional Climate Action Plan Development Process

Process

The RCAP was built off the completed 2022 GHG emissions inventory calculated for activities within the geographic area of Humboldt County and included future GHG emissions forecasts and analysis of GHG emission reduction targets in support of state 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 Humboldt, current best practices, and information gathered from interested parties including the County, incorporated Cities, regional partners (e.g., HTA, RCEA, HCAOG), and community groups. Feedback from interested parties were considered to establish a list of priority projects and measures that were then further refined based on feasibility and substantial evidence for GHG reduction capacity. Figure 1 shows the iterative nature of the RCAP development process.

Figure 1 RCAP Development Process

Developing a comprehensive strategy to tackle climate change requires collaboration among various interested parties, community members, decision-makers, County and incorporated City staff. By working together, a plan that is representative of the needs of the community at large was developed.

Jurisdictional Collaboration

The RCAP was developed to encompass the geographical region of Humboldt County and will be implemented across all the incorporated Cities and County. Success with implementation and achievement of the GHG reduction targets will require coordination and cooperation between different jurisdictions and commitment and effort from all levels of the Cities and County administration. The RCAP was developed through collaboration among the County, all incorporated Cities, RCEA, HTA, HCAOG, and HWMA. The goals and measures presented in the RCAP were developed in close collaboration with department heads and regional partners. This approach supported the development of measures and actions that were feasible and provided a clear roadmap to address potential barriers to implementation. By incorporating insights from across the region, the RCAP struck a balance between Humboldt's operational capabilities and what needs to occur to reach the 2030 GHG reduction target. While the RCAP is regional in scope, each individual jurisdiction will need to adopt the RCAP through their City Councils or the County Board of Supervisors for the County.

Information Sharing with the Community

During the initial drafting of the RCAP that began in 2019, the County and incorporated Cities hosted numerous community outreach events and campaigns. As part of the initial work on the CAP presentations were made to each of the City Councils for Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Del and Trinidad, and to the Board of Supervisors. Other public presentations were held with the Farm Bureau, RCEA Board of Directors, a public forum at Cal Poly Humboldt and in McKinleyville, Redway and Willow Creek. To better address transportation related issues and Transportation Advisory Group was formed to provide input on the RCAP.

During the development of the RCAP, an interactive community survey was published on the public RCAP website to inform the community of the updates to the RCAP and gain an understanding of what measures and actions the community would like to see prioritized by the County and incorporated jurisdictions during implementation. The primary goal of the survey was to share information on 1) the Humboldt regions' GHG emissions inventory, forecast, and targets; 2) how Measures and Actions are structures; and 3) the level of potential GHG emissions reduction based on the Measures. The survey was viewed over 1,000 times with a total of 160 submissions. Survey results indicated that the respondents prioritized efforts to reduce organic waste sent to landfills, increase zero-emission vehicle use, and increase public transit use the highest. Responses from public officials prioritized efforts to increase zero-emission vehicle use and establish a region-wide Climate Committee to implement the RCAP as the highest with reducing organic waste and increasing public transit use tied as the third highest priority. These responses indicated high alignment between what public officials felt should be prioritized compared with the community respondents.

2 Scientific Context for Climate Change

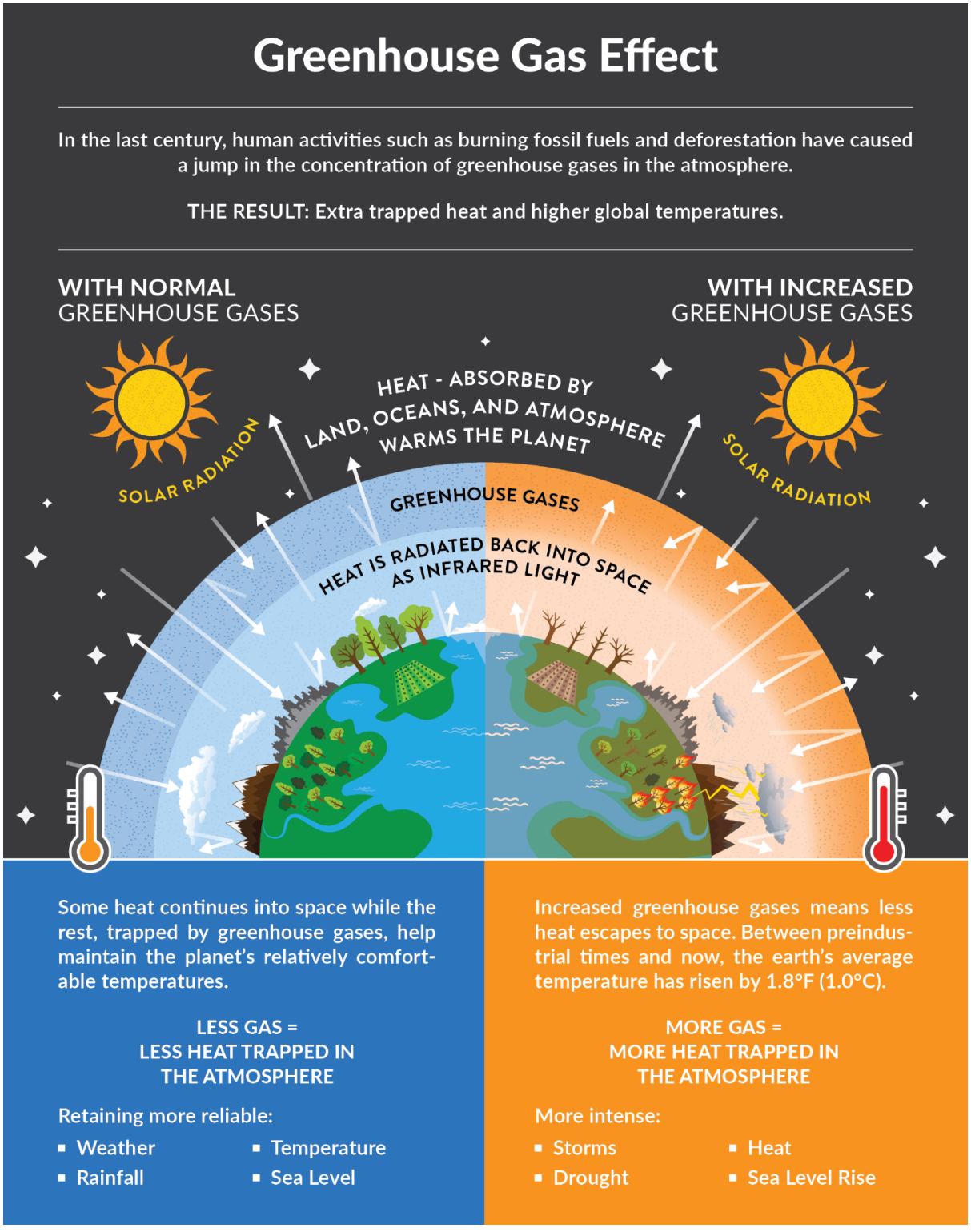
Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate intensity (such as wind patterns, precipitation, and storms) over an extended period of time. The baseline against which these changes are measured originates 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.[20]

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.

[20] Intergovernmental Panel on Climate Change (IPCC) (1995). *Climate Change 1995, The Science of Climate Change*. Accessed May 1, 2024, from https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_sar_wg_I_full_report.pdf

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_2), methane (CH_4), and nitrous oxide (N_2O), as well as chlorofluorocarbons, hydrochlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, which are collectively called fluorinated gases.[21] 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_2, CH_4, and N_2O,[22] while fluorinated gases[23] result in the remaining three percent of emissions. Most fluorinated gases come from industrial sources, of which there are relatively few in Humboldt. Due to CO_2, CH_4, and N_2O comprising the large majority of GHG emissions in Humboldt, the RCAP 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).[24] The reference point to compare the potential impact of different GHGs is CO_2, and therefore CO_2 has a GWP of 1, whereas CH_4 has a GWP of 28. This means that each metric ton (MT) of methane causes 28 times more warming than 1 MT of CO_2. Even more potent, N_2O has a GWP of 265, or 265 times the GWP of 1 MT of CO_2.[25]

Sources of GHGs

GHGs are emitted by both natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and decomposition of organic waste in landfills. [26] [27] 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.[28] The Inventory of U.S. Greenhouse Gas Emissions and Sinks is a comprehensive account of total GHG emissions for all man-made sources in

[21] Center for Climate and Energy Solutions (2019). *Main Greenhouse Gases*. Accessed June 12, 2024, from https://www.c2es.org/content/main-greenhouse-gases/

[22] World Resources Institute (WRI) (2020). *4 Charts Explain Greenhouse Gas Emissions by Countries and Sectors*. Accessed June 12, 2024, from https://www.wri.org/insights/4-charts-explain-greenhouse-gas-emissions-countries-and-sectors

[23] Fluorinated gases, which includes four main types: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6) and nitrogen trifluoride (NF_3), are man-made gases that can stay in the atmosphere for centuries and contribute to the GHG effect.

[24] Intergovernmental Panel on Climate Change (IPCC) (2014). *Climate Change 2014, Synthesis Report*. Accessed May 12, 2024, from https://www.ipcc.ch/site/assets/uploads/2018/05/SYR_AR5_FINAL_full_wcover.pdf

[25] ibid.

[26] In Humboldt County, dairy herds and beef cattle are pasture raised limiting the concentration of CH_4 emissions from enteric fermentation.

[27] Although there is not a landfill in Humboldt County, emissions associated with exported landfilled waste are attributed to the Humboldt community in accordance with the ICLEI – Local Governments for Sustainability's U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions.

[28] United States Environmental Protection Agency (EPA) (2024). *Inventory of U.S. Greenhouse Gas Emissions and Sinks*. Accessed May 12, 2024, from https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

the U.S. including CO_2 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_2e after accounting for sequestration from the land sector. Emissions decreased from 2019 to 2020 by 11 percent due to the COVID-19 pandemic, however, preliminary estimates show that emissions rebounded in 2021 after the height of the pandemic.[29]

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.[30] 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.

Humboldt and its residents have not been immune from the impacts of climate change. In the last five years the County has experienced the highest rate of sea level rise on the west coast.[31] This has led to coastal erosion and flooding events along coastal communities. Elevated temperatures can harm agriculture, strain water resources, and heighten the risk of heat-related illnesses. Similar to other regions in California, Humboldt 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 the marine environment with high humidity at low temperatures helps mitigate the risk of large wildfires in coastal areas of Humboldt County, inland Humboldt County is particularly vulnerable to large wildfires. The risk of wildfires is even greater in inland areas of Humboldt due in part to the buildup of understory vegetation resulting from a lack of natural fires in recent decades as well as the abundant stock of vegetation, which over the last decades have increased in density as vegetative clearing and prescribed burning have reduced.[32] As a result, wildfires have increased in intensity and size and have become more difficult to control. The forested land in Humboldt provides a natural sink to GHG emissions for the region and the state; a loss of this natural sink would be devasting. These climate hazards are expected to intensify if GHG emissions continue to increase. Likewise, Humboldt is likely to face direct impacts from climate change.

[29] United States Environmental Protection Agency (EPA) (2024*). Climate Change Indicators: U.S. Greenhouse Gas Emissions*. Accessed June 1, 2024, from https://www.epa.gov/climate-indicators/climate-change-indicators-us-greenhouse-gas-emissions

[30] Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (2018). *Indicators of Climate Change in California.* Accessed May 21, 2024, from https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf

[31] California Sea Level Rise Science Task Force, California Ocean Protection Council, California Ocean Science Trust (2024). *California Sea Level Rise Guidance: 2024 Science and Policy Update*. Accessed July 10, 2024, from https://opc.ca.gov/wp-content/uploads/2024/05/Item-4-Exhibit-A-Final-Draft-Sea-Level-Rise-Guidance-Update-2024-508.pdf

[32] Humboldt Planning & Building (n.d). *Wildfire Hazard*. Accessed June 10, 2024, from https://humboldtgov.org/3407/Wildfire-Hazard

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 RCAP 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 have 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.

AB 32 established the carbon offset program which supports the development of multiple programs that utilize forests, wildlands, and agriculture to offset industrial CO_2 emissions. Humboldt County has multiple forest carbon offset projects registered with the CARB covering tens of thousands of acres. However, a comprehensive natural and working lands sequestration analysis has not been completed in the County and these specific projects are not included in the assessment of this RCAP.

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 direct reduction in GHG emissions by 85 percent below 1990 levels by 2045. The remaining 15 percent of emissions would be removed via carbon removal technology or natural working lands. Humboldt County's forests, agriculture, and wildlands will play a critical role in achieving this goal. As such, this RCAP includes additional local policies and initiatives to protect the regions natural and 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 meet the SB 32 targets of reducing GHG emissions 40 percent below 1990 levels by 2030, 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 renewable and carbon-free electricity by 2045.

Regional and Local Goals

In the transportation sector, the HCAOG released a County Transit Development Plan for the years 2023-2028 that includes targeted sustainability goals for each jurisdiction. These include integrating solar power PV systems in the Arcata Intermodal Transit Facility and securing funding for the Sustainable Communities Program to fund green capital improvement projects. HCAOG 2022 RTP has set ambitious goals to increase public and active transit mode share by a combined 30 percent by 2030, and 40 percent by 2050. [33] Additionally, HTA is committed to fully transitioning their fleet to zero emission in compliance with the Innovative Clean Transit regulation. These efforts will reduce emissions of greenhouse gases, vehicle miles traveled, and congestion.

RCEA, the local Community Choice Energy provider, has set several goals focused on energy procurement and reducing emissions in the region as they are related to energy consumption. RCEA goals include: expand existing energy efficiency, conservation and electrification programs to reduce GHG emissions from fossil fuel use in buildings by 20 percent by 2030 and maintain a trajectory to reduce emissions from natural gas by 90 percent by 2050; accelerate the adoption of electric vehicles, with a target of over 6,000 electric vehicles on the road in Humboldt County by 2025 and 22,000 vehicles by 2030; by 2025 100 percent of RCEA's power mix will be from a combination of state-designated renewable or carbon-free energy resources; and by 2030, RCEA's power mix will consist of 100 percent renewable sources with a preference for local resources where possible.[34]

Cal Poly Humboldt launched an initiative called the Redwood Region RISE (Resilient Inclusive Sustainable Economy) that includes Tribal Lands, Del Norte, Humboldt, Lake, and Mendocino Counties. This is an effort to increase the number of green jobs in the region to align with sustainable economic growth and California's goals to achieve carbon neutrality. With a focus on equity, RISE aims to bring together different stakeholders to understand the needs for each region and develop projects in various sectors. County of Humboldt's Economic Development Department (GoHumCo) has developed a Comprehensive Economic Development Strategy (CEDS) that is updated every five years to provide an implementation plan for policies, programs and investments that will strengthen the economy in the Humboldt region. The 2018 – 2023 CEDS initiatives included attracting and growing industry and local workforce development.[35]

[33] Humboldt County Association of Governments (HCAOG). *Regional Transportation Plan, VROOM 2022-2042*. Accessed May 10, 2024, from https://www.hcaog.net/sites/default/files/vroom_2022-2042_full_report_0.pdf

[34] Redwood Coast Energy Authority (RCEA) (2019). *RePower Humboldt*. Accessed May 5, 2024, from https://redwoodenergy.org/wp-content/uploads/2020/06/RePower-2019-Update-FINAL-.pdf

[35] Humboldt County (2018). *Prosperity! 2018, Comprehensive Economic Development Strategy 2018 -2013*. Accessed May 11, 2024, from https://www.gohumco.com/DocumentCenter/View/137/2018-to-2023-Comprehensive-Development-Strategy-PDF

3 GHG Emissions Levels

An important part of the RCAP 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 defined geographic area 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 a defined geographic area, and set targets for future reductions.

For this RCAP a 2022 Humboldt County Regional GHG emissions Inventory was developed to comprehensively cover the entire county excluding those territories beyond local government jurisdiction, incorporating emissions data from both the incorporated cities and the unincorporated regions of Humboldt. The 2022 GHG emissions inventory was used to identify the greatest sources of GHG emissions within Humboldt and establish a GHG emissions baseline for the RCAP from which a forecast and reduction targets were established. The 2022 GHG emissions inventory identifies the major sources and quantities of GHG emissions produced by communitywide activities within the Humboldt region defined by the county geographical limits.

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_2e. One MT CO_2e is the equivalent of using 113 gallons of gasoline or driving 2,558 miles in a standard combustion vehicle.[36]

3.1 Humboldt GHG Emissions Inventory

The 2022 GHG emissions inventory covers the relevant emissions sources within the boundary of Humboldt County, including all incorporated and unincorporated areas. The inventory thereby reflects emissions sectors resulting from Humboldt community activities over which the local governments (i.e., County and partnering jurisdictions) have jurisdictional control and influence. Sectors where the local government has limited influence are excluded from the 2022 GHG emissions inventory as the local governments do not have jurisdictional control to develop measures to impact associated emissions. In alignment with Community Protocol, the 2022 GHG emission inventory includes emissions from the five basic reporting activities that must be reported: residential and commercial energy usage, on-road transportation, off-road transportation, landfilled waste, and water and wastewater. Though the Community Protocol recognizes refrigerants as a source of GHG emissions, the protocol notes that obtaining accurate information on a community scale can be challenging, and only recommends including refrigerant emissions if reliable data can be obtained. As representative refrigerant consumption information was not readily available during the development of this RCAP, refrigerant emissions are excluded from this inventory.

[36] United States Environmental Protection Agency (EPA) (2024). *Greenhouse Gas Equivalencies Calculator*. Accessed June 20, 2024, from https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

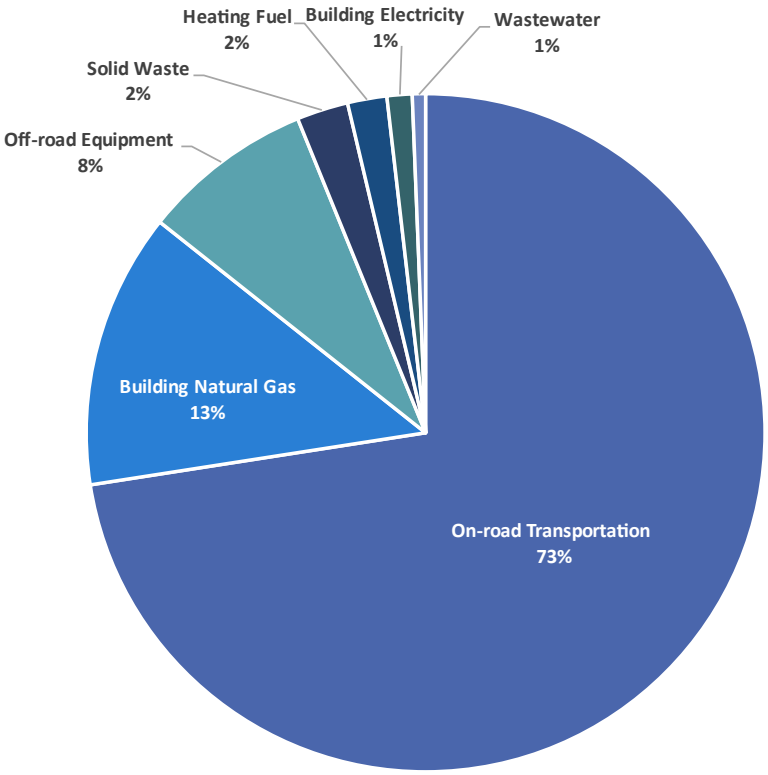
As part of the energy sector, electricity[37] and natural gas consumption from industrial operations are included as most industrial facilities in the area are not subject to regulations under the State's Cap-and-Trade program which typically governs industrial emissions. Further, local jurisdictions are considered to have some influence over the energy use at industrial land uses through zoning and building codes and therefore are included in the inventory. Emissions from industrial point source discharge have been excluded due to lack of local jurisdictional control over this emissions source and because industrial point sources are regulated by the state under the Cap-and-Trade program and by the local air district. Water sector emissions, arising from electricity use in water delivery and treatment, are accounted for under electricity sector emissions as the entirety of water supplied to Humboldt community members occurs within Humboldt geographic and jurisdictional boundaries.[38] Emissions associated with agricultural land use practices (e.g., land management, livestock emissions) are excluded from the inventory because the County and local jurisdictional governments have limited control over these type of agricultural emissions. Further, the County has not yet completed a natural and working lands carbon sequestration analysis and the existing data available to quantify the region's carbon stock are too limited to accurately quantify the carbon sequestration benefit of the region's natural and working lands. For these reasons, GHG emission impacts and carbon sequestration of natural and working lands are not included in this inventory. Future inventories may include emissions and sink impacts from natural and working lands.

Humboldt's total GHG emissions for 2022 were estimated to be 1,531,167 MT CO_2e, as depicted in Figure 3. For more information on the data and methodologies used, refer to Appendix B. According to the results of the 2022 GHG inventory, the largest source of GHG emissions in Humboldt was from on-road transportation, which accounted for 73 percent of the inventoried emissions. The second largest source of GHG emissions was from natural gas usage in buildings, which accounted for 13 percent of total emissions. Natural gas is used to heat water, homes, and businesses and to power gas-powered appliances. Off-road equipment accounted for the third largest source of emissions, for a total of 8 percent of total emissions in Humboldt as seen in Figure 3 below.

[37] Electricity is supplied to the region by PG&E and RCEA. GHG emissions associated with electricity use is based on the emission factor (i.e., MT CO_2e/kwh) determined by the energy portfolio for each utility provider and quantity of electricity provided to the region by each provider.

[38] Water sector operation information is based on feedback provided by the County and water districts which supply water to the Humboldt community.

Figure 3 Humboldt GHG Emissions 2022 Inventory



3.2 GHG Emissions Forecast

While GHG inventories provide data on Humboldt's current emissions, GHG-emissions forecasts (forecast) estimate the community's projected GHG emissions into the future. Forecasts are developed from the most recent GHG inventory and provide an estimate of how Humboldt's emissions might change over time due to factors such as population and job growth as well as new technologies and policies. A GHG emissions forecast estimates future GHG emission changes by accounting for projected community growth and changes. Calculating the difference between the GHG emissions forecast and GHG emissions reduction targets determines the gap in GHG emissions that needs to be closed through the implementation of local GHG reduction policies.

The 2022 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. To provide a comprehensive, forward-looking projection of demographic trends in the Humboldt community, the GHG emissions forecast utilized the Regional Housing Needs Allocation (RHNA) 6th cycle data and the U.S. Census data to estimate anticipated household growth in the region per year. RHNA data accounts for housing needs across the region based on demographic trends. Projected household estimates were used to project population and employment growth in Humboldt. These projections align with the anticipated growth reflected in the Humboldt County Association of Governments (HCAOG) Regional Transportation Plan (RPT) which projects a 1 percent population growth rate per year in the region in consideration of local project developments,

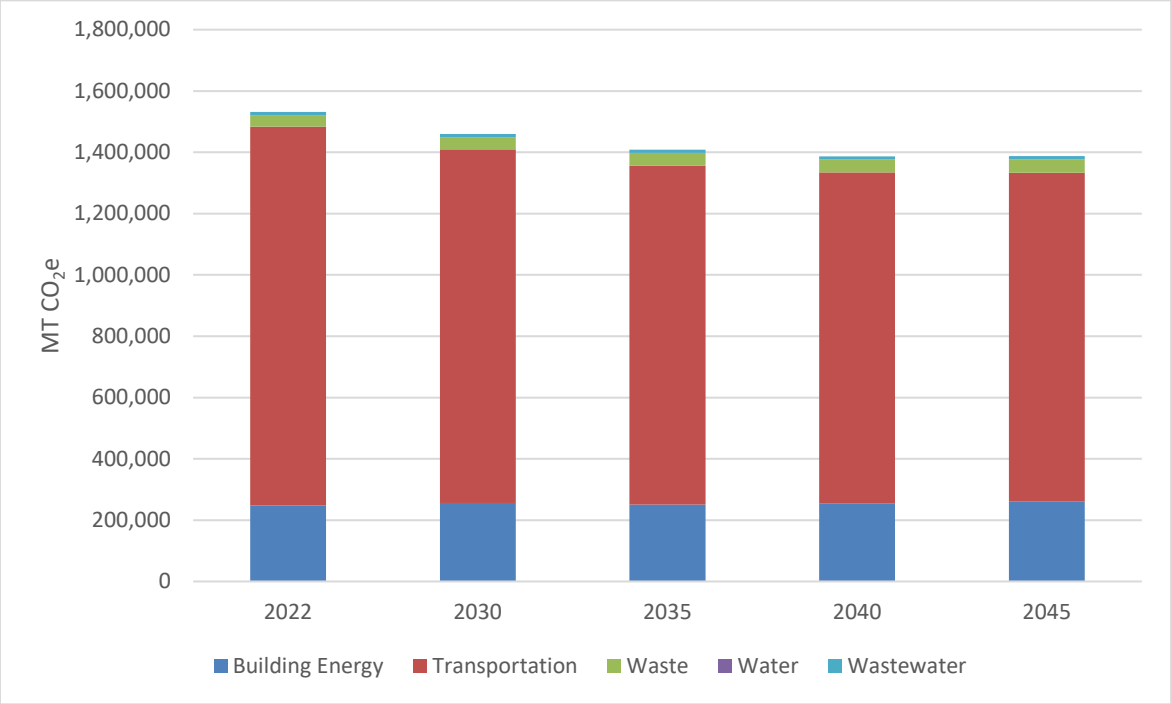
growth analysis from local jurisdictions, climate trends, and State-wide population movement trends.[39]

Two scenarios were forecast to estimate the future emissions for Humboldt in the years 2030, 2035, 2040 and 2045. This includes a *business-as-usual scenario* (BAU) forecast that estimates how future GHG emissions would change if consumption trends continued as they did in 2022 without consideration of any local or state regulations. Additionally, a *legislative adjusted scenario* (adjusted) forecast was developed that accounts for how currently adopted state legislation, such as the California Renewable Portfolio Standards, Title 24 building energy efficiency standards, and transportation legislation, would reduce GHG emissions from the *business-as-usual scenario*. Only State-mandated legislation that is being implemented independently of local influence or control is included in this forecast. State-mandated legislation that requires local government action to meet the requirements, such as SB 1383 and CARB's Off-Road Diesel-Fueled Fleets Regulation, are excluded from the forecast. However, estimated benefits associated with compliance with SB 1383 or alignment with CARB's Off-Road Diesel-Fueled Fleets Regulation through local government action is included under measure quantification within the RCAP (see Section 4.5 below). This is intended to protect against double-counting of emission reductions between the forecasts and measure quantification. More information on these regulations and how they were accounted for in the forecast can be found in Appendix B.

Humboldt's adjusted forecast projects the community's GHG emissions will decrease through 2040 and then increase slightly in 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, job growth, and levels of vehicles miles traveled. A summary of Humboldt's adjusted GHG forecast through 2045 is shown in Figure 4.

[39] Humboldt County Association of Governments (HCAOG). *Regional Transportation Plan, VROOM 2022-2042*. Accessed May 10, 2024, from https://www.hcaog.net/sites/default/files/vroom_2022-2042_full_report_0.pdf

Figure 4 Humboldt GHG Emissions Adjusted Forecast, 2022- 2045



3.3 Humboldt GHG Emissions Targets

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.[40] 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.

Due to lack of available and accurate 1990 activity data, Humboldt does not have a 1990 GHG emissions inventory from which to develop GHG reduction targets consistent with SB 32, however, 1990 GHG emissions can be estimated for the community relative to Humboldt's updated 2022 inventory using a state-level emissions change metric. The calculation is developed using the published Statewide emissions results from CARB[41], after removing emissions from sectors not included in Humboldt's inventory (e.g., non-specified, industrial point sources, agricultural land management practices). This approach assumes that Humboldt's community activities and associated GHG emissions have generally tracked with the State's activity trends and associated GHG emissions. However, since 1990, electricity and natural gas consumption and associated GHG emissions in Humboldt have declined at a much more rapid rate than the Statewide trend reflected

[40] California Air Resources Board (CARB) (2022). *2022 Scoping Plan for Achieving Carbon Neutrality*. Access February 19th, 2024, from https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf

[41] California Air Resources Board (CARB) (2024). *Current California GHG Emission Inventory Data*. Accessed May 2, 2024, from https://ww2.arb.ca.gov/ghg-inventory-data

in the Statewide inventory. This is because Humboldt has experienced a significant decline in industrial operations leading to a significant decrease in electricity and natural gas consumption. Further, RCEA has emerged as the main alternative electricity provider in the region offering since 2017 an alternative to PG&E, the sole utility provider to the Humboldt region in 1990. Because RCEA has a more renewable and carbon-free energy profile than PG&E, GHG emissions associated with building electricity use in the region have declined to a greater extent than Statewide trends reflect. Since these trends are specific to the Humboldt region and do not track with Statewide trends reflected in the Statewide inventory, electricity and natural gas emissions were also removed from the Statewide emissions to back-cast Humboldt's 1990 emissions associated with the following included inventory sectors: transportation (on and off-road), solid waste, wastewater, and heating fuel. GHG emissions from electricity and natural gas consumption in Humboldt in 1990 was quantified using 1990 county-wide activity data obtained from the California Energy Commission (CEC) and PG&E 1990 electricity emissions factor provided in the PG&E Community Report. This approach for developing a 1990 back-cast for Humboldt assumes that Humboldt's community GHG emissions associated with transportation, solid waste, wastewater, and heating fuel consumption have generally tracked with Statewide trends, while taking into consideration the more regionally applicable changes in electricity and natural gas consumption in the county.

The purpose of target setting is to develop the trajectory toward achieving the State's 2030 goal (SB 32) and prepare for the deep decarbonization needed by 2045 in a cost-effective manner by setting an incremental path toward achieving AB 1279 targets. CARB guidance is for jurisdictions to first strive to exceed the SB 32 targets of reducing GHG emissions 40 percent below 1990 levels, while establishing a policy framework to achieve the long-term target of carbon neutrality by 2045. This RCAP establishes a mass emissions target of 40 percent reduction in GHG emissions below 1990 levels by 2030 in alignment with SB 32. Additionally, the RCAP establishes strategies to make substantial progress towards carbon neutrality by 2045 in alignment with AB 1279. The pathway to achieve Humboldt targets in alignment with the state's targets is shown in Figure 5.

The emissions gap between the forecast and the target pathway represents the amount of GHG emissions that Humboldt is committed to reducing through local GHG reduction strategies and projects. As shown in Table 2, to achieve the RCAPs' 2030 goal, Humboldt emissions will need to be reduced by approximately 218,000 MT CO_2e by 2030.

Emission reductions will be achieved by implementing specific policies and programs at the local level. These activities are referred to as "measures" and "actions" and they should be clear, attainable, measurable, and equitable to help achieve the desired emission reductions. The GHG emissions reductions associated with the measures in the RCAP are sufficient to meet the state-level target established by SB 32 and meet Humboldt's 2030 climate action target. The RCAP also makes substantial progress towards Humboldt's 2045 target, which aligns with the state-level carbon neutrality target established by AB 1279.

Figure 5 Humboldt GHG Emission Reduction Goals

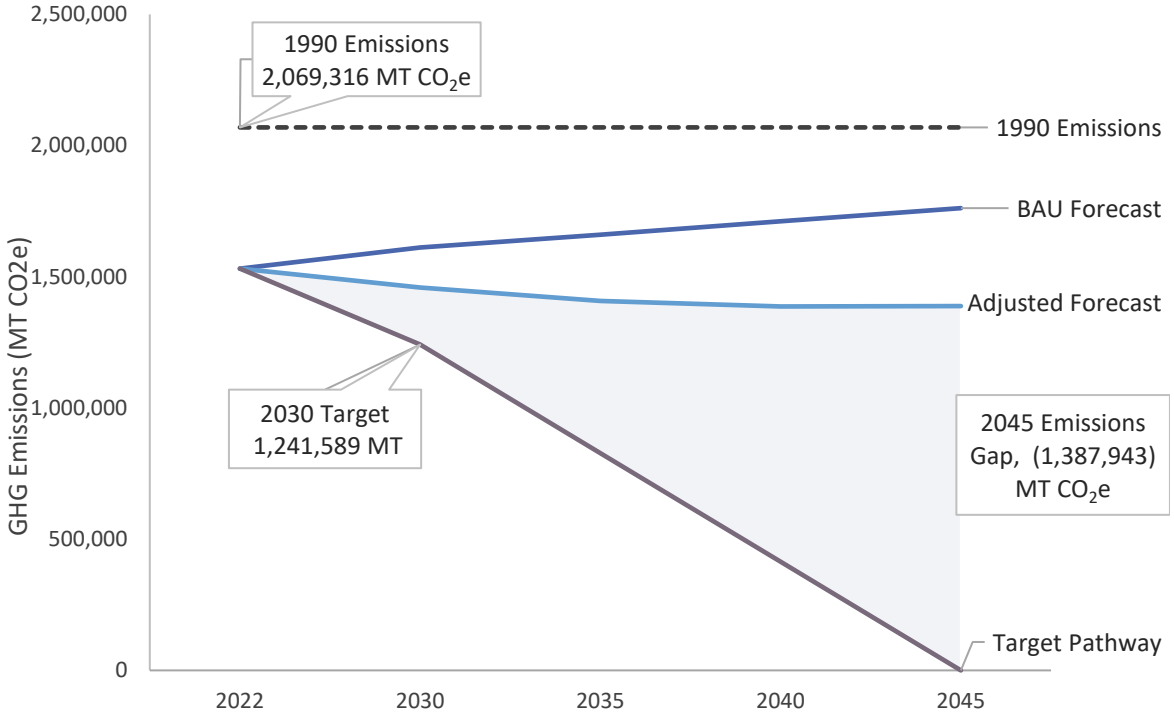


Table 2 Humboldt Region GHG Emissions Reduction Pathway

Emissions Forecast or Pathway	2030	2035	2040	2045
Adjusted Forecast	1,459,598	1,408,160	1,386,924	1,387,943
SB 32 Mass Emissions Target Pathway[1]	1,241,589	827,726	413,863	0
Remaining Emissions Gap	218,008	580,434	973,061	1,387,943

Notes: All values are presented in metric tons of carbon dioxide equivalent (MT CO_2e)

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

1. The target pathway is calculated by reducing 1990 mass emissions by 40 percent in 2030 and to 0 in 2045. This target pathway is consistent with both SB 32 and a trajectory set forth to achieve AB 1279.

4 GHG Emission Reduction Strategy

4.1 Strategy Development

The RCAP sets forth a roadmap for how Humboldt will reduce GHG emissions in the near term to meet the established 2030 goals and make progress towards carbon neutrality in 2045. This RCAP builds upon Humboldt's previous efforts with actions that are equitable, achievable, and implementable. The measures and actions in the RCAP were developed through a collaborative process between County staff, incorporated jurisdictions, key stakeholders, and interested parties.

The following sections detail Humboldt's mitigation strategies and the considerations made to develop them. The Measures are organized around a set of eleven Strategies to reduce GHG emissions. Each Measure is then supported by a set of Actions. The structure of the mitigation Strategies, Measures, and Actions are as follows:

- **Strategies**: Strategies describe an overall approach for reducing GHG emissions within a given sector
- **Measures**: Measures are long-range policies that the Humboldt region has established to ultimately reduce GHG emissions in line with the State. Some Measures may be further disaggregated to set goals for "urban" or "rural" regions, defined as follows:
    - **Urban:** Urban areas in Humboldt are more densely developed areas in the region with greater access to energy and transportation infrastructure. As defined by the 2020 US Census Bureau, "urban" areas either encompass at least 5,000 people or at least 2,000 housing units. Figure 6 shows the areas in Humboldt considered as urban for this RCAP.
    - **Rural:** Rural areas in Humboldt represent the dispersed communities in the region with limited access to energy and transportation infrastructure. This includes the unincorporated County as well as some incorporated cities that have similar constraints.
- **Actions:** Actions identify the programs, policies, funding pathways, and other specific commitments that will be implemented within the region. Each measure contains a suite of actions, which together have been designed to accomplish the measure goal and metrics.

Figure 6 Urban areas of Humboldt

4.2 Type of GHG Reduction Measures

The Measures and Actions can be either quantitative or supportive, defined as follows:

- **Quantitative:** Quantitative Measures result in direct and measurable GHG emissions reductions when their Actions, backed by substantial evidence, are implemented. GHG emissions reductions from these Measures and Actions are justified by case studies, scientific articles, calculations, and other third-party substantial evidence that establish the effectiveness of the reduction actions. Quantitative Measures can be summed to quantify how the region will meet its 2030 GHG emission reduction target and demonstrate progress towards the 2045 target.
- **Supportive:** Supportive Measures may also be quantifiable and have substantial evidence to support their overall contribution to GHG emission reductions. However, due to one of several factors – including a low GHG emission reduction benefit, indirect GHG emission reduction benefit, or potential for double-counting– they have not been quantified and do not contribute directly to achieving and making progress towards the region's GHG emission reduction targets. Despite not being quantified, supportive Measures are nevertheless critical to the overall success of the RCAP and provide support so that the quantitative Measures will be successfully implemented.

4.3 Key Strategy Attributes

Successful implementation of climate action requires behavioral changes and community buy-in which means balancing various factors beyond reducing GHG emissions. To best position the RCAP to achieve the Humboldt region's targets, measures are designed to embody six key attributes crucial for effective climate policy. Each key attribute emphasizes specific criteria that play an essential role in the implementation of climate action. The key attributes are:

- **Structural Change:** Establishing a program/policy/ordinance that will allow the Humboldt region to reach the target established by the Measure (e.g., ordinance or code)
- **Engagement**: Development of promotional materials to inform the community and interested parties, gain buy-in, and raise awareness of new and existing programs and opportunities.
- **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 Study**: 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 such as general funds, local income generation, bonds as well as pursuing external sources including 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)

The Cornerstone Strategy and Measure (C-1) illustrates how these key attributes integrate into a cohesive strategy designed for long-term implementation. The other Strategies and Measures

within this RCAP follow the same structure as the Cornerstone Measure, embodying the key attributes that are essential to successful implementation of the Measure and achieving GHG emissions reductions.

4.4 Co-Benefits of GHG Reduction Measures

The Humboldt region'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 help the Humboldt region reach its goals. The co-benefits identified for each Measure include:

Natural Resource Enhancement: Protects and enhances regional natural resources, safeguarding biodiversity and ecosystem services like cleaner air and water. Healthy ecosystems mitigate pollution, sequester carbon, provide species habitat, and offer recreational spaces for the community. They also help manage extreme weather effects by absorbing rainwater and reducing strain on infrastructure.

Resource Efficiency: Many GHG reduction strategies improve resource use efficiency while minimizing waste. Efficient resource use reduces environmental impact and often results in economic savings, freeing up funds for other community needs.

Public Health and Equity: Vulnerable communities are disproportionately affected by climate change. Implementing GHG reduction strategies reduces emissions, leads to cleaner air, promotes healthier lifestyles, and mitigates climate hazards like extreme heat. Ensuring equitable access to these benefits supports the health, safety, and resilience of all community members, particularly those most at risk.

Increased Resilience: Certain GHG reduction strategies enhance community resilience to climate change, and vice versa. These initiatives increase the community's ability to prepare for, mitigate, and recover from climate hazards such as extreme heat, sea level rise, flooding, wildfires, landslides, and drought.

Green Jobs: Creates or advances employment opportunities in sectors contributing to sustainability or improving environmental quality. Initiatives aimed at clean energy adoption and sustainable business practices foster well-compensated and inclusive employment opportunities. These efforts support Humboldt region's climate targets and sustained economic well-being, contributing to financial stability.

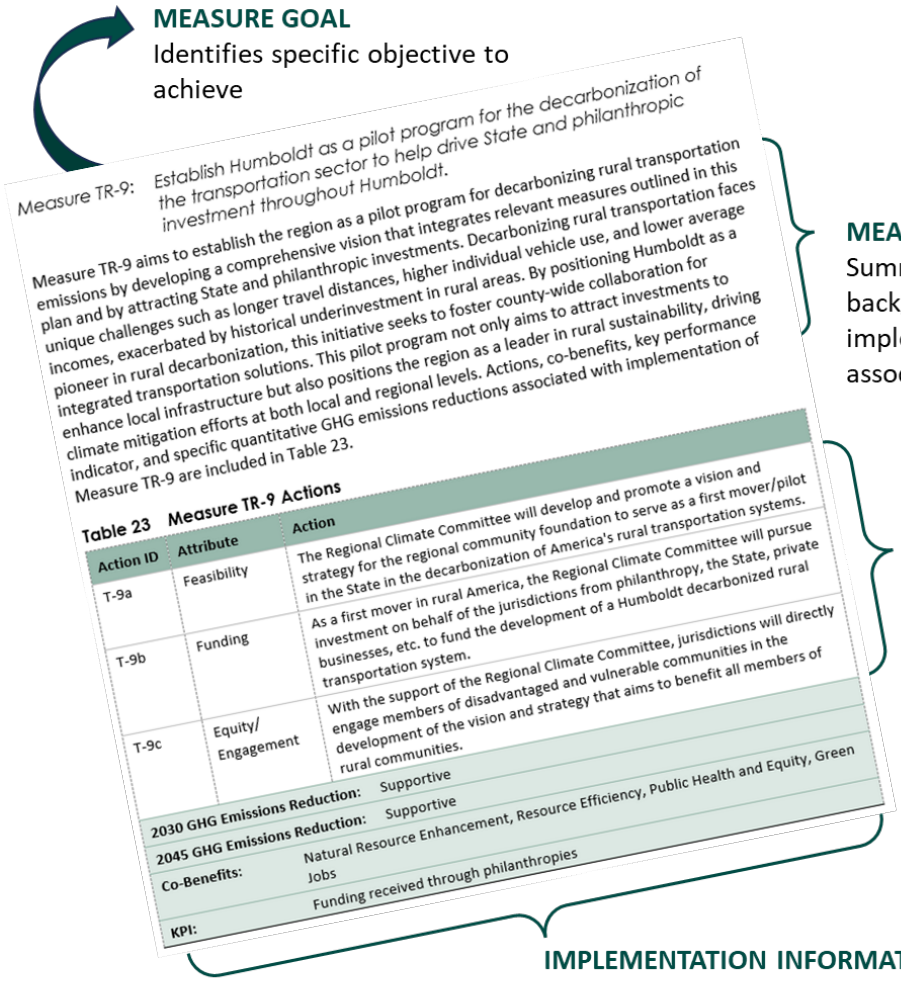
4.5 Measures

The Strategies and Measures are organized by sector (e.g., Cornerstone, Building Energy, Transportation, Waste, Water & Wastewater, Carbon Sequestration). Each topic identifies the measures and goals the region will strive to meet by 2030 and make substantial progress toward 2045 targets. The RCAP's overarching approach emphasizes leveraging a formal coalition to implement region-wide measures for impactful reduction of GHG emissions. The Cornerstone Measure exemplifies the importance of integrating key attributes outlined in the previous section, demonstrating how each attribute contributes to comprehensive measures. All measures within the RCAP adhere to the framework established by the Cornerstone Measure.

The following sections including background information on the Strategy, a description of the Measure, a summary table that includes the specific actions that make up the measure as well as several additional details such as GHG reduction potential, co-benefits, and key performance

indicators (KPI) to measure progress of implementation. Figure 7 provides an overview of how to read this section.

Figure 7 How to Read this Section



Cornerstone

A cornerstone strategy in a CAP refers to a foundational approach or key initiative that is essential for achieving the plan's overall goals. It serves as a primary focus and supports the implementation of other strategies by providing a solid framework, significant impact, or critical support. Cornerstone strategies are typically characterized by their broad scope, potential for high impact, and their role in facilitating or enabling other actions within the climate action plan.

The Humboldt Regional Cornerstone Strategy focuses on the establishment of a coalition between jurisdictions and key organizations to guide a regional approach to climate-related challenges through coordinated efforts. Given the rural nature of the region and its dispersed population, individual municipalities and even the larger incorporated cities face significant constraints in their efforts to reduce GHG emissions due to limited resources (e.g. staffing and funding). These constraints can be overcome through a coordinated and collaborative approach to RCAP implementation. Through a collaborative approach the region can more effectively identify and build efficiencies, attract and share resources (e.g., funding, staff time), and undertake regional infrastructure initiatives needed to enhance capacity and interconnectivity in sectors such as solid waste and transportation, thereby reducing GHG emissions as outlined in the RCAP Measures.

Strategy 1: Development of a regional climate coalition

Collaboration between jurisdictions in rural areas is crucial for leveraging limited resources and accessing state and federal funding earmarked for climate-related projects. Humboldt recognizes that a regional approach to implementing the RCAP is essential to achieving the significant GHG reductions needed to meet both regional and individual municipality goals. This Strategy is considered the cornerstone of the RCAP and will be the first to be implemented. As the region's first RCAP, establishing a collaborative approach to expanding and improving shared infrastructure, such as an interconnected energy and transportation system and regional waste management solutions, is necessary to successfully achieve GHG reductions in each sector.

Measure C-1: Establish a Regional Climate Committee comprised of representatives from each jurisdiction, HTA, HCAOG, HWMA, and RCEA to be administered by the County.

Measure C-1 commits the region to establishing a Regional Climate Committee and governance to serve as a regional coalition. This committee would include representatives from municipalities across Humboldt County as well as representatives from regional agencies such as the HTA, HCAOG, HWMA, and RCEA, other partner organizations, and landowner and land management organizations. The purpose of this coalition is to foster collaboration and coordination among the region to address climate-related challenges and implement effective climate action strategies. By bringing together key parties from various sectors and jurisdictions, Measure C-1 leverages collective expertise, resources, and efficiencies to tackle climate change at a regional level. The committee would support RCAP implementation through information sharing, coordination of RCAP efforts, development of joint initiatives to reduce GHG emissions, support and pursue funding, and promote sustainable development practices. The Regional Climate Committee is integral to the implementation of all RCAP Measures detailed in the following sections. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure C-1 are included in Table 3.

Table 3 Measure C-1 Actions

Action ID	Attribute	Action
C-1a	Structural	Pursue and obtain funding to create a Climate Program Manager position to lead the coordination efforts of the Regional Climate Committee. The Regional Climate Committee will be responsible for implementing RCAP measures and actions. The Climate Program Manager will facilitate the work of the Regional Climate Committee made up of responsible parties from each of the region's jurisdictions and agencies. The Manager will work with the Committee to utilize the RCAP as a strategic plan outlining the goals of the Coalition. The Manager will coordinate with staff of the participating jurisdictions and agencies to undertake the work directed by the Committee. Finally, the Manager will develop an annual progress report on RCAP implementation annually to City Councils and County Supervisors to measure progress and establish accountability in achieving RCAP emissions reduction goals.
C-1b	Structural	The Program Manager represents a larger staff need to fulfill the mission of the Regional Climate Committee and will obtain funding to support several staff in implementing and tracking the RCAP.
C-1c	Structural	The Regional Climate Committee will develop and provide models, pilot programs, and template policies or ordinances that enable each jurisdiction in the region to implement uniform changes and facilitating local communities in making the necessary structural adjustments to reduce GHG emissions. This will reduce inefficiencies and duplication of effort while ensuring a coordinated regional approach.
C-1d	Engagement	Develop and distribute promotional materials and programs across the region to inform the community, gain buy-in, and promote awareness of new and existing programs and opportunities. Leveraging the Regional Climate Committee to prepare such materials will allow for limited resources in the region to be pooled on such efforts thereby reducing strain on jurisdictional staff. This engagement effort should include strategies to plan and address differences in opinions/understanding regarding climate change and should relay the message that all community members (whether in urban or rural areas) need to participate in local efforts.
C-1e	Equity	Leverage regional programs to engage and support frontline communities that may experience secondary impacts or not benefit directly from the measures' objectives. Ensure these communities can access regional resources or funding opportunities to mitigate identified impacts and benefit the entire community. The Regional Climate Committee will be charged with engaging with regional programs and identifying appropriate community-based organizations to lead and guide such engagement efforts to ensure voices of vulnerable communities are involved in RCAP implementation and planning.
C-1f	Feasibility Study	Utilize regional resources to conduct efficient regional studies, avoiding redundancy, that provide a clear understanding of the details, obstacles, and feasibility of proposed programs. This includes necessary analyses to identify the best path forward or the feasibility of implementing specific measures. The Regional Climate Committee will aid in identifying the regional expertise and coordinating studies across the region to limit duplication of efforts.
C-1g	Funding	Collaborate regionally to identify and pursue relevant and impactful grants and financial backing to facilitate RCAP implementation across the region. Ensure resources and efforts are directed towards securing funds that can be

Action ID	Attribute	Action
		distributed across the region, such as grants or rebates to support measure implementation and adequate program staffing. Direct the Regional Climate Committee to pursue 3-5 grants for regional efforts to meet RCAP goals per year.
C-1h	Partnership	Use the collaborative network of local jurisdictions, agencies, and community-based organizations (CBOs) to attract additional internal and external support and expertise. This includes engaging community organizations that are well-positioned to consistently and sustainably advance specific measures. Leverage the Regional Climate Committee to identify and provide assistance to local jurisdictions' high priority project pursuits which support the RCAP.
C-1i	Educational	Work with the school districts in incorporated cities and unincorporated Humboldt to create a school outreach program or curriculum to educate children from a young age on the RCAP and climate change.
C-1j	Partnership	The RCC will communicate with the local Tribes to collaborate on their existing and future efforts to reduce GHG emissions in the region. This collaboration and future partnerships will leverage both agencies ability to obtain funding to complete overlapping work to reduce GHG emissions.
2030 GHG Emissions Reduction:		Supportive/Critical
2045 GHG Emissions Reduction:		Supportive/Critical
Co-Benefits:		Public Health & Equity, Increased Resilience, Green Jobs
KPI:		Establishment of Committee; Progress reports

Building Energy

RCAP measures for the building energy sector focus on transitioning to renewable energy sources, carbon-free electricity, and building decarbonization. California is transitioning to 100 percent renewable and zero-carbon electricity by 2045, thus, when all-electric buildings are fully electrified, they will be powered by carbon-free electricity, and their operating energy footprint becomes carbon-free. Building energy makes up approximately 14 percent of Humboldt's GHG profile. Of that, approximately 13 percent of building energy emissions are due to the use of natural gas and 1 percent due to indirect emissions associated with electricity use. In California, two of 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 percent 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.

Strategy 2: Increase carbon-free electricity

GHG emissions associated with electricity consumption are related to the source used to generate the electricity (i.e., combustion of natural gas, solar, geothermal). Currently, retail electricity providers, like PG&E and RCEA, are required by SB 100 to procure at least 60 percent of the electricity from eligible renewable energy sources (i.e., solar, wind, geothermal, small hydroelectric, and biomass) by 2030 and 100 percent eligible renewable resources and zero-carbon resources by 2045. PG&E offers several rate plans that ranged from consisting of 38 percent eligible renewables in the base rate to 100 percent solar in the Green Saver rate in 2022. In 2022, RCEA's RePower electricity option sourced 50 percent of its supply from eligible renewable sources, while the

RePower+ option supplied 100 percent from solar, wind, and eligible hydroelectric at a GHG emissions rate of zero.[42] RCEA is currently on track to provide all customers with electricity that is sourced from 100 percent net-zero-carbon emission renewable sources by 2030, exceeding the state requirements by 15 years.[43] GHG emission reductions related to this strategy would result from exceeding state requirements for 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 throughout the day and the supply is often mis-matched with the demand, straining the electricity grid. However, recently California exceeded 100 percent of energy demand with renewables for a record 30 days.[44] 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 always provided when needed at a reasonable cost and installation or use of energy storage systems (e.g., battery banks). As technologies continue to improve and more infrastructure is developed, an increasing and more consistent supply of renewable energy will be available.

Measure BE-1: By 2030, source 90% of grid-supplied electricity from renewable and carbon-free sources.

Measure BE-1 aims to increase the share of electricity-supplied to the region that is sourced from renewable and carbon-free sources such that 90 percent of all electricity consumed in the Humboldt region is carbon-free. Currently, electricity customers in the Humboldt region are automatically enrolled in RCEA's RePower electricity option that is 50 percent eligible renewable but may choose to 1) opt-up to the RePower+ option that is 100 percent eligible renewable, 2) opt-out to receive electricity directly from PG&E at the standard rate which is 38 percent eligible renewable, or 3) opt-out to procure electricity at wholesale directly from electricity generators (i.e., direct access which range in the emission factor depending on the energy profile). Direct access is only available to a limited number of utility customers. Based on electricity data provided by RCEA and region wide electricity use from the CEC, RCEA currently supplies 77 percent of all electricity consumed in the region. RCEA currently offers electricity options with a GHG emission rate lower than the standard electricity options offered in the region. As RCEA is on track to provide 100 percent renewable electricity to all customers by 2030, this Measure would significantly aid in decarbonizing the region's building energy sector. Increasing the percentage of community electricity supplied by RCEA or a comparable 100 percent renewable program in the region would reduce GHG emissions associated with electricity consumption. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure BE-1 are included in Table 4.

[42] California Energy Commission (CEC) (2022). *2022 Power Content Label: Redwood Coast Energy Authority*. Accessed May 12, 2024, from https://www.energy.ca.gov/filebrowser/download/6060.

[43] Redwood Coast Energy Authority (RCEA) (2019). *RePower Humboldt*. Accessed May 5, 2024, from https://redwoodenergy.org/wp-content/uploads/2020/06/RePower-2019-Update-FINAL-.pdf

[45] By 2045, all electricity providers are expected to be entirely carbon-free and use eligible renewable sources, thus no further emissions reduction are attributed to increasing the procurement of carbon-free electricity in 2045.

Table 4 Measure BE-1 Actions

Action ID	Attribute	Action
BE-1a	Feasibility	Coordinate and support Redwood Coast Energy Authority (RCEA) in developing an effective energy strategy. Strategy should include conducting an assessment to identify the potential obstacles and detail the steps to providing provide renewable and carbon-free power and decarbonization programs outlined in the RePower Humboldt plan such as: 1. Future Capacity constraints 2. Customer solar installations 3. Customer electrification support 4. EV charging infrastructure buildout 5. Building electrification 6. Advanced biofuel infrastructure 7. Evaluate enrollment rates in RCEA programs annually to understand why residents and businesses opt out or opt to procure standard grid electricity. Use results to adjust strategy for increasing enrollment accordingly
BE-1b	Structural	Through the Regional Climate Committee develop a template policy or ordinance for regional jurisdictions to use to require new commercial and industrial developments to acquire electricity from renewable and carbon-free energy sources such as enrolling with RCEA, incorporating on-site renewable generation, or enrolling in PG&E's 100 percent renewable rate. For each jurisdiction, adapt the templated policy or ordinance as necessary and adopt by 2026.
BE-1c	Partnership	Collaborate across the region with interested parties including tribes, labor unions, workforce development boards, State agencies, colleges, universities, industries, and community organizations to increase local energy workforce development. Partner with RCEA, Humboldt State University, and College of the Redwoods to actively develop education and certifications for electrical and construction trades by 2027 to ensure develop a skilled workforce ready to meet the region's energy needs.
BE-1d	Engagement	Leverage the Regional Climate Committee to work with RCEA to reduce opt-down rate for new customers to no more than 2 percent. Develop promotional educational materials to inform community members on available incentives and benefits of clean energy and energy efficiency.
BE-1e	Equity	Engage with the community and partner with community organizations to facilitate increased communication, technical assistance, and access to energy incentives through the California Alternative Rates for Energy (CARE), Family Electric Rate Assistance (FERA), and Low-Income Home Energy Assistance Program (HEAP) programs for low/moderate income households.
BE-1f	Funding	Work with RCEA to expand and advertise regional energy funding programs as described in the RePower Humboldt plan. Facilitate Humboldt residents and businesses in utilizing energy finance programs such as, but not limited to, the Property Assessed Clean Energy (PACE) program. Conduct targeted outreach to public entities, such as public schools, that are eligible for State and Federal Program loans.
BE-1g	Funding	Coordinate through the Regional Climate Committee to establish and administer a multi-jurisdictional staff position dedicated to identifying and pursuing funding opportunities to support County-wide educational programs,

Action ID	Attribute	Action
		assisting in equitable energy workforce expansion outreach, and providing RCEA with additional funds to expand incentives or subsidies for the community to increase community enrollment. If establishing a dedicated staff position is not feasible, work with the Regional Climate Committee and regional partners to identify resource sharing opportunities for pursuing funding opportunities such as rotating the responsibility across designated agency employees.
2030 GHG Emissions Reduction:	15,403 MT CO_2e	
2045 GHG Emissions Reduction:	0 MT CO_2e[45]	
Co-Benefits:	Public Health and Equity	
KPI:	Change in Humboldt Electric emission factor (%)	

Measure BE-2: Increase the development of micro-grids and energy storage across the region to support RCEA's RePower Humboldt goals of enhancing grid capacity and facilitating the electrification of buildings and transportation.

A primary energy challenge faced in the region is having sufficient infrastructure capacity to support initiatives such as electrification. This limitation is exacerbated by slow PG&E response and the inability to meet requested capacity upgrades throughout the county. In spite of these challenges, RCEA has made significant strides to increase electricity generation, connectivity, and capacity in the region through development of nano-grids, micro-grids, and battery storage space. Micro-grids can operate independently from the traditional grid, combined with energy storage, improve grid reliability and resilience by storing excess energy during low demand and supplying it during peak periods. Measure BE-2 calls for the regional enhancement of energy grid capacity by developing micro-grids and energy storage systems, supporting RCEA's goals established in the RePower Humboldt Plan. Micro-grids, which can operate independently from the traditional grid, combined with energy storage, improve grid reliability and resilience by storing excess energy during low demand and supplying it during peak periods. This measure provides increased support to RCEA's goals to facilitate greater energy flexibility, resilience, and allow for future electrification initiatives. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure BE-2 are included in Table 5.

Table 5 Measure BE-2 Actions

Action ID	Attribute	Action
BE-2a	Structural/ Engagement	Develop permit streamlining programs that can be adopted by local jurisdictions to facilitate the streamlined implementation of renewable energy projects as identified in regional energy feasibility study and RCEA RePower Humboldt goals such as energy storage projects, residential and commercial solar installation, and microgrid development.
BE-2b	Partnership	Direct the Regional Climate Committee to work with RCEA to develop a plan for leveraging CPUC's recently passed Limited Generation Profile option to

[45] By 2045, all electricity providers are expected to be entirely carbon-free and use eligible renewable sources, thus no further emissions reduction are attributed to increasing the procurement of carbon-free electricity in 2045.

Action ID	Attribute	Action
		maximize solar installation developments in alignment with RCEA's RePower Humboldt goals throughout the region.
BE-2c	Engagement	Engage with the local community, key interested parties, and local-based community organizations representing disadvantaged and vulnerable communities to raise awareness about alternative renewable energy and nano-grid opportunities available through RCEA. Emphasize the increased accessibility to electrification as well as the economic and environmental advantages of electrification while addressing concerns related to emergency response to minimize exceptions. Publicize the connection between RCEA nano-grid efforts and the increased ability to electrify leading to cost savings, funding opportunities, environmental benefits, and flexibility of electrification through jurisdiction websites and permit counters.
BE-2d	Partnerships	As part of Regional Climate Committee responsibilities identified in Measure C-1, engage with RCEA to track progress toward targets set in RCEA's RePower Humboldt plan and identify additional opportunities for local jurisdictions to alleviate barriers to goals set in RCEA's RePower Humboldt plan.
BE-2e	Feasibility Study	As part of Regional Climate Committee responsibilities work with RCEA and the Schatz Energy Research Center to identify locations throughout the county that are priority for utility-scale, nano-grid, and micro-grid solar, hydropower, and/or wind energy generation based on aspects such as land availability and suitability, infrastructure needs, resilience, and energy access equity. Coordinate with PG&E on interconnection needs and identify strategies with PG&E of how to best support capacity building on the grid related to micro-grid projects.
BE-2f	Equity	Conduct an equity assessment across the region that includes the identification of potential cost barriers to residential solar development, particularly for low income and rural communities at the end of PG&E distribution infrastructure and identify feasible sites for solar and battery installation and potential funding sources.
BE-2g	Partnership/ Equity	Identify facilities that are suitable to operate as regional resilience hubs to protect people from climate related issues. Create a priority list of these facilities with particular focus on servicing disadvantaged and vulnerable communities and work with RCEA to prioritize implementation of on-site microgrid and energy storage on identified.
BE-2h	Funding	Regional Climate Committee will work with RCEA to pursue regional funding opportunities that can be used to develop resilient microgrids and incentivize new housing developers to install solar and on-site batteries, particularly for affordable housing developments. Aim to pursue 3 grant or funding opportunities annually focused on microgrids and/or energy storage expansion.
2030 GHG Emissions Reduction:		Supportive
2045 GHG Emissions Reduction:		Supportive
Co-Benefits:		Resource Efficiency, Public Health and Equity, Increased Resilience
KPI:		Micro-grid project completion (#)

Measure BE-8: Advocate for Offshore Wind developers to fund transmission infrastructure and work with PG&E, the California Public Utilities Commission (CPUC), and other related agencies to build electrical transmission infrastructure to supply Humboldt with energy produced by the future offshore wind projects which will increase regional supply and resilience.

While the Humboldt Offshore Wind projects are expected to provide economic growth benefits to the region, there is concern that energy generated by the project will not be accessible by the region due to infrastructure limitations. Measure BE-8 focuses on advocating for the funding and development of appropriate electrical transmission infrastructure by offshore wind developers, PG&E, CPUP, and other related agencies so that the community can benefit from the Humboldt Offshore Wind projects. Receiving access to this electricity would increase the region's energy resilience and increase capacity to meet the RCAP electrification goals. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure BE-8 are included in Table 6.

Table 6 Measure BE-8 Actions

Action ID	Attribute	Action
BE-8a	Partnership	Dedicate Regional Climate Committee staff time to work with local organizations (e.g. 350Humboldt, Redwood Region Climate & Community Resilience Hub, COREHub) to petition the CEC and Humboldt Offshore Wind developers, PG&E, the California Independent System Operator, the CPUC, and other relevant decision makers to implement electricity transmission and distribution to the Humboldt region.
BE-8b	Equity	Have the Regional Climate Committee advocate to the CEC and State to allow for an equitable rate tiering law to provide affordable rates for LIDAC communities in Humboldt County.
BE-8c	Partnership	Leverage the Regional Climate Committee to work with California Independent System Operator (ISO), California Public Utilities Commission (CPUC), the California Energy Commission (CEC), the Humboldt Offshore Wind projects and PG&E to identify pathways to establish equitable regional access to electricity produced by the offshore wind projects. This may include supporting permitting and development processes necessary for the proposed new Humboldt 500 kV substation as well as advocating to include distribution capacities at the substation for Humboldt County.
BE-8d	Funding	Direct the Regional Climate Committee to evaluate and pursue opportunities for the Environmental and Climate Justice Community Change Grant through the Inflation Reduction Act or other available programs to advance clean energy from the wind-farm projects. Aim to apply for at least 3 grants annually.
BE-8e	Engagement	Lobby PG&E, the CPUC, and other related agencies to fund and build enhanced energy transmission infrastructure throughout Humboldt County to ensure that renewable energy produced by the offshore wind projects can be distributed throughout the County. Also lobby offshore wind developers to contribute to the funding of such transmission upgrades.
2030 GHG Emissions Reduction: Supportive		

Action ID	Attribute	Action
2045 GHG Emissions Reduction:	Supportive	
Co-Benefits:	Public Health and Equity, Increased Resilience, Green Jobs	
KPI:	Obtaining funding, development plans including interconnection	

Strategy 3: Decarbonization of existing construction

Approximately 92 percent of GHG emissions from building energy usage are related to natural gas consumption. Electrifying existing 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 building stock can be electrified or otherwise decarbonized. Actions that rely on voluntary replacement of natural gas equipment or ordinances requiring decarbonization at end-of-life replacements have been shown to reduce GHG emissions by approximately 10-30 percent, 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 to four 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. RCEA currently promotes energy efficiency and efficient electrification with rebates and informational resources.

Measure BE-3 Urban: Reduce existing residential building natural gas consumption by 4% by 2030 and 74% by 2045.

Humboldt currently experiences limitations with electrification initiatives due to electric grid constraints, limited development access, and old housing stock. Moreover, not all residential properties in Humboldt are connected to the natural gas infrastructure or electrical infrastructure. Those residents that are tied into the electrical grid have an opportunity for decarbonization due to grid available renewable electricity. Therefore, Measure BE-3 aims to assess and implement currently viable opportunities for electrification in the region's urban areas (i.e. all incorporated cities with natural gas infrastructure). This measure charts the path to reduce existing residential natural gas consumption by approximately 4 percent by 2030 and 74 percent by 2045 to reduce GHG emissions in urban areas. The measure also focuses on setting a pathway for success for future electrification initiatives through household weatherization upgrades, particularly in low-income households. Weatherization will aid in decreasing energy consumption, reducing utility costs, and increasing future cost benefits of electrification. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure BE-3 Urban are included in Table 7.

Table 7 Measure BE-3 Urban Actions

Action ID	Attribute	Action
BE-3a Urban	Feasibility Study/ Equity	Leverage the Regional Climate Committee to lead the development of a decarbonization plan for urban areas that assesses the feasibility and cost for electrification retrofitting for residential buildings as well as identifies potential equity concerns/impacts. The plan should identify strategies and/or specific projects to decarbonize 4 percent of existing residential and multi-family buildings by 2030 and strategies for increasing infrastructure readiness to electrify through 2045. The plan should give consideration for increased electricity capacity needs and RCEA's RePower Humboldt goals to meet increased capacity need. The plan should also identify a variety of equitable decarbonization solutions and potential projects such as partial electrification and increased energy efficiency options for mixed-fuel residences that face barriers to full electrification. The study should also identify the funding and financing requirements necessary to support the community in this transition.

Action ID	Attribute	Action
BE-3b Urban	Engagement	As part of Regional Climate Committee responsibilities identified in Measure C-1, petition PG&E to help identify priority areas for electric grid expansion projects to increase regional electric grid capacity and islanding capabilities to allow for increased building electrification capacity.
BE-3c Urban	Structural	Develop a home energy advisory service administered by the Regional Climate Committee that assists existing homeowners to better understand the cost of building decarbonization options including partial and full home electrification, identifies service providers, and provides support for homeowners to access electrification incentives from the Energy Smart Homes program.
BE-3d Urban	Funding	Work with the Regional Climate Committee to identify and pursue funds through CARB, the Inflation Reduction Act, and the Infrastructure Investment and Jobs Act including: 1. DOE block grants 2. On Bill financing through Utility Bills 3. Green bonds 4. Grant Anticipation Notes or Short-Term Loans 5. Tax exempt lease purchases 6. Energy as a service 7. Energy Performance Contracting from Energy Service Companies (ESCOs)
BE-3e Urban	Engagement	Work with the Regional Climate Committee to develop and manage educational/promotional materials that each jurisdiction can use to educate the community on ways to finance home decarbonization. Materials should include information and links to existing available rebates for Heat Pumps, Weatherization, Smart Thermostats, Appliances, and Pool Pumps as well as other rebates offered through RCEA of the local jurisdiction if applicable.
BE-3f Urban	Partnership	Work with the local contractors, realtors, homeowner associations, landlords, and labor unions to develop a comprehensive training program, including hosting workforce development trainings discussing the benefits and technical requirements of electrification as well as addressing interested party concerns regarding electrification.
BE-3g Urban	Equity	Develop a fund for low income and affordable housing electrification pilot projects in collaboration with affordable housing owners, utilities, and the community. Work with RCEA to develop a program to offset cost for occupants using financing and through the sourcing of grant funds to subsidize cost.
2030 GHG Emissions Reduction:		2,603 MT CO_2e
2045 GHG Emissions Reduction:		55,866 MT CO_2e
Co-Benefits:		Resource Efficiency, Public Health and Equity
KPI:		Reduction in natural gas consumption

Measure BE-3 Rural: Reduce existing residential fossil-fuel consumption in households not connected to natural gas infrastructure by 2% by 2030.

Much of rural Humboldt lies at the edge of natural gas infrastructure, and experiences reduced electric grid capacity compared to other areas in the County. These households typically rely on other fossil fuels such as propane or diesel, in place of natural gas. Measure BE-3 Rural aims to reduce fossil fuel usage in residential households not connected to natural gas infrastructure by 2 percent by 2030. Reducing fossil-fuel use in rural areas not only helps decrease GHG emissions but also encourages the adoption of alternative energy sources such as electricity or renewable fuels. Off grid solar is legal and the technology is improving. However, there are complications associated with permitting related to building, health and environmental codes. The decarbonization transition in rural communities supports the overall decarbonization efforts and aligns with other measures aimed at decarbonizing the regional energy supply. This measure also provides rural areas with weatherization assistance that will help reduce consumption rates and provide community benefits such as decreased utility costs. By focusing on these rural households, this measure seeks to make the benefits of a low-carbon transition accessible to all segments of the community. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure BE-3 Rural are included in Table 8.

Table 8 Measure BE-3 Rural Actions

Action ID	Attribute	Action
BE-3a Rural	Feasibility Study	Regional Climate Committee to conduct a feasibility study to establish local low-carbon fuel alternative, such as renewable propane, sourced from local resources such as forest biomass waste which can be used as direct substitutes for propane or diesel building fuel. The feasibility study should consider procurement and cost considerations with a focus on equity for low-income households, and map communities with significant propane and wood fuel use to identify accessibility strategy for acquiring alternative fuels (e.g. renewable propane, sustainably harvested wood products, renewable diesel) and/or undergoing home electrification.
BE-3b Rural	Structural	As part of Regional Climate Committee responsibilities identified in Measure C-1, petition PG&E to help identify priority areas for rural electric grid expansion projects to increase regional electric grid capacity and islanding capabilities to allow for increased building electrification capacity.
BE-3c Rural	Engagement	Promote existing available rebates to rural communities for Heat Pumps, Weatherization, Smart Thermostats, Appliances, and Pool Pumps to educate the community on ways to finance electrification or otherwise decarbonize their residences. Provide assistance to rural homeowners in assessing the viability and permitting of installing off-grid solar and battery alternative energy sources on their homes and finance options.
BE-3d Rural	Structural	For viable alternative fuel sources identified in a feasibility study, establish procurement and distribution supply centers within easy access of rural communities.
BE-3e Rural	Funding	The Regional Climate Committee will lead the effort to identify, access, and provide funding assistance for the procurement of alternative fuels, such as biomethane, in alignment with SB 1383 procurement requirements. Advocate to the California Public Utilities Commission (CPUC) for inclusion of alternative

Action ID	Attribute	Action
		low-carbon fuels substitution, such as renewable propane, to be allowed in ratepayer funded programs including energy efficiency programs.
2030 GHG Emissions Reduction:		Supportive[46]
2045 GHG Emissions Reduction:		Supportive
Total GHG Emission Reductions from Measure: Supportive		
Co-Benefits:		Resource Efficiency, Public Health and Equity
KPI:		Reduction in fossil fuel use for residences

Measure BE-4: Reduce existing nonresidential building natural gas consumption by 5% by 2030 and 79% by 2045.

In the region there is an opportunity to reduce natural gas consumption in the nonresidential sector through building code or permitting requirements. To achieve greater reductions in natural gas consumption, this measure aims to require electrification of feasible equipment in association with major renovations, as defined by local jurisdictions. Measure BE-4 puts the Humboldt region on a path to reduce commercial and mixed-use natural gas consumption by 5 percent by 2030 and 79 percent by 2045 to reduce GHG emissions. This is in alignment with RCEA initiatives and experience in building out alternative electricity sources which can aid in electrification of commercial businesses. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure BE-4 are included in Table 9

Table 9 Measure BE-4 Actions

Action ID	Attribute	Action
BE-4a	Feasibility Study	As part of the development of the decarbonization plan led by the Regional Climate Committee referenced in Measure BE-3 Urban, identify nonresidential building electrification barriers and develop a nonresidential building decarbonization strategy with analysis supporting future adoption of a nonresidential building decarbonization ordinance. The plan should give consideration for increased electricity capacity needs and for other decarbonization strategies that would be needed to reduce nonresidential natural gas consumption by at least 5 percent. As part of strategy development, conduct outreach to small businesses to understand potential equity impacts of a decarbonization policy. The plan should also assess ordinance parameters for including large scale renovation as part of the new commercial building ordinance requirements established for each organization (Measure BE-6).
BE-4b	Structural	Work with the Regional Climate Committee to develop a template Commercial Energy Performance Assessment and Disclosure Ordinance for commercial and multi-family buildings to be adopted within each jurisdiction by 2027. The ordinance should require energy use disclosure consistent with State law (AB 1103) and the use of the ENERGY STAR Portfolio Manager benchmarking tool. Include regulatory mechanism (e.g., permitting and

[46] Emissions reductions associated with this measure were conservatively not quantified due to data limitations. See Appendix C for further details.

Action ID	Attribute	Action
		approval requirements, building codes and standards modification) that limits expansion of natural gas infrastructure and incentivizes appliance replacement.
BE-4c	Structural	Establish streamlined permitting in each jurisdiction for energy efficiency technologies, onsite renewable energy, and battery storage in buildings and critical facilities that require power during emergencies or power outages. Incorporate equity considerations into permitting process for all other building battery storage including prioritization, rebates, and outreach.
BE-4d	Engagement/ Funding	As part of Regional Climate Committee responsibilities identified in Measure C-1, develop an outreach campaign to promote building decarbonization and include items in the program such as: 1. Conduct engagement efforts for the commercial and industrial sector to identify ways jurisdictions and the Regional Climate Committee can support commercial energy storage installations and neighborhood scale microgrid opportunities 2. Facilitate funding opportunities for commercial business electrification by identifying and supporting grant opportunities available to the community, prioritizing small and frontline community owned businesses 3. Use feedback provided during the community outreach process for small businesses to mitigate potential equity impacts of a future building performance program 4. Distribute utility bill inserts to advertise the incentive programs or grants available and the cost benefits of electric appliances 5. Target outreach to businesses, builders, developers, local contractors, and property managers with information describing the financial benefits of replacing natural gas appliances with all electric appliance when they apply for permits 6. Provide informational webinars and an updated website to advertise and promote All-Electric Building Initiative rebates and incentives 7. Promote the use of the Energy Star Portfolio Manager program and energy benchmarking training programs for nonresidential building owners
2030 GHG Emissions Reduction:		3,821 MT CO_2e
2045 GHG Emissions Reduction:		42,887 MT CO_2e
Co-Benefits:		Resource Efficiency, Public Health and Equity
KPI:		Reduction in natural gas consumption in nonresidential buildings

Measure BE-7: Decarbonize 30% municipal buildings and facilities by 2030.

Measure BE-5 commits the jurisdictions within the region to lead by example through decarbonizing municipal buildings and facilities. Local government leadership in building electrification plays a crucial role by setting a standard for the community, developing a clear understanding of hurdles and opportunities, demonstrating the feasibility of reducing fossil fuel reliance, and building trust among residents and businesses. These initiatives also provide practical insights for policymaking, drive technological advancements, and can serve as educational tools. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure BE-7 are included in Table 10.

Table 10 Measure BE-7 Actions

Action ID	Attribute	Action
BE-7a	Structural	Regional Climate Committee to develop a template resolution for each jurisdiction to decarbonize 30 percent of municipal buildings and facilities by 2030 and 100 percent by 2045 by retrofitting natural gas appliances with electric alternatives, conversion of streetlights to solar or LED, and install on-site electricity generation and storage capacity. Include in the resolution an 'electric first' purchasing policy for any equipment or appliances in need of replacement.
BE-7b	Feasibility Study	Coordinate with the Regional Climate Committee and RCEA to conduct energy audits of municipal buildings to establish a baselines of current energy consumption and identify the largest energy users or municipal buildings with the greatest natural gas consumption. Utilize audit results to prioritize municipal buildings to decarbonize. Conduct follow-up energy audits every 3 years to track progress. Leverage data from buildings reporting to the Building Energy Benchmarking Program established under AB 802[47] where possible to reduce labor.
BE-7c	Feasibility Study	Develop a study through the Regional Climate Committee which estimates renewable energy generation on County and local jurisdiction facilities, identifies a priority list of sites which may serve as regional resilience hubs, and a proposed schedule for implementing the prioritized energy projects. The study should also seek to understand barriers to installing additional distributed energy resources such as solar and battery storage, or other renewable energy generation infrastructure, at municipal facilities.
BE-7d	Partnership/ Funding	Identify and pursue funding sources and partnerships needed for successful implementation as well as plan for directing resources through each jurisdiction for funding.
2030 GHG Emissions Reduction:		Supportive[48]
2045 GHG Emissions Reduction:		Supportive
Total GHG Emission Reductions from Measure: Supportive		
Co-Benefits:		Resource Efficiency, Public Health and Equity
KPI:		Reduction in natural gas consumption in municipal buildings

[47] Assembly Bill (AB) 802 became effective in 2016 and established California's energy benchmarking program requiring that both commercial and multi-family buildings over 50,000 square feet submit an energy benchmark report to the California Energy Commissions annually by June 1st.

[48] Emissions from municipal building energy are included as a subset of the nonresidential building energy sector and therefore associated GHG emission reductions are included within the community mitigation Measures for nonresidential building energy. Therefore, emissions reduction from this measure is not quantified to avoid double counting of reductions.

Strategy 4: Decarbonization of new construction

The adjusted forecast projects that natural gas usage in the community related to new buildings would increase by approximately 5 percent by 2030 and 15 percent by 2045 in residential and nonresidential buildings. Additional GHG emissions from new buildings are best combated by implementing some form of ordinance, such energy design ratings (EDR), which promote implementation of electric equipment and avoiding new natural gas connections where feasible. As such, evaluating and establishing an appropriate ordinance has the potential to avoid an increase of approximately15 percent of GHG emissions from new buildings. RCEA also currently promotes energy efficiency and efficient electrification with rebates and informational resources.

Measure BE-5: Decarbonize 95% of new residential building construction by 2027.

Electrification poses a challenge in the residential sector due to grid capacity limitations. However, electric buildings are cheaper to build than those which require natural gas and can be significantly more efficient. This measure seeks to require new construction to decarbonize and encourage developers of new residential construction to install more efficient electric equipment along with solar to meet increased EDR requirements and avoid installing natural gas meters and connections. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure BE-5 are included in Table 11.

Table 11 Measure BE-5 Actions

Action ID	Attribute	Action
BE-5a	Structural	Regional Climate Committee to develop an energy performance ordinance, EDR, reach code, or zero NO_x threshold for new residential construction that can be modified by each jurisdiction as necessary to conserve staff resources. Adopt the ordinances within each jurisdiction to decarbonize 95 percent of new residential buildings by 2027 and update every 3 years thereafter if not included within State building codes. As part of building decarbonization ordinance development and subsequent updates, consider the following: 1. Minimize the exemptions associated with the ordinance, while allowing for health and safety exemptions as necessary and exploring potential exemptions for specific use cases determined to have substantial economic development or business impacts 2. Require the submittal of an infeasibility waiver to review specific end uses where electrification is technologically infeasible 3. Require that any end-use deemed infeasible for electrification exceeds existing Title 24 energy efficiency standards and be electric ready for future electrification 4. Specify that affordable housing developments will be all-electric to ensure no stranded assets 5. Establish substantial remodel and improvement definitions to be included in the ordinance 6. Track and enforce requirement compliance through a permitting compliance program managed by each jurisdiction 7. Revise ordinance during update cycle as necessary to meet 95 percent goal
BE-5b	Feasibility	Conduct feasibility study(s) to identify local decarbonization barriers for new residential developments and develop a residential building decarbonization strategy with analysis. The feasibility study should include developing a new

Action ID	Attribute	Action
		residential building decarbonization plan that assesses the grid feasibility and cost for electrification at certain legislative threshold requirements in consideration of leveraging RCEA residential nano-grid and battery storage options. The feasibility study should assess the potential cost impacts to multifamily and affordable housing new developments and identify potential strategies for mitigating negative impacts for equitable electrification.
BE-5c	Funding/ Equity	Leverage the Regional Climate Committee to lead engagement efforts 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, the Affordable Housing and Sustainable Communities (AHSC) Program, and the California Electric Homes Program (CalEHP). Regularly investigate and leverage other incentive programs available for electrification of new buildings.
BE-5d	Engagement	Through the Regional Climate Committee, work with local contractors, realtors, homeowner associations, landlords, and labor unions to develop a comprehensive training program, including hosting workforce development trainings discussing the benefits and technical requirements of local municipality building decarbonization legislation and the most effective pathways to achieving requirements. Include information on load calculations to avoid service upgrade requirements.
BE-5e	Partnership	Partner with RCEA and PG&E to circumvent or mitigate electric utility infrastructure capacity constraints.
BE-5f	Partnership	Collaborate with RCEA to develop and fund locally implemented programs to help customers in accessing financing options for energy projects and rebates for cleaner, energy efficient technology.
2030 GHG Emissions Reduction:		2,252 MT CO_2e
2045 GHG Emissions Reduction:		13,907 MT CO_2e
Co-Benefits:		Resource Efficiency, Public Health and Equity, Increased Resilience, Green Jobs
KPI: residential buildings		Change in number of residential buildings; reduction in natural gas consumption in

Measure BE-6: Decarbonize 95% of new nonresidential building construction by 2027.

More opportunities exist to electrify new nonresidential buildings than existing due to greater opportunities to establish on-site energy sources and to build for electrification at the onset of development. This measure seeks to establish EDR requirements to require new buildings to be decarbonized and encourage developers of new nonresidential construction to install more efficient electric equipment and avoid installing natural gas meters and connections. This measure also includes workforce training to highlight the benefits, applicability, and cost-effectiveness of building electrification. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure BE-6 are included in Table 12.

Table 12 Measure BE-6 Actions

Action ID	Attribute	Action
BE-6a	Structural	Adopt within each jurisdiction an energy performance ordinance, energy design rating (EDR), reach code, or zero NO_x threshold to decarbonize 95 percent of new nonresidential buildings by 2027 and update every 3 years thereafter if not included within State building codes. As part of building decarbonization legislation development and subsequent updates, consider the following: 1. Direct the Regional Climate Committee to develop a template ordinance that can be modified by each jurisdiction as necessary to conserve staff resources 2. Minimize the exemptions associated with the ordinance, while allowing for health and safety exemptions as necessary and exploring potential exemptions for specific use cases determined to have substantial economic development or business impacts 3. Require the submittal of an infeasibility waiver to review specific end uses where electrification is technologically infeasible 4. Require that any end-use deemed infeasible for electrification exceeds existing Title 24 energy efficiency standards and be electric ready for future electrification 5. Establish substantial remodel and improvement definitions to be included in the ordinance 6. Enforce requirement compliance through the same permitting compliance program as for residential building decarbonization 7. Establish EDR requirements for new non-residential buildings that incentivize electrification and, in a case, where electrification is infeasible, requires higher energy efficient and low emissions equipment to meet the EDR 8. Track effectiveness of ordinance through permitting compliance program and revise ordinance during update cycle as necessary to meet 95 percent goal
BE-6b	Feasibility	Conduct feasibility study(s) to identify decarbonization barriers for commercial buildings and develop a commercial building decarbonization strategy with analysis supporting future adoption of commercial decarbonization legislation. The feasibility study should include a comprehensive nonresidential building electrification plan that assesses the grid feasibility and cost for electrification and opportunities to mitigate grid and cost barriers by leveraging RCEA microgrid and battery storage options. The feasibility study should assess potential decarbonization legislation exemptions for commercial and industrial operations that are significantly restricted by available technology for electrification.
BE-6c	Funding	Connect developers with RCEA to identify applicable incentive programs in line with RCEA RePower goals that could benefit new building developments such as microgrids which can aid businesses in overcoming restrictions to electrification or decarbonization of processes.
BE-6d	Engagement	Through the Regional Climate Committee, work with local contractors, realtors, homeowner associations, landlords, and labor unions to develop a comprehensive training program, including hosting workforce development trainings to discuss the benefits and technical requirements of decarbonization.

Action ID	Attribute	Action
BE-6e	Partnership	Partner with RCEA and PG&E to establish a clear path for electrification of new nonresidential buildings which meet EDR requirements and circumvent or mitigate electric utility infrastructure capacity.
2030 GHG Emissions Reduction: 1,374 MT CO_2e		
2045 GHG Emissions Reduction: 8,492 MT CO_2e		
Co-Benefits: Resource Efficiency, Public Health and Equity, Green Jobs		
KPI: Change in number of nonresidential buildings; reduction in natural gas consumption in nonresidential buildings		

Transportation

On- and off-road transportation makes up approximately 81 percent of Humboldt's regional GHG profile. Of that, approximately 90 percent of transportation GHG emissions are due to on-road transportation. The primary strategies to reduce transportation involve mode shift away from single-occupancy vehicles to reduce VMT and decarbonizing the remaining vehicle miles traveled (VMT). Reducing VMT consists of transitioning residents and visitors out of single-occupancy vehicles and into active transportation mode options (i.e., walking and biking) and public and shared transit options (e.g., public buses, rail, carpools) by improving these mode options and safety and adopting policies to discourage single-occupancy vehicle commutes. Additionally, land use changes such as promoting jobs and amenities to be located near residents can help reduce the region's average trip length as well as encourage mode shifts to active or public transit. Working with local businesses and governments to develop flexible work policies that promote working from home in conjunction with improved telecommunication to accommodate remote work can also reduce VMT. VMT reduction is further supported by the use of VMT thresholds consistent with the achievement of the state's climate goals. The remaining VMT will then be decarbonized by increasing the adoption of zero-emission vehicles (ZEVs) and using low-carbon fuels for off-road equipment or other vehicle types that do not yet have an electric alternative. When combined with renewable and carbon-free electricity, electric vehicles (EVs) eliminate GHG emissions from fossil fuel combustion and transition commutes to a zero-emission operational footprint.

Strategy 5: Shift driving to walking and biking

The region currently supports active transportation through emphasis of complete streets to continue increasing 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 within the region. 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. 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 percent, though this level of change requires extensive change in infrastructure and behavior. Behavior change is commonly driven by education, or incentives and disincentives, such as implementing paid parking, which promote a change.

Measure T-1 Urban: Implement programs, such as those identified in HCAOG's RTP, to increase the mode share of active transportation in

urbanized areas from 9% to 12% by 2030, thereby achieving a regional active transportation mode share of 8%.

Community members' use of active transportation differ in urban areas that are more densely populated and near city centers or amenities compared with rural areas that are more dispersed. Though a large part of the region is considered rural, the community and local jurisdictions generally have a higher density of people and high interest in improved infrastructure for walking and biking, particularly for greater infrastructure interconnectivity between jurisdictions. Additionally, tourism in the community also uses the active transportation infrastructure. Measure T-1 Urban focuses on strategies and targets designed for the economic and city center hubs in the region which includes the incorporated cities such as Arcata, Fortuna, and Eureka. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure T-1 are included in Table 13.

Table 13 Measure T-1 Urban Actions

Action ID	Attribute	Action
T-1a Urban	Funding/ Partnerships	Regional Climate Committee to aid the urbanized areas of Humboldt by partnering with HCAOG and HTA to identify and pursue grant opportunities such as the Active Transportation Program, AARP Community Challenge, CalEPA's Environmental Justice Action Grants, and Caltrans Sustainable Transportation Planning Grants, etc., to fund active transportation projects identified in the Regional Transportation Plan. Aim to apply for at least 3 grants annually.
T-1b Urban	Engagement	In urbanized areas with high alternative transit expansion potential work with the Regional Climate Committee to facilitate community outreach on transportation alternatives and promote infrastructure improvements and expansion identified in HCAOG's Regional Transportation Plan. Continually improve methods for engaging the community, gathering input, and utilizing it to prioritize projects.
T-1c Urban	Engagement	Leverage the Regional Climate Committee to pursue and access funding to develop and maintain regional webpage and app showing pedestrian and bike trails, bike lanes and bus times and routes. Distribute active transportation maps and promotional materials to hotels and tourism centers to increase visitor use of active transportation. Advertise and promote Humboldt Bikeshare program managed by the City of Arcata, Cal Poly Humboldt, and Tandem Mobility.
T-1d Urban	Feasibility Study/ Equity	Identify equity barriers to safe bike and pedestrian infrastructure through community outreach and use of big data driven analysis as well as targeted community outreach to better understand nuanced barriers. Include prompts in outreach around ways to improve social and modal equity the active transportation systems and programs. Develop a priority list of active transportation projects from HCAOG's Regional Transportation Plan based on level of impact, expansion of inter-jurisdictional connectivity, and historically under-invested communities.
T-1e Urban	Structural	Increase inter-connectivity across the region working with HCAOG, Caltrans and the Regional Climate Committee representatives to: 1. Evaluate and prioritize land use projects and active transportation projects for their impact on increased regional connectivity

Action ID	Attribute	Action
		2. Identify hurdles limiting connectivity and use, such as last-mile commute limitations 3. Facilitate coordination across jurisdictions and rural and urban areas to plan development in a coordinated and most strategic manner 4. Apply for regional funding opportunities focused on increased inter-connection and VMT reduction 5. Apply for regional funding opportunities for maintenance needs for non-motorized transportation routes 6. Implement the VMT mitigation measures associated with VMT thresholds
T-1f Urban	Structural	The Regional Climate Committee will work with the local jurisdictions to develop road-related policies that require installation of multimodal transportation features where feasible.
2030 GHG Emissions Reduction:		1,147 MT CO_2e
2045 GHG Emissions Reduction:		2,594 MT CO_2e
Co-Benefits:		Public Health and Equity
KPI:		Change in active transportation mode share and VMT in urbanized areas

Measure T-1 Rural: Implement programs, such as those identified in HCAOG's RTP, that increase access to safe active transportation, to increase the mode share of active transportation in rural areas from 5% to 6% by 2030, thereby achieving a regional active transportation mode share of 9%.

There are more constraints for community members in rural dispersed regions to switch to active transportation in place of vehicle trips as they are often further from amenities and job centers and have less access to safe infrastructure (i.e., bikeways). Safe infrastructure that connects rural communities to economic hubs and amenities is crucial to facilitate a switch and encourage active transportation mode share. Measure T-1 Rural focuses on strategies and targets designed for rural areas within the County and small incorporated cities such as Blue Lake, Ferndale, Rio Dell, and Trinidad. Actions primarily focus interconnectivity of active transportation networks across the region and obtaining funding for infrastructure build out. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure T-1 Rural are included in Table 14.

Table 14 Measure T-1 Rural Actions

Action ID	Attribute	Action
T-1a Rural	Structural/ Partnerships	Regional Climate Committee to conduct a feasibility study evaluating existing bike parking facilities in rural areas and what improvements can be made to increase supply, reduce theft, and increase rider attraction. Include in the study an analysis of current and future land use trends and identify active transportation facility development which would result in high inter-connectivity impact. The study should focus on needs to better connect rural communities to city centers, job centers, and amenities.

Action ID	Attribute	Action
T-1b Rural	Equity	Develop a priority list of active transportation projects from HCAOG's Regional Transportation Plan based on level of impact, expansion of inter-connectivity, and historically under-invested communities where there is currently no, or limited pedestrian and bicycle infrastructure as informed by feasibility study.
T-1c Rural	Funding	The Regional Climate Committee will work with the regions jurisdictions, HCAOG, and CalTrans to obtain funding for the construction of bikeway and pedestrian systems to improve interconnection within Humboldt County. Focus areas will be projects that connect rural communities to high employment areas such as City of Eureka, Arcata, and Fortuna as well as nearby counties, State, and federal infrastructure through integration of bicycle facilities as part of other roadway construction projects (e.g. CalTrans mobility hub and highway projects).
T-1d Rural	Partnership	Partner with California Department of Transportation (CalTrans) District 1 Pedestrian and Bicycle Advisory Committee (PBAC) to track progress on implementation of bicycle and pedestrian projects in the region, ensure that projects being planned are consistent with the District Active Transportation Plan, and to represent the regions rural jurisdictions needs to the PBAC.
T-1e Rural	Structural	Regional Climate Committee to work with jurisdictions in rural regions that have planned land use development to establish standards for when and how new residential subdivisions, multi-family, and mixed-use developments shall provide inter- connected bicycle and pedestrian facilities and amend local codes accordingly.
T-1f Rural	Engagement	Increase community awareness of active transportation infrastructure projects occurring and those completed. Work with HCAOG to continue to fund, develop, and maintain regional webpages and apps showing pedestrian and bike trails, bike lanes, and bus times and routes. Distribute active transportation maps and promotional materials to hotels and tourism centers to increase visitor use of active transportation.
T-1g Rural	Partnerships	Partner with the tourism and business sectors of larger tourism and employment regions of the County to identify pathways to increase active transportation from tourists and employees.
T-1h Rural	Funding	Regional Climate Committee to identify and apply for grant opportunities such as the Active Transportation Program, AARP Community Challenge, CalEPA's Environmental Justice Action Grants, and Caltrans Sustainable Transportation Planning Grants, etc., to fund rural active transportation projects identified in the Regional Transportation Plan.
T-1i Rural	Funding/ Equity	Leverage the Regional Climate Committee to fund the development of local subsidies for low-income residents across the region 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 percent discounted e-bike share rate.
2030 GHG Emissions Reduction: 1,080 MT CO_2e		
2045 GHG Emissions Reduction: 4,405 MT CO_2e		
Co-Benefits: Public Health and Equity		
KPI: Change in active transportation mode share and VMT in rural areas		

Strategy 6: Shift driving to public transit or car-share

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 the initiative of community members. Increasing the access and convenience of such transportation options or increasing the benefit of using such options can initiate change. Due to the rural nature of communities in Humboldt, public transit options are currently limited and require different considerations in urbanized centers vs rural areas. The low population density and vast geographic spread of communities in rural areas of the region lead to limitations in frequency of service and have limited route options that may not serve the needs of the rural residents. Consequently, residents in rural areas rely more heavily on personal vehicles as they are more convenient and reliable. On the other hand, urban centers in the region have a more robust public transit system that has greater accessibility, connects riders to urban centers and runs at a greater frequency. However, the transit system's current frequency even in urban centers is not at a level that allows riders to view transit as more convenient than a personal vehicle. Increasing bus headway decreases the average wait time for passengers and has been shown to increase ridership.[49] Greater connectivity across rural and urbanized centers as well as offering other transit options or services to make transit in rural regions more convenient and reliable will be key to increasing public transit use in the region. Studies have shown that public transit use can be increased up to approximately 25 percent, 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 regional visitors). At this time, HCAOG and HTA have set goals to increase public and active transit to 30 percent of trips by 2030 and are seeking funding sources to expand access and frequency to attain a 10-minute headway to promote help achieve this goal through ease of community access.

Measure T-2 Urban: Expand the public transit network in support of HCAOG's RTP to increase public transit mode share from 2% to 20% public transit mode share in urbanized areas to achieve a regional 13% public transit mode share by 2030.

Urbanized areas offer greater opportunities for increasing public transit use due to higher population densities, more developed infrastructure, shorter trips and concentrated economic activities. Public transit can more efficiently serve urban centers where there are more people that live closer together and there is a higher demand for transportation options. Urban centers are ideal for public transit expansion because they can provide a high return on investment, with each improvement potentially benefiting a large number of residents and reducing overall VMT more effectively. Measure T-2 Urban aligns with HCAOG's VROOM 2022-2042 plan and supports aggressive mode share shift projects by focusing on expanding transit services and increasing reliability in the urbanized areas of Humboldt, such as Arcata, Eureka, and Fortuna, where most job centers are located. Actions include collaborating with HCAOG and Humboldt Transit Authority (HTA) to achieve a 10-minute headway and secure funding and improving access, particularly in low-income communities. The introduction of 11 zero-emissions buses by HTA further enhances the GHG reduction potential of public transit. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure T-2 Urban are included in Table 15.

[49] Advancing Public Transport (UTIP) (Last updated March 3, 2024.). "*What is bus headway? (And how it impacts public transport quality*". Accessed May 20th, from https://www.uitp.org/news/what-is-bus-headway-and-how-it-impacts-public-transport-quality/

Table 15 Measure T-2 Urban Actions

Action ID	Attribute	Action
T-2a Urban	Structural/ Partnership	Regional Climate Committee to work with Humboldt Transit Authority (HTA) and HCAOG to support implementation of measures to increase use of public transportation services in the region as specified in HCAOG's Regional Transportation Plan, and work toward a 10-minute headway in urban areas. This should include, but is not limited to: 1. Improving passenger transfer among local routes and between local and intercity routes (e.g., North State Express and Amtrak) 2. Improving shelters at bus stops 3. Electronic signage and/or real-time updates of wait time until next bus
T-2b Urban	Feasibility Study	For areas with significant tourism industry, 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: 1. Identify community boundary locations for tourism designated parking and optimal route connectivity 2. Identify opportunities for town shuttle services and park-and-ride locations for residents and tourists 3. Gauge potential of partnerships with big tourism destinations and local businesses to implement direct public transit routes between park and ride and the relevant tourist destinations 4. Identify opportunities for dogs to be included in a shuttle service to locations that allow dogs
T-2c Urban	Engagement	Leverage the Regional Climate Committee 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 outreach campaigns that are transit focused. Develop marketing materials and provide them to the local jurisdictions to publicize public transportation improvements as they are planned and implemented in a variety of methods (social media, newspaper, radio, etc.) and languages to help facilitate use and success of improvement.
T-2d Urban	Equity/ Partnership	Work with HTA to plan facility upgrades that include design improvements of seating and weather protection at bus stops and along transportation routes. Implementation should also include consideration of climate change impacts and increasing micro-transit access to the improved public transit network facility. Incorporate design changes throughout infrastructure modifications, including real-time updates of bus arrival.
T-2e Urban	Equity	Work with HTA to prioritize public transportation access and improvements in low-income areas of the region and at major destinations. This could include surveying existing transportation routes, schedules, and facilities throughout each jurisdiction as part of HCAOG's Sustainable Transportation Planning Grant Program and improving public transportation facilities and expand access to transit (i.e., first and last-mile access).
T-2f Urban	Funding	Regional Climate Committee to collaborate with HTA and HCAOG in obtaining grant funding for service expansion and improvements particularly in underserved and marginalized areas. Also include assistance for working with the appropriate State agencies to petition for updates to the farebox ratio to allow HTA greater access to using funds for self- advertisement.

Action ID	Attribute	Action
T-1g Urban	Funding/ Partnerships	The Regional Climate Committee will work with local jurisdictions to prioritize spending of transit-specific funding for transit needs first.
2030 GHG Emissions Reduction:		18,055 MT CO_2e
2045 GHG Emissions Reduction:		26,482 MT CO_2e
Co-Benefits:		Resource Efficiency, Public Health and Equity, Increased Resilience
KPI:		Change in transit mode share and VMT reduction

Measure T-2 Rural: Develop a robust public transit network in support of HCAOG's RTP to increase public transit mode share from 1% to 10% in rural areas and achieve a regional 13% public transit mode share by 2030.

Expanding public transit use in rural communities is challenging due to lower population densities, greater travel distances, and limited infrastructure. However, improving connectivity between rural and urban centers can facilitate access to jobs, education, healthcare, and other essential services without relying on personal vehicles. Increasing the frequency and reliability of public transit makes it a more viable and convenient option for rural residents. Establishing park-and-ride facilities can make it more convenient to use public transit for parts of trips, and enhancing access to micro-mobility options like bike shares or car shares can provide a solution for the "first" and "last" mile. Measure T-2 Rural focuses on enhancing connectivity between rural incorporated and unincorporated regions of Humboldt County, such as Blue Lake, Ferndale, Rio Dell, Trinidad, and Unincorporated Humboldt County and economic centers by pursuing funding to expand transit network services and establishing policies and programs to better connect rural residents to public transit. These efforts align with the with HCAOG's RTP program, VROOM 2022-2042, to achieve significant increased public transit mode share across the region. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure T-2 Rural are included in Table 16.

Table 16 Measure T-2 Rural Actions

Action ID	Attribute	Action
T-2a Rural	Structural/ Partnership	Regional Climate Committee to work with HTA and HCAOG to support implementation of measures to increase use of public transportation services in the region as specified in HCAOG's Regional Transportation Plan and work toward a 30-minute headway in rural areas. This should include, but is not limited to: 1. Improving passenger transfer among local routes and between local and intercity routes (e.g., North State Express and Amtrak) 2. Improving shelters at bus stops 3. Prioritizing infrastructure improvements in existing communities that enable people better access and use of public transit 4. Electronic signage and/or real-time updates of wait time until next bus
T-2b Rural	Feasibility Study	For areas with significant tourism industry, 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:

Action ID	Attribute	Action
		1. Identify community boundary locations for tourism designated parking and optimal route connectivity 2. Identify opportunities for town shuttle services and park-and-ride locations for residents and tourists 3. Gauge potential of private partnerships with big tourism destinations and local businesses to implement direct public transit routes between park and ride and the relevant tourist destinations
T-2c Rural	Feasibility Study	Work with HCAOG and HTA to conduct a feasibility study to explore alternative forms of public transit, such as micro transit including on-demand shuttles, car share programs, bike share programs, and scooter share programs. Micro transit is a type of on-demand, shared transportation service that typically operates with smaller vehicles, such as vans or mini-buses, and offers flexible routes and schedules. 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. Evaluate the effectiveness of the micro transit pilot program in McKinleyville to determine opportunities for implementing a similar program in other rural locations of the County.
T-2d Rural	Structural	Based on the findings of the feasibility study, work with the Regional Climate Committee to develop a template 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-2e Rural	Structural	Require large nonresidential and mixed-use developments to participate in Transportation Demand Management strategies, including providing shuttle services between employment centers and key transit centers, offering telecommuting, and encouraging use of pre-tax commute benefits.
T-2f Rural	Engagement	Market and publicize public transportation improvements as they are planned and implemented in a variety of methods (social media, newspaper, radio, etc.) and languages to help facilitate use.
T-2g Rural	Equity/ Partnership	Work with HTA in the implementation of facility improvements to rural transportation stops to include design improvements of seating and weather protection. Implementation should also include consideration of increasing access to the improved public transit network facility.
T-2h Rural	Partnerships	The Regional Climate Committee will work with local jurisdictions to prioritize spending of transit-specific funding for transit needs first.
T-2i Rural	Funding	Regional Climate Committee will collaborate with the County, cities, HTA and HCAOG in order to identify roads, project types, and project locations in the rural areas that would increase the accessibility and use of public transit. The Committee will research and obtain potential funding opportunities for these road improvements, such as through Senate Bill 1 funding programs.
2030 GHG Emissions Reduction: 20,180 MT CO_2e		
2045 GHG Emissions Reduction: 29,703 MT CO_2e		
Co-Benefits: Resource Efficiency, Public Health and Equity, Increased Resilience		

Action ID	Attribute	Action
KPI:		Change in transit mode share and VMT reduction

Measure T-4: Develop and implement regional mobility hubs and ZEV car-share programs to support mode shift from single occupancy vehicles.

Measure T-4 focuses on creating regional mobility hubs and implementing ZEV car-share programs to promote a shift away from single-occupancy vehicle use. This measure aims to expand transportation options across urban and rural communities, facilitating residents' adoption of zero emissions and efficient travel modes. Regional mobility hubs consolidate various transportation services, including public transit, bike-sharing, and car-sharing, at centralized locations to improve convenience and connectivity between different modes of transport. Introducing ZEV car-share programs enhances this initiative by offering clean transportation alternatives and reducing dependence on fossil fuels. Additionally, Caltrans is currently developing mobility hubs along the State highway that traverses the County, which can enhance residents' access to these services and facilitate the transition to active or public transportation for last-mile commutes. Local jurisdictions will commit to initiating the planning and development of mobility hub projects by 2027, and secure funding for transit accessibility improvements, network efficiency enhancements, and alternative transportation options. Additionally, the Regional Climate Committee would commit to implementing a tracking mechanism to monitor the effectiveness of land use changes in achieving mode shift and reducing VMT. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure T-4 are included in Table 17.

Table 17 Measure T-4 Actions

Action ID	Attribute	Action
T-4a	Feasibility Study	Regional Climate Committee to initiate work with HCAOG by 2027 on the Sustainable Transportation Planning Grant Program efforts to assess regional transportation characteristics and work with regional agencies to identify multimodal land use opportunities throughout the County. As part of this program, conduct a background review of options for purchasing, operating, and maintaining shared mobility assets such as ZEVs, electric bikes, and electric scooters. The program 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 expanding mobility hub facilities beyond state highways access may enhance active transportation or public transit use. Also include in the feasibility study an assessment of alternative powering options in partnership with RCEA (e.g. microgrids) to support ZEV car-share infrastructure with the mobility hubs.
T-4b	Structural/ Partnership	In areas where Caltrans plans to implement mobility hubs along the state highway, local jurisdictions with support from the Regional Climate Committee will work with Caltrans to facilitate successful implementation and use the project to inform decisions on expanding mobility hub options throughout the region that will expand jurisdictional interconnectivity and provide public EV charging to the communities.

Action ID	Attribute	Action
T-4c	Structural/ Equity	Regional Climate Committee will develop guidance for jurisdictions to implement mobility hub policies 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 mobility hub facilities in underserved areas or reductions in usage fees for lower income users. The guidance is to be developed based on the regional feasibility study above.
T-4d	Partnership	The Regional Climate Committee will coordinate with the City of Arcata in their efforts to bring in commercial autonomous EVs for car-share programs in association with regional mobility hubs.
T-4e	Funding	Dedicate staff time or leverage the Regional Climate Committee to work with HCAOG on the Sustainable Transportation Planning Grant Program and Caltrans in identifying and pursuing funding opportunities identified in the feasibility study with focus on linking mobility hub programs with the current Caltrans project to facilitate greater community interconnectivity and adoption of mobility services provided.
T-4f	Structural	The Regional Climate Committee will implement a tracking mechanism to monitor the effectiveness of land use changes in achieving mode shift and reducing VMT.
2030 GHG Emissions Reduction: Supportive		
2045 GHG Emissions Reduction: Supportive		
Co-Benefits: Resource Efficiency, Public Health and Equity, Green Jobs		
KPI: Reduction in VMT and change in mode shift		

Strategy 7: Shift land use to reduce VMT

Land-use patterns are highly correlated with VMT where higher sprawl outside of urban areas is known to increase more travel. In recognition of that, the State passed the Sustainable Communities and Climate Protection Act (SB 375) which supports the State's climate goals by helping to reduce GHG emission through coordinated transportation, housing, and land use planning. While the communities in the County are largely dispersed and well established, there are still opportunities to implement land-use strategies in areas where development is expected to occur. By concentrating on new residential development near job and amenity centers and enhancing connectivity across the region, VMT can be reduced. Further, improving land-use patterns makes measures focused on mode shift even more effective.

Measure T-3: Reduce regional VMT by increasing promotion of mixed-use development in infill priority areas and accelerate smart growth development by requiring local jurisdictions to adopt modified or new land use zoning designations to limit urban sprawl and promote high-density development.

Population density presents challenges for public transit and active transportation across the region, as dispersed populations have limited access to transit and decreased public transit ridership. Measure T-3 addresses this issue by emphasizing mixed-use development in designated infill priority areas. Encouraging mixed-use development optimizes land use by integrating residential, commercial, and recreational spaces, which can alleviate traffic congestion, lower

transportation emissions, and discourage urban sprawl. Urban areas within the region have already begun increasing mixed-use developments, with ongoing zoning updates offering further opportunities for infill expansion. This measure enhances community livability by fostering walkable neighborhoods that provide easy access to essential services and amenities. Increased population density through infill development supports transit networks, aids in meeting RHNA requirements, and reduces VMT by single-passenger vehicles. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure T-3 are included in Table 18.

Table 18 Measure T-3 Actions

Action ID	Attribute	Action
T-3a	Structural	Work with the Regional Climate Committee to develop template land use and development policy to enable and encourage infill development and streamline zoning changes that allow for higher density housing development. Work with urban areas to rezone for higher residential density and mixed use, reduced parking requirements, and expedited planning and permitting processes in the downtown core, along transit corridors, and within future planned development areas that is compact, pedestrian friendly, and transit oriented where applicable.
T-3b	Feasibility/ Equity	Leverage feasibility studies conducted by HCAOG to identify opportunities for mixed-use and infill development, map current and future planned transit networks, and establish a priority list of development that encourages regional growth to be in alignment with HCAOG and HTA transit goals. If not already included in previously conducted HCAOG studies, assess equity considerations with regards to location and distribution of developments, and potential transit access equity impacts.
T-3c	Partnership	Work with HCAOG, HTA, RCEA and CBOs to plan prospective mixed-use and infill projects so that they include design considerations with regards to alternative energy access/generation, EV charging infrastructure, and local public transit facilities. Promote development that increases walkability and is bikeable in neighborhoods.
T-3d	Engagement	Direct the Regional Climate Committees to develop promotional materials and manage a central webpage on local jurisdiction's websites for planned projects detailing the benefits of mixed-use and/or infill developments.
T-3e	Funding	Dedicate staff time or create multi-jurisdictional staff position to be administered by the Regional Climate Committee to identify and pursue funding opportunities to support mixed-use and infill developments.
T-3f	Feasibility	Study potential of establishing infill and transit-oriented development (TOD) overlay zones with minimum density requirements for as-of-right ministerial approval, streamlined permitting and reduced fees.
T-3g	Structural	Pass ordinances prohibiting redesignation and rezoning of land for lower intensity land uses in transit-oriented development areas (areas within walking distance of basic services and transit).
T-3h	Structural	Further streamline permitting and reduce fees for construction of ADUs and affordable housing in targeted areas.
2030 GHG Emissions Reduction: Supportive		

Action ID	Attribute	Action
2045 GHG Emissions Reduction: Supportive		
Co-Benefits:	Resource Efficiency, Public Health and Equity, Increased Resilience	
KPI:	Reduction in VMT	

Measure T-5: Require commercial and industrial employers with 25 employees or more to develop a Transportation Demand Management Plan.

Measure T-5 commits jurisdictions, particularly high employment areas, to require that commercial and industrial employers with 25 or more employees create a Transportation Demand Management (TDM) Plan. This measure aims to lower GHG emissions and better accommodate employees living far from their place of work by further incentivizing alternative commuting options through employer-based subsidies for alternative modes of travel, which can also reduce their commuting costs. TDM plans can include strategies such as promoting carpooling, offering public transit incentives, supporting telecommuting, and providing facilities for cycling and walking. Employer-based TDM plans with these types of strategies which combine incentives with improved commute alternatives can lead to a 25 percent reduction in employee trips. By requiring these plans, Measure T-5 encourages employers to actively participate in reducing their transportation footprint, improving air quality, and enhancing the overall efficiency of the transportation network. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure T-5 are included in Table 19.

Table 19 Measure T-5 Actions

Action ID	Attribute	Action
T-5a	Structural	Across all jurisdictions, and particularly in high employment cities, require employers to develop a Transportation Demand Management (TDM) Plan through a new ordinance and/or as a requirement to obtain a business license. TDM plans should include money-based incentives for employees to bike, walk, carpool, take the bus to work, or remote work where suitable. Require large employers (more than 25 employees) to subsidize biking, walking, or bus travel. The TDM should also include a ride-sharing program and membership within a transportation management association. The ride-sharing program will consist of designated parking spaces for ridesharing vehicles, passenger loading, unloading, and waiting zones; and a website, message board, or app for coordinating ridesharing. The program will include a provision to allow employees to work remotely 2 days per week when feasible and should include consideration for increasing broadband internet access to provide adequate service for those working remote.
T-5b	Feasibility Study	Leverage the Regional Climate Committee and partnership with HCAOG to conduct local transportation surveys within each jurisdiction 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 outreach campaigns that are transit focused.
T-5c	Engagement	Have the Regional Climate Committee prepare marketing materials that each jurisdiction may modify and use to market and publicize public and active transportation improvements to local businesses as they are planned and

Action ID	Attribute	Action
		implemented in a variety of methods (social media, newspaper, radio, etc.) and languages to help facilitate use and success of improvement.
T-5e	Partnership/ Engagement	Work with local businesses to understand employee engagement with alternative transportation methods and barriers to entry and provide workshops to local businesses to address questions or concerns in developing TDM plans.
T-5f	Funding	Through the Regional Climate Committee, employ a multi-jurisdictional representative to support HTA and local jurisdictions in pursuing grants such as the Sustainable Communities Competitive, Caltrans Sustainable Transportation Planning Grant Program, State Transportation Improvement Program, etc., to expand public and active transit services and infrastructure.
2030 GHG Emissions Reduction:	Supportive	
2045 GHG Emissions Reduction:	Supportive	
Co-Benefits:	Resource Efficiency, Public Health and Equity	
KPI:	Implementation of TDM plans and reduction in VMT	

Strategy 8: Increase zero-emission vehicle adoption

The state has adopted Executive Order N-79-20 requiring that 100 percent of new sales of passenger vehicles be zero-emissions by 2035. Additionally, the state has as invested billions of dollars into programs developed to support the expansion of zero-emission vehicle (ZEV) and electric vehicle (EV) infrastructure throughout the state and increase access to ZEVs for all Californians including low- or moderate-income consumers. There are several rules accelerating the penetration of commercial ZEVs as well, including the Innovative Clean Transit regulation, the Advanced Clean Trucks regulation, and the Advanced Clean Fleet rule. 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 6 percent and 5 percent penetration of passenger and commercial EVs, respectively. Accelerating this rate is primarily driven by increasing access to EVs and charging infrastructure and developing a connective network. The State has also established the Low Carbon Fuel Standard, to reduce the carbon intensity of transportation fuels by spurring more investment in alternative fuels such as biodiesel and biomethane made from waste as well as green hydrogen. The use of alternative fuels provides an opportunity to decarbonize vehicles that do not yet have the technology to be electric as well as provides an opportunity for decarbonization for regions that have limited access to adequate electricity infrastructure for electric vehicles, like the Humboldt region.

Measure T-6: Decarbonize 15% of passenger vehicle miles traveled by 2030 and 100% by 2045 through increased adoption of low and zero-emission vehicles and development of a regional electric vehicle charging and hydrogen fueling network.

Measure T-6 aims to decarbonize VMT across the region through increased ZEV adoption and implementation of hydrogen hubs as an alternative to electric ZEVs. Though jurisdictions in Humboldt are expected to aid in aligning regional ZEV adoption with state goals, Humboldt's electricity infrastructure, and rural nature poses challenges with matching the State's goals or anticipated ZEV market rate. In recognition of these challenges as well as the pressing need to decarbonize the transportation sector this measure establishes a conservative target focused on

ZEV adoption and increased electric utility capacity, which is consistent with RCEA efforts. To support ZEV adoption, the actions establish EV charging infrastructure targets necessary to meet the anticipated rise in EV population, though the actual GHG reductions are based on achieving target EV penetration and thereby replacing VMT by internal combustion engines by ZEV VMT. Additionally, the measures includes promoting and informing residents of opportunities to offset cost of ZEVs and EV charging equipment installation such as those provided by the Inflation Reduction Act (IRA) tax credit opportunities for consumers. The IRA offers several tax credit opportunities for residents, businesses, and fleets to accelerate the electrification of the transportation sector. This includes tax credits for new clean vehicles (section 30D), used clean vehicles (section 25E), commercial clean vehicles (section 45W), alternative fuel vehicle refueling (section 30C), and an allocation of $1 billion to states, municipalities, Native American Tribes and non-profit transportation associations to replace class 6 and 7 heavy-duty vehicles and school buses.[50] Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure T-6 are included in Table 20.

Table 20 Measure T-6 Actions

Action ID	Attribute	Action
T-6a	Engagement	Through the Regional Climate Committee partner with local organizations and community groups throughout the County to distribute outreach and promotional materials to residents and local businesses on the financial, environmental, and health and safety benefits of ZEVs and alternative fueling options. Provide information on available funding opportunities.
T-6b	Structural	Regional Climate Committee will identify jurisdictions or land-use zones, such as the Coastal Zone, that may benefit from a streamlined public and private EV infrastructure permitting process or Categorical Exemption and draft an ordinance in accordance with AB 1236. The Regional Climate Committee will develop the program as a template to be distributed to applicable jurisdictions for a coordinated approach and relieve individual jurisdiction workload on program development.
T-6c	Structural	The Regional Climate Committee will work with local jurisdictions to amend the Municipal Code to promote EV chargers in new development, redevelopment, and existing parking spaces. This may include requiring: ▪ Multifamily – CalGreen Tier 2 provisions ▪ Non-Residential – CalGreen Tier 2 provisions ▪ Designate 10 percent of parking spaces in urbanized areas as EV charging spaces ▪ Require that employers with over 25 employees designate preferred parking spaces for zero emission vehicles or hybrids only ▪ Require that new private parking lots grant ZEVs access to preferred parking spaces. ▪ Require that existing parking in downtown areas grant ZEV access to preferred parking spaces. ▪ Require larger residential rental building owners (more than 15 tenants) and large commercial building owners (more than 10,000 square feet) to install working electric vehicle chargers in 10 percent of parking spaces for

[50] Inflation Reduction Act of 2022, H.R.5376, 117th Congress (2021-2022).

Action ID	Attribute	Action
		new and existing buildings at time of renovation if projects are valued at $1,000,000 or greater
T-6d	Equity	Support ZEV car share companies in coming to the region. In jurisdictions with prevalent or planned development of multifamily housing, identify private sector partnerships and develop affordable, zero-emission vehicle car share programs with a priority to target vulnerable communities across all jurisdictions, promoting an accessible ZEV network.
T-6e	Partnership	For high employment areas, work with interested parties to develop new public access charging stations. Work with RCEA, PG&E, and other stakeholders to develop partnerships with other charging companies (e.g. Go Station) as needed to accommodate charging station needs. Apply for Federal Charging and Fueling Infrastructure (CFI) grant or other available grants to install electric vehicle chargers at community centers and in high employment areas.
T-6f	Funding	Partner with RCEA to provide an EV Monthly Bill Discount Program with increased discount opportunities for low-income customers in each jurisdiction. Promote affordable EV charging rates at jurisdiction-owned EV charging stations and adjust rates as necessary to cover program costs. Explore methods for charging different rates for different user groups or other programs to offset charging costs at public stations for low-income residents.
T-6g	Structural	Regional Climate Committee will work with interested parties and RCEA to expand home and public fueling/charging station ZEV infrastructure in alignment with RCEA RePower Plan goals and address barriers to ZEV adoption which are not related to electric grid capacity limitations as outlined in the "North Coast and Upstate FCEV Readiness Plan." Evaluate opportunities for curbside street level II chargers in urbanized residential areas where off-street parking is limited to provide equitable access to at home chargers.
T-6h	Feasibility Study/ Funding	Regional Climate Committee, in partnership HCAOG, to lead the development of a Hydrogen Vehicle Infrastructure Implementation Plan for public access hydrogen facilities by 2030 which includes the following: 1. Evaluate a list of prioritized locations for hydrogen fueling stations across the County 2. Consideration of procurement needs and potential sourcing from appropriate hydrogen facilities 3. Identifies grant funding opportunities
T-6i	Structural	Based on the results of the Hydrogen Vehicle Implementation Plan, applicable jurisdictions with opportunities identified as high priority hydrogen fueling station locations will evaluate and promote public access hydrogen fuel station development. Leverage the Regional Climate Committee and other regional partnerships to explore funding opportunities for hydrogen fueling infrastructure through the LCFS or PG&E EV Fast Charge Program as well as develop public-private partnerships to attract private developers to the region to build out ZEV infrastructure.
T-6j	Funding	Identify and promote incentives and financing options for residential EV charger installations such as applying for Inflation Reduction Act (IRA) funding.
2030 GHG Emissions Reduction:		55,726 MT CO_2e
2045 GHG Emissions Reduction:		590,124 MT CO_2e

Action ID	Attribute	Action
Co-Benefits:		Resource Efficiency, Public Health and Equity
KPI:		Increase in passenger vehicle ZEV adoption

Measure T-7: Increase commercial zero-emission vehicle use and adoption to 10% by 2030 and 100% by 2045 through a regional charging network and development of hydrogen hubs.

Measure T-7 aims to boost commercial ZEV adoption across Humboldt County, focusing on EVs and hydrogen hubs for medium- and heavy-duty (MDHD) vehicles and trucks. Key actions under this measure include refining and implementing the North Coast MDHD ZEV Readiness Blueprint in collaboration with RCEA and SERC, engaging employers and fleet owners on Advanced Clean Fleet requirements and funding opportunities, and securing state and federal funding to expand ZEV procurement and charging infrastructure. These efforts align with California's mandates for achieving 100 percent ZEV populations in commercial fleets by 2045, as set forth in Executive Order N-79-20 and regulations like the Advanced Clean Trucks and Fleets. The region also plans to leverage infrastructure funding through state and federal programs to enhance electric and hydrogen fueling along Highway 101. By also investing in hydrogen refueling infrastructure, the region is able to better diversify the fleets and continue to move towards fleet ZEV transition even with electricity infrastructure barriers. Similar to Measure T-6, this measure directs the Regional Climate Committee to pursue funding for commercial vehicle electrification through state and federal programs such as the IRA described in the previous section. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure T-7 are included in 9.

Table 21 Measure T-7 Actions

Action ID	Attribute	Action
T-7a	Structural	Through the Regional Climate Committee work with RCEA and the Schatz Energy Research Center (SERC) to refine and implement the North Coast Medium-Duty/Heavy-Duty Zero Emission Vehicle Readiness Blueprint for Humboldt County. As part of the refinement: 1. Conduct in depth study of physical siting opportunities and prioritize locations and a schedule to follow 2. Identify opportunities for local jurisdiction-supported accelerated fleet ZEV adoption and establish a strategy to promote ZEV/EV adoption within business fleets 3. For high priority fleets, establish a strategy and protocol to collaborate with PG&E 4. For high priority fleets, conduct a grid planning study to identify necessary infrastructure upgrades to support a fully built-out fleet and coordinate with PG&E regarding needs
T-7b	Funding	Work with the Regional Climate Committee and RCEA to secure funding from state and utility programs (such as the California Air Resources Board's Clean Vehicle Rebate Project, the Truck and Bus Voucher Incentive Program, LCFS, and the PG&E EV Fast Charge Program) and federal sources to increase procurement of EV or ZEV cars, trucks, and other vehicles and installation of EV/ZEV charging/fueling infrastructure. Additionally, provide information to

Action ID	Attribute	Action
		businesses on state and federal programs to help businesses pursue conversion of fleets to ZEVs.
T-7c	Feasibility study	Conduct an inventory of business vehicle fleets in each jurisdiction and identify and engage with employers and businesses subject to the Advanced Clean Fleets rule as well as those to target for accelerating ZEV/EV adoption. As part of the study, identify private trucking company or manufacturer partnership opportunities for piloting new ZEV technology in the region.
T-7d	Engagement	Direct the Regional Climate Committee to partner with RCEA and SERC to work with local fleet operators, vehicle operators, and fleet maintenance staff to develop a comprehensive training program, including hosting workforce development trainings to discussing the benefits and technical requirements of ZEV fleets and supporting infrastructure. In addition to retraining the existing workforce, advertise and promote opportunities in the area to attract additional workforce support such as ZEV technicians and mechanics, and charging and fueling technicians.
T-7e	Funding/ Partnerships	The Program Manager will research and obtain funding and work with HTA to identify locations and expand hydrogen fueling infrastructure.
2030 GHG Emissions Reduction:		17,441 MT CO_2e
2045 GHG Emissions Reduction:		279,775 MT CO_2e
Co-Benefits:		Public Health and Equity, Increased Resilience, Green Jobs
KPI:		Increase in commercial vehicle ZEV adoption

Measure T-8: Electrify or otherwise decarbonize 12% of applicable small off-road engines (SOREs) off-road equipment by 2030 and 100% by 2045 and replace fossil diesel consumption with renewable diesel in 55% of applicable large diesel in alignment with EO N-79-20 by 2030.

The State is regularly updating mandates for off-road equipment. CARB's regulations specifically impact the sale and use of SOREs powered by gasoline or diesel, affecting equipment such as lawn mowers, generators, and pressure washers by 2024. State initiatives are focused on limiting sales of these engines and providing resources to replace current models. Additionally, amendments to CARB's Off-Road Diesel-Fueled Fleets Regulation require the majority of large, in-use off-road diesel equipment to use renewable diesel.[51] While Humboldt County is on the list of captive attainment areas that exempts diesel equipment owners from using renewable diesel if they operate exclusively in Humboldt County, Measure T-8 aims to achieve significant emissions reductions from off-road equipment by encouraging fleets to electrify where feasible and increasing access to renewable diesel, aligning with CARB's off-road equipment mandates. These efforts target reductions in local fossil fuel use and aim to decarbonize the off-road sector through regulatory measures, incentives, and community outreach. Actions, co-benefits, key performance indicator,

[51] In-Use Off-Road Diesel-Fueled Fleets Regulation applies to self-propelled off-road diesel vehicles 25 horsepower or greater as well as most two-engine vehicles. The regulation applies to a variety of equipment categories, including but not limited to: Aerial lifts, aircraft tugs, backhoes, baggage tugs, belt loaders, cargo loaders, crawler tractors, excavators, forklifts, graders, loaders, mowers, rollers, rough terrain forklifts, rubber tired loaders, scrapers, skid steer loaders, snow blowers. More information is available at: https://ww2.arb.ca.gov/sites/default/files/classic/msprog/ordiesel/faq/applicabilityfaq.pdf

and specific quantitative GHG emissions reductions associated with implementation of Measure T-8 are included in Table 22.

Table 22 Measure T-8 Actions

Action ID	Attribute	Action
T-8a	Engagement	Align with AB 1346 and develop and circulate educational materials regarding CARB's Small-Off Road Engines regulations requiring most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers, and other equipment to be zero emission starting in Model Year 2024. Phase 2 of the regulations will be implemented in Model Year 2028, when the emission standards for generators and large pressure washers will be zero. In addition, work with Humboldt Chamber of Commerce to disseminate information regarding the regulation to impacted businesses (e.g., lawn equipment dealers, commercial landscapers, construction companies) and promote transition of equipment sales and equipment use to electric alternatives.
T-8b	Structural	Regional Climate Committee to identify pathways to enforce CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation and the Commercial Harbor Craft Regulation requiring that diesel vehicles over 25 horsepower to procure and only use R99 or R100 renewable diesel. This should include establishing a means to track compliance and developing partnerships with fuel suppliers in the region to promote and support the increased procurement of renewable diesel in the region.
T-8c	Structural	Work with the Regional Climate Committee to develop and implement a plan to replace all jurisdiction owned end-of-life off-road equipment with zero-emission equipment as feasible. Procure renewable diesel for applicable jurisdiction owned diesel equipment that doesn't have available replacement equipment. Plan should include evaluation of current jurisdiction-owned equipment, alternative low or zero-emission options, prioritize equipment to replace first (e.g., largest GHG emission reduction potential), and a timeline for replacements that align with goals and feasibility of replacement.
T-8d	Engagement	The Regional Climate Committee will develop and manage an Off-road Equipment Replacement Program and Outreach Campaign that provides information to contractors, residents, and fleet operators in the region regarding alternatives to fossil-fueled off-road equipment, local fuel suppliers with renewable diesel for sale, public health and safety benefits of alternative equipment technology, and funding opportunities available (i.e., Clean Off-Road Equipment Voucher Incentive Program), Zero-Emission Landscaping Equipment Incentive Programs).
T-8e	Funding/ Partnership	Through the Regional Climate Committee, Partner with North Coast Unified Air Quality Management District to identify funding opportunities to encourage residents to replace gas-powered landscaping equipment and off-road engines with zero emission equipment. This could include a rebate and incentive program for upgrading off-road equipment and switching to renewable diesel, or the development of an off-road zero emission landscaping equipment rental share program for county residents and businesses.

Action ID	Attribute	Action
T-8f	Funding	Leverage the Regional Climate Committee to source State and Federal funding to decarbonize off-road equipment as a result of Executive Order N-79-20.
2030 GHG Emissions Reduction:		49,143 MT CO_2e
2045 GHG Emissions Reduction:		139,645 MT CO_2e
Co-Benefits:		Natural Resource Enhancement, Resource Efficiency, Public Health and Equity, Green Jobs
KPI:		Reduction of fossil fuel consumption in off-road vehicles

Measure T-9: Establish Humboldt as a pilot program for the decarbonization of the transportation sector to help drive State and philanthropic investment throughout Humboldt.

Measure T-9 aims to establish the region as a pilot program for decarbonizing rural transportation emissions by developing a comprehensive vision that integrates relevant measures outlined in this plan and by attracting State and philanthropic investments. Decarbonizing rural transportation faces unique challenges such as longer travel distances, higher individual vehicle use, and lower average incomes, exacerbated by historical underinvestment in rural areas. By positioning Humboldt as a pioneer in rural decarbonization, this initiative seeks to foster county-wide collaboration for integrated transportation solutions. This pilot program not only aims to attract investments to enhance local infrastructure but also positions the region as a leader in rural sustainability, driving climate mitigation efforts at both local and regional levels. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure T-9 are included in Table 23.

Table 23 Measure T-9 Actions

Action ID	Attribute	Action
T-9a	Feasibility	The Regional Climate Committee will develop and promote a vision and strategy for the regional community foundation to serve as a first mover/pilot in the State in the decarbonization of America's rural transportation systems.
T-9b	Funding	As a first mover in rural America, the Regional Climate Committee will pursue investment on behalf of the jurisdictions from philanthropy, the State, private businesses, etc. to fund the development of a Humboldt decarbonized rural transportation system.
T-9c	Equity/ Engagement	With the support of the Regional Climate Committee, jurisdictions will directly engage members of disadvantaged and vulnerable communities in the development of the vision and strategy that aims to benefit all members of rural communities.
2030 GHG Emissions Reduction:		Supportive
2045 GHG Emissions Reduction:		Supportive
Co-Benefits:		Natural Resource Enhancement, Resource Efficiency, Public Health and Equity, Green Jobs
KPI:		Funding received through philanthropies

Measure T-10: Work with the State and renewable fuel industry to establish a renewable fuel network within Humboldt thereby funding new green industry and job growth to support the decarbonization of the transportation sector.

Measure T-10 aims to establish a biofuel network in Humboldt by collaborating with the State and the renewable fuel industry, focusing on green hydrogen[52], renewable diesel, and renewable natural gas (RNG) production. This network supports the decarbonization of transportation fuels and promotes economic development in the region. Due to challenges with electric infrastructure, biofuels serve as a transitional solution, enabling Humboldt to progress towards decarbonization goals. Biofuels reduce emissions by substituting fossil fuels with renewable organic materials, which absorb CO_2 during growth. When combusted, biofuels release biogenic CO_2, minimizing net atmospheric carbon emissions compared to traditional fuels. Hydrogen is also particularly beneficial in rural areas like Humboldt, providing extended travel range for trucking compared to electric options for trucking and contributing to California's goal of establishing 200 hydrogen fueling stations by 2025. Bringing renewable diesel to the region is crucial for implementing Measure T-8 and complying with CARB regulations. Due to California's policies, such as LCFS, there are numerous alternative fuels available that have a significantly lower-carbon footprint than fossil fuels.[53] Like the traditional oil and gas industry, alternative fuel producers are subject to stringent environmental laws and regulations to minimize their environmental impact. While biofuels and other low-carbon alternative fuels still involve industrial processes and produce some GHGs, these fuels serve as a critical bridge in the transition towards carbon neutrality. By reducing reliance on fossil fuels, these alternatives enable immediate GHG emissions reductions, especially in sectors where electrification may be challenging in the short term. This approach supports long-term decarbonization goals while allowing time for the development of infrastructure and technologies needed for fully zero-emission solutions, ensuring that the transition does not lead to additional environmental challenges.

In addition to reducing GHG emissions and serving as a bridge to decarbonization, biofuel production may provide co-benefits. Renewable fuel production from sustainably managed forest biomass waste (e.g., sawmill byproduct, logging slash) can help to address wildfire risks by reducing overgrowth, which lowers wildfire intensity, protects ecosystems, and promotes forest health. Local renewable fuel production also supports regional economic development through job creation in biomass collection, processing, and biofuel production. This measure promotes alternative energy solutions and economic growth. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure T-10 are included in Table 24.

Table 24 Measure T-10 Actions

Action ID	Attribute	Action
T-10a	Feasibility	The Regional Climate Committee will lead establishing a memorandum of understanding with RCEA, PG&E, CARB, CAL FIRE, the California Department of Agriculture, forest owners, and waste management companies to establish a plan to manage biomass and organic waste through the development of

[52] Green hydrogen is defined the Inflation Reduction Act as having a carbon intensity score of less than 0.45 kg CO_2e for each kg of hydrogen produced.

[53] The carbon intensity of a fuel within the LCFS program is based on the lifecycle assessment of the fuel from well, or cradle) to wheel and thereby encompasses all aspects of the fuel contributing to lifecycle GHG emissions, including land use change impacts.

Action ID	Attribute	Action
		biofuel infrastructure in the region to position Humboldt as a first mover in active forest management to support a carbon-free future for California.
T-10b	Structural	The Regional Climate Committee will work jurisdiction to identify and help zone and entitle opportunity locations and specific areas throughout the region for streamlined development of renewable generation facilities where applicable. As part of effort, develop guidelines for evaluating renewable opportunities that meet sustainability criteria such as those set in the Natural Resources Defense Council's "Biofuel Sustainability Performance Guidelines" to limit environmental impacts related to renewable production.
T-10c	Partnerships	The Regional Climate Committee will work with RCEA, PG&E, and State agencies to explore funding opportunities including grants and green bonds to help fund the development of renewable fuel infrastructure in the region and explore revenue options through the Low Carbon Fuel Standard.
T-10d	Structural	Establish Humboldt as a hydrogen hub by: 1. Promoting the pending The U.S. Department of Energy funded HTA hydrogen fueling station to attract additional hydrogen fueling station developers to the region 2. Partner with RCEA, SERC, and CalTrans, where applicable, to identify sites for hydrogen fueling stations that build off the North Coast and Upstate Regional Hydrogen Infrastructure Plan 3. Pursue partnerships with private developers to develop additional hydrogen fueling stations in the region 4. Pursue funding opportunities for hydrogen fueling infrastructure, such as through LCSF, AB 8 program, and the CEC Clean Transportation Program
T-10e	Funding	The Regional Climate Committee, in partnership with applicable incorporated cities will work with local utilities and State agencies to pursue grants earmarked for biofuel infrastructure from the Inflation Reduction Act.
T-10f	Partnerships	The Regional Climate Committee will establish partnerships with organic waste haulers to establish a consistent feedstock of waste biomass from forests and biowaste from residential and agricultural sources and forest service businesses/property owners.
T-10g	Engagement	Partner with the forestry services and waste haulers to host an Outreach Campaign informing the community on the economic and wildfire risk benefits of active forest management for bioenergy. Establish a working group/committee to involve local community members and businesses in the planning processes related to biomass and biowaste management locally.
T-10h	Equity/ Engagement	Leverage the Regional Climate Committee to create a region-wide workforce development programs to train the local workforce for biofuel jobs. Specifically target training towards members of disadvantaged communities and establish criteria in the planning process that prioritizes/requires the employment of local residents and businesses in the industry.
2030 GHG Emissions Reduction: Supportive		
2045 GHG Emissions Reduction: Supportive		
Co-Benefits: Resource Efficiency, Green Jobs, Increased Resilience		

Action ID	Attribute	Action
KPI:		Increased biofuel infrastructure and access in the region

Measure T-11: Lead by example and electrify or otherwise decarbonize 50% of municipal fleets by 2030 in alignment with the State's Advanced Clean Fleet Rule.

Measure T-11 commits each jurisdiction to lead by example by electrifying or otherwise decarbonizing its municipal fleet in line with the State's Advanced Clean Fleet Rule. Under the rule 50 percent of vehicles added to fleets subject to the regulation from 2024- 2026 must be ZEVs with 100 percent of vehicles added to the fleet after 2026 must be ZEV. Alternatively, fleets may opt-in to the Milestones Option. If the Milestone Option is selected, fleet owners must continuously meet or exceed the ZEV Fleet Milestone percentage as defined by the regulation. Compliance reporting would be required annually and within 30 days of adding vehicles to the fleet. This Measure aims to exceed State requirements by decarbonizing 50 percent of the municipal fleets by 2030. This measure will reduce GHG emissions from municipal operations and demonstrate to the community the feasibility and benefits of transitioning to clean transportation technologies. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure T-11 are included in Table 25.

Table 25 Measure T-11 Actions

Action ID	Attribute	Action
T-11a	Structural	Regional Climate Committee will develop a Zero-emission Fleet Conversion and Purchase Policy to be adopted by each jurisdiction that requires new, and replacement of, municipal fleet vehicle purchases to be EVs or ZEVs. The policy will also include a schedule for replacement of fleet vehicles to comply with the State's Advanced Clean Fleet rule requiring 50 percent of medium and heavy-duty vehicle purchases be zero-emissions beginning in 2024 and 100 percent beginning in 2027. Report annually to CARB on fleet status as required per the Advanced Clean Fleets Regulation.
T-11b	Feasibility	Leverage the Regional Climate Committee conduct a feasibility and cost assessment to determine the number of EV/ZEV chargers and funds needed to support the fleet transition to 50 percent EV/ZEV by 2030.
T-11c	Funding	The Regional Climate Committee will secure funding from programs such as the California Air Resources Board's Clean Vehicle Rebate Project and the Clean Truck and Bus Voucher Incentive Program to increase procurement of EV or ZEV cars, trucks, and other vehicles and installation of EV/ZEV charging/fueling infrastructure at municipal facilities. Evaluate credit generation opportunities within the LCFS program or other potential programs for ZEV/EV fueling and charging stations for the municipal fleet to offset cost of infrastructure development needed to support transition.
T-11d	Structural	Install additional ZEV chargers/fueling stations in municipal parking lots for fleet, employees, and public use to meet projected demand in alignment with feasibility study.
T-11e	Structural	Leverage the Regional Climate Committee to develop a resolution in alignment with Measure T-8a, to replace jurisdiction-owned end-of-life small

Action ID	Attribute	Action
		off-road equipment with electric equipment (e.g., lawn equipment and leaf blowers) at time of replacement and to procure renewable diesel for all applicable jurisdiction owned equipment. Each jurisdiction will need to adopt the resolution while the Regional Climate Committee will support implementation.
2030 GHG Emissions Reduction:		Supportive
2045 GHG Emissions Reduction:		Supportive
Co-Benefits:		Resource Efficiency, Public Health and Equity
KPI:		Reduction in fossil fuel consumption by municipal fleets

Waste

GHG emissions associated with solid waste generated by the community make up approximately 2 percent of Humboldt's regional GHG profile. A majority of emissions associated with waste generation are associated with the decomposition or 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.

Strategy 9: Reduce organic waste

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. Humboldt Waste Management Authority (HWMA) is the primary waste service provider in the region and is responsible for transferring solid and organic waste to processing facilities outside of the County. HWMA partners with waste haulers such as Recology to provide solid waste, recycling, and compost services to residents and business in the region 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, waste produced in the region is sorted and trucked long distances to processing facilities which are outside of county boundaries. This not only limits the community's influence over waste management, but also contributes to regional transportation emissions to haul waste outside of the County. The Strategy for Humboldt solid waste focuses on bolstering regional infrastructure to allow for expanded organic and inorganic materials collection and separation services and providing local organic processing.

Measure SW-1: Establish a local waste separation facility and organics management to be able to reduce waste sent to landfills by 75% by 2030. Reduce GHG emissions by limiting truck trips required to ship waste out of the County and import compost from out of the County.

HWMA is highly invested in reducing organic waste sent to landfill, though there are significant challenges in the local infrastructure that require monetary support and land use access necessary to achieve State goals. This measure primarily seeks to achieve SB 1383 requirements by providing support to HWMA through partnerships and funding and establishing a regional organic waste processing facility to better handle capacity and eliminate shipping costs. In the landfill, organic waste decays without access to light or oxygen and produces methane (CH4) gas. Diverting organic

waste from the landfill reduces the occurrence of this anaerobic decomposition, providing the region with an important opportunity to reduce solid waste GHG emissions. Diverted organic waste can be further processed and repurposed into an array of different types of products, such as compost or renewable natural gas, which can serve to sequester or offset carbon emissions. Thus, managing organic waste provides an important opportunity to employ circular economy methods to reduce GHG emissions and sequester carbon. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure SW-1 are included Table 26.

Table 26 Measure SW-1 Actions

Action ID	Attribute	Action
SW-1a	Feasibility	Regional Climate Committee to work with Humboldt Waste Management Authority (HWMA) and Recology to develop a SB 1383 waste management plan which assesses county-wide waste diversion needs, current capacity, and land-use opportunities for developing organic waste processing facilities within Humboldt County that will meet regional requirements. The assessment should also include an analysis of green bond funding opportunities, applicable green bond programs, and a strategic plan for pursuing funding through green bond programs.
SW-1b	Structural/Funding	The Regional Climate Committee will work with HWMA and an underwriter at a desired green bond program identified in the feasibility study to develop a green bond focused on providing funding for HWMA to construct a regional organics processing facility that will be used to meet SB 1383 diversion and procurement requirements.
SW-1c	Funding	Through the Regional Climate Committee, partner with Recology and/or HWMA to pursue funding, such as the Organics Grant Program from CalRecycle or for projects through California Climate Investment, to reduce generated organic waste from multi-family homes and expand waste diversions programs within the County.
SW-1d	Structural	Meet the requirements of SB 1383 to reduce organics in the waste stream by 75 percent below 2014 levels by 2030 and work towards 90 percent solid waste diversion by 2040 in applicable jurisdictions by leveraging the Regional Climate Committee to provide implementation support. Include activities such as: 1. Implement enforcement and fee for incorrectly sorted materials with sensitivity to shared collection. Utilize funding to implement programs and efforts to increase communitywide organic waste diversion 2. Assure adequate bin signage across commercial and residential areas of acceptable landfill, recyclable, and compostable materials 3. Identify public areas for adding organics collection and recycling bins where needed 4. Work with Recology and HWMA to conduct free food scrap collection pail giveaways and promote curbside organics collection service offered in applicable communities 5. Evaluate opportunities to have community compost hubs throughout the County that is easily accessible for community members. Partner with regional community gardens to increase community wide access to local compost bins

Action ID	Attribute	Action
		6. Identify long-term and alternate solutions for the community's wastewater bio-solids to avoid long hauling distances and develop local, beneficial reuse
SW-1e	Structural	Leverage Regional Climate Committee to draft a templated edible food recovery ordinance for individual jurisdictions to modify and adopt as needed. Alternatively utilize the County's adopted ordinance, HCC 521-13 as a template or guide for drafting ordinances in individual jurisdictions that do not currently have such an ordinance. The ordinance will target edible food generators, food recovery services, or organizations that are required to comply with SB 1383. Ordinance requires all residential and commercial customers to subscribe to an organic waste collection program and/or report self-hauling or backhauling of organics. To support implementation of the ordinance, include the following activities: 1. Work with community food pantries, food suppliers, HWMA, and Recology to identify infrastructure needs to ensure edible food reuse infrastructure in Humboldt is sufficient to accept capacity needed to recover 20 percent of edible food disposed of within Humboldt 2. Regional Climate Committee to work with jurisdictions to establish an edible food recovery program where they are not currently present to minimize food waste. Expand food rescue programs by increasing cold storage capacity, include education and outreach efforts, and incorporate collection/distribution network among businesses, local institutions, and grocery stores. 3. Leverage CalRecycle funding opportunities to support projects that prevent food waste, increase cold storage capacity or rescue edible food 4. Partner with existing food pantries that are locally appropriate for each jurisdiction to identify and advertise locations for surplus food to be taken in the community
SW-1f	Partnership	The Regional Climate Committee will work with HWMA, Recology and individual jurisdictions to implement structural changes listed above and increase service to jurisdictions without organics collection. This is applicable to both jurisdictions subject to SB 1383 and SB 1383 exempt jurisdictions to prepare for future needs to comply with SB 1383.
SW-1g	Feasibility Study	The Regional Climate Committee will coordinate between HWMA and regional wastewater treatment facilities to evaluate the opportunities to process/co-digest food waste at the wastewater treatment plants. Study should include evaluating existing infrastructure and ability to process food waste, an evaluation of necessary infrastructure upgrades needed to process food waste that would comply with SB 1383 standards for recovered organic products, and a return-on-investment evaluation. Study should also include recommendations of viable opportunities and identification of funding opportunities to support implementation and facility upgrades as necessary.
SW-1h	Engagement	The Regional Climate Committee in partnership with Recology and HWMA, will develop and conduct a conduct a Bring Your Own (BYO) education and outreach training for each jurisdiction community on reusables and implementing more sustainable packaging into daily use. The Regional Climate Committee will develop and provide information resources on HWMA and jurisdiction's

Action ID	Attribute	Action
		websites. Partner with libraries and other existing facilities to market campaigns about waste reductions, reuse and repair.
SW-1i	Equity	Leverage the Regional Climate Committee to provide technical and outreach support to jurisdictions with organics and/or recycling services, by establishing relationships with multi-family property owners/managers to develop signage for their properties and to go door-to-door at each multi-family unit yearly to provide supplies and promote proper sorting.
SW-1j	Equity	HWMA to add extra bulky-item pick up service in all jurisdictions to low- and medium-income residents at a subsided cost to help minimize illegal dumping.
SW-1k	Feasibility Study	The Regional Climate Committee will facilitate conducting waste characterization studies every 3 years to inform programs and policies. Leverage study to understand the waste stream and create a plan to increase diversion and reduce contamination. Work with contracted waste haulers and HWMA to develop and implement a comprehensive monitoring and quality control program with a focus on consumer behavior change. This should include tracking of weight or volume of waste produced; consider including information on billing to inform customers of their waste production and including incentives for reduction. Explore reducing frequency of service for residential and commercial waste to least often possible pick up to reduce truck miles/trips.
SW-1l	Equity/ Engagement	Through the Regional Climate Committee create a multi-lingual training/outreach program that can be used in all jurisdictions that is free and accessible to all residents and employees to learn about circular economy practices and diversion strategies and effects of overconsumption. Conduct targeted, multi-lingual, culturally appropriate, and geographically diverse circular economy educational and technical assistance campaigns based on outcomes of waste characterization studies and comprehensive monitoring and quality control program. Topics could include reuse, prolonging the life of common materials and items, and sustainable purchasing. Focus outreach campaign on food waste not going to landfill.
SW-1m	Partnership	Utilize the Regional Climate Committee to partner with schools, retirement communities, and other large institutions throughout the County to create waste diversion and prevention program/procedure/plan.
SW-1n	Structural	The Program Manager will work with regional partners to develop and implement packaging bans to reduce the use of single-use plastics and excess waste proliferation in the waste stream.
2030 GHG Emissions Reduction:		29,689 MT CO_2e
2045 GHG Emissions Reduction:		32,568 MT CO_2e
Co-Benefits:		Resource Efficiency
KPI(s):		Change in total tonnage of landfilled waste (%) Change in landfilled organic waste compared with 2014 baseline levels using waste characterization studies (%)

Water & Wastewater

Emissions associated with water are due to indirect emissions from the electricity consumption for water conveyance, treatment, and delivery to consumers. As such, the GHG emissions from water consumption are included in building electricity GHG emissions in Humboldt's regional inventory. GHG emissions associated with wastewater make up 1 percent of Humboldt's regional GHG profile. Emissions associated with wastewater are due to the direct fugitive emissions from wastewater treatment.

Strategy 10: Conserve water and reduce wastewater emissions

Water and wastewater infrastructure can be managed to reduce the energy needed to transport water and wastewater, and associated GHG emissions. Residential and commercial buildings use water both indoors for cooking, cleaning, bathing, and toilet flushing, and outdoors to irrigate landscaping and maintain pools and fountains. Water efficiency measures not only reduce the amount of water used but also reduce the amount of energy needed to convey, treat, and distribute water. Additionally, water consumption and wastewater generation are interconnected, therefore water conservation efforts will lead to decreases in wastewater generated, as less water is treated through the wastewater system. Primary strategies for reducing emissions associated with wastewater generation are to reduce water consumption and wastewater generation and implement less GHG intensive processing technologies.

Measure WW-1: Expand regional opportunities for implementation of wastewater decarbonization technologies such as anaerobic digesters to reduce GHGs and produce renewable fuel sources.

The community relies on several wastewater facilities and septic systems throughout the County, of which a couple utilize anaerobic digester systems for the capture and utilization of biogas. Additionally, one anaerobic digester in the region is not able to operate 100 percent of the time. Measure WW-1 focuses on expanding regional opportunities for the implementation of wastewater decarbonization technologies, including anaerobic digesters, throughout the Humboldt region. This measure aims to reduce GHG emissions from wastewater treatment processes and generate renewable fuel sources that can be used to decarbonize wastewater facility building energy or provide a supply of decarbonized energy to the community. It also investigates opportunities for expanding wastewater treatment capabilities to process organic waste that would otherwise go to landfill, supporting solid waste diversion and GHG reduction efforts. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure WW-1 are included Table 27.

Table 27 Measure WW-1 Actions

Action ID	Attribute	Action
WW-1a	Feasibility Study	Regional Climate Committee to conduct a feasibility study(s) in jurisdictions with wastewater processing facilities or community primary reliance on septic systems identifying improved wastewater technologies which could be used to mitigate wastewater processing emissions and generate renewable fuel such as RNG or offset on-site process energy use via electricity generated with an anaerobic digester, particularly in relation to septic system improvements. The study should include an in-depth analysis of the current wastewater treatment methods utilized throughout the region, identification of upgrade opportunities

Action ID	Attribute	Action
		and potential co-benefits to the community, and technological restrictions based on regional water quality and discharge requirements. The study should also specifically consider expanding wastewater treatment capabilities to process food waste that would otherwise go to landfill.
WW-1b	Partnership	The Regional Climate Committee will partner with regional wastewater service providers to understand current methods, areas for improvement, and whether there is interest in upgrading their wastewater treatment processes.
WW-1c	Funding	The Regional Climate Committee, with input from the wastewater treatment providers, will research and pursue grants to wastewater facility upgrades or home septic system improvements (where applicable), such as applying to the California State Water Board for Clean Water State Revolving Fund grants, or the Community Development Block Grant Program.
2030 GHG Emissions Reduction:		Supportive
2045 GHG Emissions Reduction:		Supportive
Co-Benefits:		Natural Resource Enhancement, Resource Efficiency
KPI:		Reduction in wastewater generation and wastewater emissions

Measure WW-2: Reduce per capita potable water consumption by 15% by 2030.

Emissions associated with water are due to electricity usage. Because all water providers for the Humboldt region are located within the County boundaries, the energy use associated with water treatment is captured in the building sector and would be addressed with improvements in energy efficiency and acquiring carbon-free energy. However, water conservation efforts also have the added benefit of putting less pressure on water resources across California during times of drought and ensuring more long-term resilience of this vital resource. Measure WW-2 focuses on promoting water conservation by reducing per capita potable water consumption and increasing access to and use of recycled water. The State is currently finalizing the Making Water Conservation a Way of Life regulation, which will set water conservation standards and objectives for certain categories with targets set for each urban water retailer. This measure's primary focus is providing support to water retail provides in the region to align with the regulation as well as providing educational and outreach materials to promote water conservation in the community and from large water users. Additionally, the Measure encourages local water providers and wastewater services to work together to identify opportunities for expanding the recycled water network in the region. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure WW-2 are included Table 28.

Table 28 Measure WW-2 Actions

Action ID	Attribute	Action
WW-2a	Structural	The Regional Climate Committee will work with regional water providers to update their 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 UWMPs as needed to achieve State regulations, which may include:

Action ID	Attribute	Action
		1. Develop or amend Water Shortage Contingency Plans in the region to develop water waste restrictions for households, businesses, industries, and public infrastructure 2. Work with 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 3. Revisit and update the Model Water Efficient Landscape Ordinance as needed. Engage, through regional partnerships, with builders and developers to provide information on the requirements for development projects 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 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 partnerships with local organizations to expand water conservation outreach 6. Revise water and wastewater rates as necessary to ensure cost of service is covered
WW-2b	Engagement	Through the Regional Climate Committee work with the Humboldt County Resource Conservation District (HCRCD) to develop water conservation promotional materials, programs and outreach efforts are in multiple languages and accessible for low-income or disadvantaged and vulnerable communities. Continue to offer and expand water conservation programs to the community including educational programs like water education program for schools and water wise landscape classes as well as incentives like free water conserving deceives, and rebates for rainwater collection systems and turf replacement.
WW-2c	Feasibility Study	The Regional Climate Committee will work with the local water and wastewater providers in the region to develop a Recycled Water Master Plan to assess the feasibility of expanding the recycled water system in the region and establish a roadmap for a recycled water expansion program. The plan will identify 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.
2030 GHG Emissions Reduction:		Supportive
2045 GHG Emissions Reduction:		Supportive
Co-Benefits:		Natural Resource Enhancement, Resource Efficiency
KPI:		Reduction in per capita water consumption

Carbon Sequestration

While the region will reduce GHG emissions across all sectors to achieve as close to zero GHG emissions as possible, some GHG emissions are expected to remain under each jurisdiction's control in 2045. These GHG emissions are expected to be from hard-to-decarbonize sectors, such as long-haul transportation, which have technological limitations or are costly to decarbonize. They can also be expected from sectors that require significant behavior change to decarbonize, such as VMT reduction, because it takes time to normalize new behaviors. Carbon sequestration will offset these remaining GHG emissions to help Humboldt achieve carbon neutrality.

Carbon sequestration is the process of removing carbon from the atmosphere using technology and natural solutions. Carbon can be removed from the atmosphere both naturally by trees and the carbon cycle as well as industrially via carbon capture equipment. The State recognizes that while on-the-ground action for local carbon sequestration and Natural Working Lands (NWL) management will largely be executed and managed by the local government, State agencies must support these communities to implement such actions which includes providing resources, developing implementation frameworks, and providing the increased capacity and technical assistance to the local and regional partners. The State plans to support local governments and partners through various initiatives, including the development of funding programs.

Strategy 11: Increase carbon sequestration

The State goal of reaching carbon neutrality by 2045 relies on up to 15 percent of total emissions being removed via carbon sequestration. At this time, the technology is not available to achieve this level of carbon removal and further analysis would need to be conducted to determine the possibility of achieving this through improved natural land management in Humboldt's forests and wetlands. This Strategy emphasizes the identification and funding of both industrial and nature based physical removal of carbon from the atmosphere to store it in long-term forms, playing a crucial role in achieving regional carbon neutrality by 2045. It focuses on obtaining resource support from the State to obtain NWL objectives and developing private partnerships to explore alternative solutions for carbon sequestration, such as direct air carbon capture and sequestration.

Measure CS-1: Research and implement feasible carbon sequestration technology opportunities to support growth and expansion of green jobs industry within the region.

Measure CS-1 focuses on research needed to understand the viability of carbon sequestration technologies for future regional development to aid in the reduction of GHG emissions and stimulate the growth of the green jobs industry in the area. Artificial (i.e. non-biological processes) carbon capture and sequestration technologies typically capture CO_2 from the atmosphere, or from point source emissions, and store the captured CO_2 in the natural environment. However, with advancing need for solutions, other methods of carbon capture have begun to emerge, such as CO_2 capture from seawater. An additional promising method is producing biochar—a stable form of carbon produced by heating biomass in a low-oxygen environment. Biochar is often produced as a byproduct of bioenergy production processes and can be created through pyrolysis or gasification of organic waste materials like forestry residues, agricultural byproducts, or dedicated energy crops. When applied to soil, biochar not only sequesters CO_2 but also enhances soil fertility, water retention, and crop productivity.

By assessing the feasibility of the carbon capture technologies available, the region will set the groundwork for later implementation of technologies which suit the areas and the community's needs. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure CS-1 are included Table 29.

Table 29 Measure CS-1 Actions

Action ID	Attribute	Action
CS-1a	Feasibility Study	Conduct a carbon sequestration feasibility study facilitated by the Regional Climate Committee to identify emergent technology for carbon sequestration and regional viability of implementation, including consideration of identified carbon sequestration technology facilities (e.g. ocean carbon capture, agriculture methane capture, forest biomass waste to biochar soil amendment, biochar wastewater filtration, forest biomass as green hydrogen fuel, etc.).
CS-1b	Partnerships/ Engagement	As part of Regional Climate Committee responsibilities established in Measure C-1, work with RCEA, HWMA, wastewater facilities, local tribes, businesses, public and private landowners and other applicable interested parties as appropriate to address potential carbon sequestration technologies available to the region, understand limitations and barriers, and develop solution pathways to implementation.
CS-1c	Partnerships/ Structural	Based on feasibility study, leverage the Regional Climate Committee to explore partnerships with technology providers and regional research laboratories (e.g. Cal Poly) for viable carbon sequestration technologies to deploy carbon sequestration pilot projects in the region.
CS-1d	Funding	The Regional Climate Committee shall dedicate staff time or a representative for researching emergent carbon sequestration technologies and potential grant funding sources. This will include researching the potential for wetland conservation and exploring regional mitigation banking.
2030 GHG Emissions Reduction:	Supportive	
2045 GHG Emissions Reduction:	Supportive	
Co-Benefits:	Resource Efficiency, Increase Resilience, Green Jobs	
KPI:	Identification of viable technologies	

Measure CS-2: Offset fossil-based emissions and increase carbon sequestration in the community by achieving SB 1383 procurement requirements (0.08 tons recovered organic waste per person) by 2030.

SB 1383 requires each jurisdiction in California to procure recovered organics waste products to meet annual procurement targets developed by CalRecycle. Recovered organic waste products include compost, mulch, renewable energy generated from anaerobic digestion (e.g., transportation fuel, electricity, and gas for heating), and electricity generated from biomass conversion. While a jurisdiction has the option to procure any combination of recovered organic waste products to fulfill 100 percent of its procurement target, jurisdictions in Humboldt currently aim to meet their procurement targets primarily through sourcing of compost to leverage the carbon sequestration benefits it provides when applied to community lands. Measure CS-2 puts the region on a path to meeting the SB 1383 procurement targets by 2030 and maintain it thereafter. Actions, co-benefits,

key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure CS-2 are included Table 30.

Table 30 Measure CS-2 Actions

Action ID	Attribute	Action
CS-2a	Structural Change	Leverage the Regional Climate Committee to support jurisdictions in enforcing compliance with SB 1383 and aim to exceed the baseline requirement by establishing a minimum level of compost application per year on applicable/appropriate land throughout the region. Maintain procurement policies to comply with SB 1383 requirements for jurisdictions to purchase recovered organic waste products.
CS-2b	Structural Change	Regional Climate Committee to facilitate the establishment of a compost broker program primarily in rural jurisdictions central to agricultural industries which provides agricultural communities with incentives such as subsidies or community shared compost application equipment to aid in the procurement and distribution of high-quality compost.
CS-2c	Engagement	The Regional Climate Committee will work with Recology to provide residents, businesses, and developers with promotional material on where compost can be taken and how it can be used (i.e., landscaping).
CS-2d	Equity	The Regional Climate Committee will work with Recology, HWMA, and community-based organizations to provide free compost procurement services to low-income households and small businesses in all jurisdictions.
CS-2e	Feasibility Study	The Regional Climate Committee will facilitate a soil assessment study to identify applicable locations and quantity of compost that can be applied within each jurisdiction to help meet the procurement requirements of SB 1383 and provide household incentives for small-scale implementation. As part of study, evaluate other carbon sequestration opportunities associated with soil amendments such as biochar.[54]
CS-2f	Feasibility Study	Leverage the Regional Climate Committee to identify viable alternative opportunities for achieving SB 1383 compliance based on activities which are already occurring within the region (e.g. diversion of wastewater biosolids from landfill for agricultural application), or activities which provide co-benefits to the community (e.g. sourcing RNG to replace natural gas consumption, diversion of lumber or yard waste from landfill to be used to produce green hydrogen).
CS-2g	Funding	The Regional Climate Committee with dedicate staff time for researching alternative pathways for achieving SB 1383 compliance and obtaining grant funding for procurement and distribution incentive programs across all jurisdictions.
CS-2h	Partnerships	Through the Regional Climate Committee collaborate with local schools, Public Works, and Parks and Recreation to identify opportunities to apply compost to landscaping, potentially in addition to open space land conservation efforts.
CS-2i	Partnerships	In jurisdictions currently subject to SB 1383 requirements, utilize the Regional Climate Committee to work with regional organic waste haulers (Recology)

[54] Note that biochar is not considered SB 1383 recovered waste product; however, biochar is a known soil amendment opportunity with enhanced carbon sequestration which is why it should also be considered as part of the soil amendment study.

Action ID	Attribute	Action
		and local small-scale commercial composters (e.g. The Local Worm Guy) to identify opportunities for a regional compost procurement program to help meet and exceed the organics procurement provisions of SB 1383 as well as streamline hauler routes through regional collaboration.
2030 GHG Emissions Reduction:		1,532 MT CO_2e
2045 GHG Emissions Reduction:		1,681 MT CO_2e
Co-Benefits:		Natural Resource Enhancement, Resource Efficiency, Increase Resilience, Green Jobs
KPI:		Procurement of SB 1383 compliant recovered organic products

Measure CS-3: Develop a County-wide Natural and Working Lands GHG Inventory baseline by 2027 to better understand the existing and future GHG sequestration and help obtain resources to protect and increase natural carbon sequestration occurring in the region as well as promote biodiverse forests and wetlands resistant to wildfire.

The region is anticipated to contribute significantly to the State's carbon sequestration efforts and may even serve as a larger sink than contributor, but this cannot be verified without a comprehensive inventory of carbon stocks in the region. Establishing a baseline will aid the County in pursuing State funding to protect the County's forestland assets and receive credit for aiding in State goals to protect natural working lands. Measure CS-3 directs the County to build off of North Coast Resource Partnership's 2017 Northern California regional natural working lands study to establish an updated County-wide Natural and Working Lands GHG Inventory baseline by 2027. This initiative seeks to provide a comprehensive understanding of current and future potential GHG sequestration within the County's natural and working lands. The Natural and Working Lands inventory baseline will be folded into future RCAP updates and used to establish GHG sequestration tracking metrics and monitor resiliency efforts. Developing this Natural and Working Lands inventory will identify key areas where natural carbon sequestration is occurring and highlight opportunities to protect and expand these areas. By promoting biodiverse forests and wetlands that are resilient to wildfire, Measure CS-3 supports the dual goals of enhancing carbon sequestration and mitigating climate risks. This measure will help the region obtain funding and resources necessary for conservation and restoration projects, ultimately contributing to long-term climate resilience, biodiversity, and the health of natural ecosystems. Actions, co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure CS-3 are included Table 31.

Table 31 Measure CS-3 Actions

Action ID	Attribute	Action
CS-3a	Feasibility Study	The County will partner with the North Coast Resource Partnership and other interested parties to develop an updated, Humboldt specific natural and working lands GHG Inventory which builds off of the 2017 northern California regional study conducted by the North Coast Resource Partnership. Development of the GHG Inventory should include consideration of requirements specified by prospective grant programs the region would like to pursue.

Action ID	Attribute	Action
CS-3b	Funding	The Regional Climate Committee will apply for at least one grant (e.g. Sustainable Agricultural Lands Conservation Program) 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-3c	Equity/ Partnership	The Regional Climate Committee will work with interested parties, local tribes, and agricultural communities to identify opportunities for expanding wetland conservation areas in a manner that equitably addresses tribal and agricultural interests.
CS-3d	Structural	The Regional Climate Committee and County will work with CalFire and Humboldt County Resource Conservation District to increase necessary equipment and infrastructure resources to better maintain public and private forested area with focus on understory clearing to prevent wildfire.
CS-3e	Partnership	The Regional Climate Committee and the County will work with Humboldt County Resource Conservation District and interested parties to identify challenges and barriers for private sector landowners to implement forest best management practices as identified by CalFire and the Humboldt County Resource Conservation District.
CS-3f	Engagement	The Regional Climate Committee will support rural communities with the development of a community-based volunteer program supporting restoration project activity to create a maintained restoration process. This may involve partnering with local community organizations to communicate sequestration opportunities and facilitate volunteer maintenance projects.
CS-3g	Feasibility Study	Through County efforts, facilitate annual reporting as part of the restoration plan mapping the existing restoration projects and open space lands to gauge progress in restoration activities over time as well as identify any gaps in maintenance activities related to ongoing projects. Incorporate GHG calculations into this monitoring plan to report on the region's contribution as a GHG source or sink.
CS-3h	Structural/ Funding	Engage with third-party to audit the Natural and Working Lands inventory and monitoring reports. Update County-wide inventory to include GHG emissions and sinks from Natural and Working lands in the region. Leverage this data to pursue State funding to protect the region's resource as a GHG sink for the State.
2030 GHG Emissions Reduction:		Supportive
2045 GHG Emissions Reduction:		Supportive
Co-Benefits:		Natural Resource Enhancement, Resource Efficiency, Increase Resilience, Green Jobs
KPI:		NWL Baseline Inventory

Refrigerants

The refrigerants, known as hydrofluorocarbons or HFCs, are considered to be super pollutants because they trap heat in the atmosphere thousands of times more effectively than carbon dioxide, the most prevalent GHG. "*Chemical refrigerants are fast-acting super pollutants and the fastest growing source of climate gases in the world today*," said CARB Chair Mary D. Nichols. "*And as the earth grows warmer, people will need to cool food, medicine and their buildings even more than we do today. We need safer alternatives to be deployed as fast as possible."*

California is required to reduce HFC emissions 40 percent below 2013 levels by 2030 under Senate Bill 1383. The regulations approved by CARB today are the most comprehensive of their kind in the world and will help hit that target. These rules affect commercial and industrial, stationary refrigeration units, such as those used by large grocery stores, as well as commercial and residential air conditioning units. This equipment often leaks refrigerants over time. In other cases, emissions are released when the equipment is dismantled and destroyed at the end of its useful life.

These rules will contribute to reversing the growth trend in HFC emissions, a growing threat to the planet, and help the state achieve its goal of carbon neutrality. CARB estimates the regulations will achieve annual reductions by approximately 3.2 million metric tons of GHGs in 2030 and, with a cumulative reduction of more than 62 million metric tons by 2040, the equivalent of taking more than 12 million cars off the road. Potential benefits in avoided climate impacts could save more than $7 billion through 2040.

Strategy 12: Explore reduction in harmful refrigerant release

Refrigerants are not included in the GHG Inventory which informs the RCAP, as such, their emissions or emissions reductions do not contribute to regional GHG targets. However, refrigerants are recognized as a powerful GHG, and the CARB has an aggressive plan to reduce the volume of refrigerants known as hydrofluorocarbons released into the atmosphere. Additionally, the community has expressed concern about the impact of refrigerants on global warming. It is not clear whether the work being undertaken by CARB will effectively minimize the volume of refrigerants escaping into the atmosphere and whether supplemental local regulations would effectively supplement CARB's in an efficient and cost effective manner. This strategy focuses on obtaining accurate and appropriate data from which to inventory refrigerant released in the County. Follow-on measures and strategies after the development of a baseline would be focused on reducing use or release of refrigerants.

Measure R-1: Prepare a baseline analysis of the volume of HFCs released into the atmosphere and evaluate whether these releases are being adequately addressed by CARB or whether the County should supplement the work of CARB.

The community relies on commercial and industrial scale coolant systems reliant on refrigerants to cool food products and to maintain building temperatures. In Humboldt County it is not clear on the volume of refrigerants that may escape from these systems, nor how much of an effect that has on global warming. The first step that must be taken is to use existing information to determine the amount of refrigerant being released into the atmosphere and evaluate how the CARB regulations are addressing that. If it is determined by the Regional Climate Committee that CARB regulations are not adequately addressing this, then the RCAP may be revised to address this, and local regulations may be developed to minimize release of refrigerants with a high global warming potential. Actions,

co-benefits, key performance indicator, and specific quantitative GHG emissions reductions associated with implementation of Measure R-1 are included Table 29.

Table 29 Measure R-1 Actions

Action ID	Attribute	Action
R-1a	Feasibility Study	Regional Climate Committee to initiate a study of the information available relative to emissions of refrigerants with a high global warming potential in Humboldt County. This study is intended to develop a baseline of emissions for harmful refrigerants. Once this baseline is established the study will coordinate with CARB to determine how the emissions are being tracked and being reduced. The study will then identify areas where emissions of refrigerants are not being addressed and identify potential methods in which the emission of refrigerants may be minimized. Prior to the report being provided to the Regional Climate Committee it shall be provided to CARB for review and comment and shall be provided to interested parties who use refrigerants for their review and comment. The comments from CARB and interested parties shall be reflected in the final report provided to the Regional Climate Committee.
R-1b	Partnership	The Regional Climate Committee will partner with CARB to understand the existing regulatory context and coordinate with refrigerant users to understand the processes and technology availability and cost.
R-1c	Funding	The Regional Climate Committee will pursue grants to cover the cost of this work.
2030 GHG Emissions Reduction: Supportive		
2045 GHG Emissions Reduction: Supportive		
Co-Benefits: Natural Resource Enhancement, Resource Efficiency		
KPI: Refrigerant Baseline Inventory		

5 Implementation

Based on substantial evidence and RCAP specific data, the measures and actions detailed 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. Humboldt will continue to engage the community, provide informative progress updates, and create ongoing opportunities to solicit and incorporate community feedback as policies and programs are developed and infrastructure is constructed. See Appendix C for details on the substantial evidence used to quantify the emissions reduction attributable to each measure. The following section establishes an implementation plan that has been developed based on feasibility given budget and staff capacity.

5.1 CEQA Streamlining

As discussed at the beginning of this document, the CEQA Guidelines provide an option for new projects to streamline the CEQA analysis of GHG emissions by tiering off of a "qualified" GHG reduction plan. The RCAP is a long-term programmatic plan consistent with CEQA Guidelines (See Table 1) that will be implemented through regular monitoring and updates to meet the State's SB 32 GHG emission reduction goals and demonstrate substantial progress towards the State's AB 1279 carbon-neutrality goals. Because the RCAP meets these requirements, if projects and plans within the Humboldt region in jurisdictions that have adopted the RCAP are consistent with the RCAP, CEQA analysis can be streamlined by presuming the project's GHG emissions are not significant. These projects and plans can utilize a CEQA GHG Emissions Analysis Compliance Checklist to demonstrate consistency in a streamlined process. Projects and plans within the Humboldt region that are not consistent with the RCAP, must complete a different assessment utilizing quantitative thresholds of significance to evaluate GHG emissions impacts.

5.2 Tracking, Monitoring, and Reporting

A key to successful implementation is monitoring progress and tracking implementation over time. Therefore, this RCAP should be viewed as a strategic framework that will be reevaluated on an annual basis. As part of the RCAP, Measures will be implemented using a phased approach with progress reports prepared on an annual basis starting in 2026. The annual progress reports will include the preparation of a regional community-wide GHG emissions inventory, as well as status update on implementation of RCAP Measures and Actions. Tracking implementation of the plan in conjunction with the inventory updates will demonstrate the progress the region is making in reducing GHG emissions and achieving its 2030 goal.

Successful implementation of a long-range planning document, like this RCAP, requires detailed tracking that will be completed by the lead responsible party indicated in the Implementation Plan provided in Table 32. This approach relies on individual expertise with collective vigilance instead of placing the onus on one person or department. This approach is essential to successful implementation because it gives everyone a seat at the table and demonstrates that climate action requires collective participation to result in real change. The Regional Climate Committee will oversee the progress monitoring and facilitate progress report preparation with each responsible party indicated. Each responsible party will be responsible for tracking implementation and sharing

data with the Regional Climate Committee. The progress report will include an evaluation of the prepared regional inventory against the regionals 2030 and 2045 targets to assess if the region is on track to achieve the 2030 GHG emissions reduction goal.

5.3 Implementation Plan

In order to achieve the 2030 GHG emissions reductions goals discussed in Chapter 4 and make substantial progress to the 2045 goals, Humboldt will begin implementing the measures and actions as soon as possible to make real progress over the next few years. The RCAP takes a phased approach to implementation beginning with Phase 1, which will occur in the short-term over the next two years (2024-2026). Phase 2 would include implementation of mid-term measures that should begin no later than 2026, while Phase 3 would include implementation of longer-term measures that should begin no later than 2028, that are anticipated to occur after feasibility studies are complete and initial measures are implemented. The RCAP identifies the Phase in which 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 Measures, such as establishment of the Regional Climate Committee to facilitate the implementation of the RCAP is critical to implement first and quickly. Additionally, some actions such as adopting ordinances to decarbonize building stock, preparing educational materials, 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. In order to achieve short- and long-term measure goals, as part of the Implementation Plan a dedicated budget for program managers should be established to provide adequate funding and support for successful execution of each RCAP action. Funding may come from the municipalities' annual budgets, grant funding, loans, bonds, etc. Actions within the implementation plan identify the strategies to obtain the necessary funding.

If the actions identified in the RCAP to meet the 2030 GHG emissions reduction milestone goal are not implemented or if the annual inventory and progress report indicates that the region is off-track from achieving the 2030 goal, 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. Table 32 outlines the implementation timeframe of each RCAP action and the responsible party for leading the implementation and monitoring.

Implementation Team

Humboldt recognizes that to reduce the impacts of climate change and meet the State goals and regional GHG reduction targets, it will take collaboration for successful implementation. The establishment of a Regional Climate Committee will provide significant support in facilitating implementation of the RCAP and in reporting out progress, however it is imperative that there is participation at the jurisdictional and regional partner level. The Implementation Plan shown in Table 32 designates responsible parties for each Action, ensuring that those with relevant expertise are involved in implementation. As the RCAP includes efforts from all jurisdictions within the Humboldt County area, titles and responsibilities of municipal departments by jurisdiction may vary. To provide a common understanding of the types of jurisdictional departments and department

responsibilities intended to oversee implementation of a particular action, the following definitions have been established:

- **Municipal Public Works**: city and county departments, as applicable, which oversee infrastructure and utilities management
- **Municipal Community Development**: city and county departments, as applicable, which is responsible for community engagement
- **Municipal Facility Management**: city and county departments, as applicable, which oversees municipal fleets and the operation and management of municipal buildings
- **Municipal Planning/Building**: city and county departments, as applicable, which oversees permitting, permit compliance, and building codes

In addition to governmental staff, there are Joint Powers Authorities (e.g., HWMA, HCAOG, RCEA, HTA, etc.) with governmental authority, and community-based organizations that also play a role in implementation of RCAP Actions and Measures and will be indicated as a responsible party in the Implementation Plan.

5.4 Looking Forward

Humboldt will conduct ongoing implementation and monitoring of the RCAP GHG emissions reduction measures and report on this progress to jurisdictions City Councils, the County Board of Supervisors, and the public on an annual basis beginning in 2026. A comprehensive RCAP update for GHG emissions reduction targets beyond 2030 will be required. In 2029, it is expected that Humboldt will commence the process to review and update the RCAP to augment or develop new measures and actions to meet the 2045 GHG emissions reduction target. As new technologies and State guidelines are made available and State regulations are adopted, Humboldt will need to augment the RCAP to facilitate further GHG emissions reduction and meet the 2045 carbon neutrality goal.

If, prior to 2029, Humboldt is not making satisfactory advancements toward its 2030 GHG emissions reduction targets, it may be necessary to revise the RCAP. This update would set new or stronger goals for emissions reduction, aiming to increase the reduction efforts and maintain its status as a CEQA-qualified GHG emissions reduction plan. Updating the RCAP could require additional implementation of the existing actions and/or additional actions such as shifting incentive and educational programs to mandatory requirements for the latter Phases of Implementation.

Table 32 Implementation Work Plan

Action ID	Action	Responsible Parties	Timeframe
Measure C-1: Establish a Regional Climate Committee comprised of elected officials from each jurisdiction, HTA, HCAOG, HWMA, and RCEA to be administered by the County.			
C-1a	Pursue and obtain funding to create a Climate Program Manager position to lead the coordination efforts of the Regional Climate Committee. The Regional Climate Committee will be responsible for implementing RCAP measures and actions. The Climate Program Manager will facilitate the work of the Regional Climate Committee made up of responsible parties from each of the region's jurisdictions and agencies. The Manager will work with the Committee to utilize the RCAP as a strategic plan outlining the goals of the Coalition. The Manager will coordinate with staff of the participating jurisdictions and agencies to undertake the work directed by the Committee. Finally, the Manager will develop an annual progress report on RCAP implementation annually to City Councils and County Supervisors to measure progress and establish accountability in achieving RCAP emissions reduction goals.	Municipal Planning/Building (County)	Phase 1 - ongoing
C-1b	The Program Manager represents a larger staff need to fulfill the mission of the Regional Climate Committee and will obtain funding to support several staff in implementing and tracking the RCAP.	Municipal Planning/Building (County)	Phase 1 - ongoing
C-1c	The Regional Climate Committee will develop and provide models, pilot programs, and template policies or ordinances that enable each jurisdiction in the region to implement uniform changes and facilitating local communities in making the necessary structural adjustments to reduce GHG emissions. This will reduce inefficiencies and duplication of effort while ensuring a coordinated regional approach.	Climate Committee	Phase 1 - ongoing
C-1d	Develop and distribute promotional materials and programs across the region to inform the community, gain buy-in, and promote awareness of new and existing programs and opportunities. Leveraging the Regional Climate Committee to prepare such materials will allow for limited resources in the region to be pooled on such efforts thereby reducing strain on jurisdictional staff. This engagement effort should include strategies to plan and address public disbelief around climate change and should relay the message that all community members (whether in urban or rural areas) need to participate in local efforts.	Climate Committee Municipal Community Development	Phase 1 - ongoing

Action ID	Action	Responsible Parties	Timeframe
C-1e	Leverage regional programs to engage and support frontline communities that may experience secondary impacts or not benefit directly from the measures' objectives. Ensure these communities can access regional resources or funding opportunities to mitigate identified impacts and benefit the entire community. The Regional Climate Committee will be charged with engaging with regional programs and identifying appropriate community-based organizations to lead and guide such engagement efforts to ensure voices of vulnerable communities are involved in RCAP implementation and planning.	Climate Committee	Phase 1 - ongoing

Action ID	Action	Responsible Parties	Timeframe
C-1f	Utilize regional resources to conduct efficient regional studies, avoiding redundancy, that provide a clear understanding of the details, obstacles, and feasibility of proposed programs. This includes necessary analyses to identify the best path forward or the feasibility of implementing specific measures. The Regional Climate Committee will aid in identifying the regional expertise and coordinating studies across the region to limit duplication of efforts.	Climate Committee	Phase 1 - ongoing
C-1g	Collaborate regionally to identify and pursue relevant and impactful grants and financial backing to facilitate RCAP implementation across the region. Ensure resources and efforts are directed towards securing funds that can be distributed across the region, such as grants or rebates to support measure implementation and adequate program staffing. Direct the Regional Climate Committee to pursue 3-5 grants for regional efforts to meet RCAP goals per year.	Climate Committee	Phase 1 - ongoing
C-1h	Use the collaborative network of local jurisdictions, agencies, and community-based organizations (CBOs) to attract additional internal and external support and expertise. This includes engaging community organizations that are well-positioned to consistently and sustainably advance specific measures. Leverage the Regional Climate Committee to identify and provide assistance to local jurisdictions' high priority project pursuits which support the RCAP.	Climate Committee	Phase 1 - ongoing
C-1i	Work with the school districts in incorporated cities and unincorporated Humboldt to create a school outreach program or curriculum to educate children from a young age on the RCAP and climate change.	Climate Committee	Phase 1 - ongoing
C-1j	The RCC will communicate with the local Tribes to collaborate on their existing and future efforts to reduce GHG emissions in the region. This collaboration and future partnerships will leverage both agencies ability to obtain funding to complete overlapping work to reduce GHG emissions.	Climate Committee	Phase 1 - ongoing
Measure BE-1:	***By 2030, source 90% of grid-supplied electricity from renewable and carbon-free sources.***		

Action ID	Action	Responsible Parties	Timeframe
BE-1a	Coordinate and support Redwood Coast Energy Authority (RCEA) in developing an effective energy strategy. Strategy should include conducting an assessment to identify the potential obstacles and detail the steps to providing provide renewable and carbon-free power and decarbonization programs outlined in the RePower Humboldt plan such as: 1. Future Capacity constraints 2. Customer solar installations 3. Customer electrification support 4. EV charging infrastructure buildout 5. Building Electrification 6. Advanced biofuel infrastructure 7. Evaluate enrollment rates in RCEA programs annually to understand why residents and businesses opt out or opt to procure standard grid electricity. Use results to adjust strategy for increasing enrollment accordingly	Municipal Public Works RCEA	Phase 1
BE-1b	Through the Regional Climate Committee develop a template policy or ordinance for regional jurisdictions to use to require new commercial and industrial developments to acquire electricity from renewable and carbon-free energy sources such as enrolling with RCEA, incorporating on-site renewable generation, or enrolling in PG&E's 100 percent renewable rate. For each jurisdiction, adapt the templated policy or ordinance as necessary and adopt by 2026.	Climate Committee Municipal Planning/Building Board of Supervisors	Phase 1
BE-1c	Collaborate across the region with interested parties including tribes, labor unions, workforce development boards, State agencies, colleges, universities, industries, and community organizations to increase local energy workforce development. Partner with RCEA, Humboldt State University, and College of the Redwoods to actively develop education and certifications for electrical and construction trades by 2027 to ensure develop a skilled workforce ready to meet the region's energy needs.	Climate Committee Municipal Public Works	Phase 1 – 2
BE-1d	Leverage the Regional Climate Committee to work with RCEA to reduce opt-down rate for new customers to no more than 2 percent. Develop promotional educational materials to inform community members on available incentives and benefits of clean energy and energy efficiency.	Municipal Public Works RCEA Climate Committee	Phase 1 - ongoing

Action ID	Action	Responsible Parties	Timeframe
BE-1e	Engage with the community and partner with community organizations to facilitate increased communication, technical assistance, and access to energy incentives through the California Alternative Rates for Energy (CARE), Family Electric Rate Assistance (FERA), and Low-Income Home Energy Assistance Program (HEAP) programs for low/moderate income households.	Municipal Public Works Municipal Community Development	Phase 1 - ongoing
BE-1f	Work with RCEA to expand and advertise regional energy funding programs as described in the RePower Humboldt plan. Facilitate Humboldt residents and businesses in utilizing energy finance programs such as, but not limited to, the Property Assessed Clean Energy (PACE) program. Conduct targeted outreach to public entities, such as public schools, that are eligible for State and Federal Program loans.	Municipal Public Works RCEA	Phase 1 - ongoing
BE-1g	Coordinate through the Regional Climate Committee to establish and administer a multi-jurisdictional staff position dedicated to identifying and pursuing funding opportunities to support County-wide educational programs, assisting in equitable energy workforce expansion outreach, and providing RCEA with additional funds to expand incentives or subsidies for the community to increase community enrollment. If establishing a dedicated staff position is not feasible, work with the Regional Climate Committee and regional partners to identify resource sharing opportunities for pursuing funding opportunities such as rotating the responsibility across designated agency employees.	Municipal Public Works Climate Committee	Phase 1
Measure BE-2: Increase the development of micro-grids and energy storage across the region to support RCEA's RePower Humboldt goals of enhancing grid capacity and facilitating the electrification of buildings and transportation.			
BE-2a	Develop permit streamlining programs that can be adopted by local jurisdictions to facilitate the streamlined implementation of renewable energy projects as identified in regional energy feasibility study and RCEA RePower Humboldt goals such as energy storage projects, residential and commercial solar installation, and microgrid development.	Climate Committee Municipal Public Works	Phase 1 - ongoing
BE-2b	Direct the Regional Climate Committee to work with RCEA to develop a plan for leveraging CPUC's recently passed Limited Generation Profile option to maximize solar installation developments in alignment with RCEA's RePower Humboldt goals throughout the region.	Climate Committee RCEA	Phase 1 - ongoing

Action ID	Action	Responsible Parties	Timeframe
BE-2c	Engage with the local community, key interested parties, and local-based community organizations representing disadvantaged and vulnerable communities to raise awareness about alternative renewable energy and nano-grid opportunities available through RCEA. Emphasize the increased accessibility to electrification as well as the economic and environmental advantages of electrification while addressing concerns related to emergency response to minimize exceptions. Publicize the connection between RCEA nano-grid efforts and the increased ability to electrify leading to cost savings, funding opportunities, environmental benefits, and flexibility of electrification through jurisdiction websites and permit counters.	Climate Committee Municipal Planning/Building RCEA	Phase 2
BE-2d	As part of Regional Climate Committee responsibilities identified in Measure C-1, engage with RCEA to track progress toward targets set in RCEA's RePower Humboldt plan and identify additional opportunities for local jurisdictions to alleviate barriers to goals set in RCEA's RePower Humboldt plan.	Climate Committee Municipal Community Development RCEA	Phase 1 - ongoing
BE-2e	As part of Regional Climate Committee responsibilities work with RCEA and the Schatz Energy Research Center to identify locations throughout the County that are priority for utility-scale, nano-grid, and micro-grid solar, hydropower, and/or wind energy generation based on aspects such as land availability and suitability, infrastructure needs, resilience, and energy access equity. Coordinate with PG&E on interconnection needs and identify strategies with PG&E of how to best support capacity building on the grid related to micro-grid projects.	Climate Committee RCEA	Phase 2- ongoing
BE-2f	Conduct an equity assessment across the region that includes the identification of potential cost barriers to residential solar development, particularly for low income and rural communities at the end of PG&E distribution infrastructure, and identify feasible sites for solar and battery installation and potential funding sources.	Climate Committee RCEA	Phase 1
BE-2g	Identify facilities that are suitable to operate as regional resilience hubs to protect people from climate related issues. Create a priority list of these facilities with particular focus on servicing disadvantaged communities and work with RCEA to prioritize implementation of on-site microgrid and energy storage on identified.	Climate Committee Municipal Public Works RCEA	Phase 1

Action ID	Action	Responsible Parties	Timeframe
BE-2h	Regional Climate Committee will work with RCEA to pursue regional funding opportunities that can be used to develop resilient microgrids and incentivize new housing developers to install solar and on-site batteries, particularly for affordable housing developments. Aim to pursue 3 grant or funding opportunities annually focused on microgrids and/or energy storage expansion.	Municipal Public Works RCEA	Phase 1
Measure BE-3 Urban:	***Reduce existing residential building natural gas consumption by 4% by 2030 and 74% by 2045.***		
BE-3a Urban	Leverage the Regional Climate Committee to lead the development of a decarbonization plan for urban areas that assesses the feasibility and cost for electrification retrofitting for residential buildings as well as identifies potential equity concerns/impacts. The plan should identify strategies and/or specific projects to decarbonize 4 percent of existing residential and multi-family buildings by 2030 and strategies for increasing infrastructure readiness to electrify through 2045. The plan should give consideration for increased electricity capacity needs and RCEA's RePower Humboldt goals to meet increased capacity need. The plan should also identify a variety of equitable decarbonization solutions and potential projects such as partial electrification and increased energy efficiency options for mixed-fuel residences that face barriers to full electrification. The study should also identify the funding and financing requirements necessary to support the community in this transition.	Climate Committee Municipal Public Works (cities) RCEA	Phase 1
BE-3b Urban	As part of Regional Climate Committee responsibilities identified in Measure C-1, petition PG&E to help identify priority areas for electric grid expansion projects to increase regional electric grid capacity and islanding capabilities to allow for increased building electrification capacity.	Climate Committee RCEA	Phase 1 - 3
BE-3c Urban	Develop a home energy advisory service administered by the Regional Climate Committee that assists existing homeowners to better understand the cost of building decarbonization options including partial and full home electrification, identifies service providers, and provides support for homeowners to access electrification incentives from the Energy Smart Homes program.	Climate Committee RCEA	Phase 2 - ongoing

Action ID	Action	Responsible Parties	Timeframe
BE-3d Urban	Work with the Regional Climate Committee to identify and pursue funds through CARB, the Inflation Reduction Act, and the Infrastructure Investment and Jobs Act including: 1. DOE block grants 2. On Bill financing through Utility bills 3. Green bonds 4. Grant Anticipation Notes or Short-Term Loans 5. Tax exempt lease purchases 6. Energy as a service 7. Energy Performance Contracting from Energy Service Companies (ESCOs)	Climate Committee Municipal Public Works (cities) RCEA	Phase 1 - ongoing
BE-3e Urban	Work with the Regional Climate Committee to develop and manage educational/promotional materials that each jurisdiction can use to educate the community on ways to finance home decarbonization. Materials should include information and links to existing available rebates for Heat Pumps, Weatherization, Smart Thermostats, Appliances, and Pool Pumps as well as other rebates offered through RCEA of the local jurisdiction if applicable.	Climate Committee	Phase 1
BE-3f Urban	Work with the local contractors, realtors, homeowner associations, landlords, and labor unions to develop a comprehensive training program, including hosting workforce development trainings discussing the benefits and technical requirements of electrification as well as addressing interested party concerns regarding electrification.	Municipal Public Works (cities) Municipal Community Development (cities)	Phase 2 - ongoing
BE-3g Urban	Develop a fund for low income and affordable housing electrification pilot projects in collaboration with affordable housing owners, utilities, and the community. Work with RCEA to develop a program to offset cost for occupants using financing and through the sourcing of grant funds to subsidize cost.	Municipal Public Works (cities) RCEA	Phase 2 - ongoing
Measure BE-3 Rural:	***Reduce existing residential fossil-fuel consumption in households not connected to natural gas infrastructure by 2% by 2030***		

Action ID	Action	Responsible Parties	Timeframe
BE-3a Rural	Regional Climate Committee to conduct a feasibility study to establish local low-carbon fuel alternative, such as renewable propane, sourced from local resources such as forest biomass waste which can be used as direct substitutes for propane or diesel building fuel. The feasibility study should consider procurement and cost considerations with a focus on equity for low-income households, and map communities with significant propane and wood fuel use to identify accessibility strategy for acquiring alternative fuels (e.g. renewable propane, sustainably harvested wood products, renewable diesel) and/or undergoing home electrification.	Climate Committee Municipal Public Works (county)	Phase 1
BE-3b Rural	As part of Regional Climate Committee responsibilities identified in Measure C-1, petition PG&E to help identify priority areas for rural electric grid expansion projects to increase regional electric grid capacity and islanding capabilities to allow for increased building electrification capacity.	Climate Committee	Phase 1- 3
BE-3c Rural	Promote existing available rebates to rural communities for Heat Pumps, Weatherization, Smart Thermostats, Appliances, and Pool Pumps to educate the community on ways to finance electrification or otherwise decarbonize their residences. Provide assistance to rural homeowners in assessing the viability and permitting of installing off-grid solar and battery alternative energy sources on their homes and finance options.	Municipal Public Works (county) RCEA	Phase 1 - ongoing
BE-3d Rural	For viable alternative fuel sources identified in a feasibility study, establish procurement and distribution supply centers within easy access of rural communities.	Municipal Public Works (county) Municipal Planning/Building (county)	Phase 2
BE-3e Rural	The Regional Climate Committee will lead the effort to identify, access, and provide funding assistance for the procurement of alternative fuels, such as biomethane, in alignment with SB 1383 procurement requirements. Advocate to the California Public Utilities Commission (CPUC) for inclusion of alternative low-carbon fuels substitution, such as renewable propane, to be allowed in ratepayer funded programs including energy efficiency programs.	Climate Committee	Phase 2 - 3
Measure BE-4: Reduce existing nonresidential building natural gas consumption by 5% by 2030 and 79% by 2045.			

Action ID	Action	Responsible Parties	Timeframe
BE-4a	As part of the development of the decarbonization plan led by the Regional Climate Committee referenced in Measure BE-3 Urban, identify nonresidential building electrification barriers and develop a nonresidential building decarbonization strategy with analysis supporting future adoption of a nonresidential building decarbonization ordinance. The plan should give consideration for increased electricity capacity needs and for other decarbonization strategies that would be needed to reduce nonresidential natural gas consumption by at least 5 percent. As part of strategy development, conduct outreach to small businesses to understand potential equity impacts of a decarbonization policy. The plan should also assess ordinance parameters for including large scale renovation as part of the new commercial building ordinance requirements established for each organization (Measure BE-6).	Climate Committee RCEA Municipal Planning/Building	Phase 1
BE-4b	Work with the Regional Climate Committee to develop a template Commercial Energy Performance Assessment and Disclosure Ordinance for commercial and multi-family buildings to be adopted within each jurisdiction by 2027. The ordinance should require energy use disclosure consistent with State law (AB 1103) and the use of the ENERGY STAR Portfolio Manager benchmarking tool. Include regulatory mechanism (e.g., permitting and approval requirements, building codes and standards modification) that limits expansion of natural gas infrastructure and incentivizes appliance replacement.	Municipal Planning/Building Board of Supervisors Climate Committee	Phase 2
BE-4c	Establish streamlined permitting in each jurisdiction for energy efficiency technologies, onsite renewable energy, and battery storage in buildings and critical facilities that require power during emergencies or power outages. Incorporate equity considerations into permitting process for all other building battery storage including prioritization, rebates, and outreach.	Municipal Planning/Building	Phase 2

Action ID	Action	Responsible Parties	Timeframe
BE-4d	As part of Regional Climate Committee responsibilities identified in Measure C-1, develop an outreach campaign to promote building decarbonization and include items in the program such as: 1. Conduct engagement efforts for the commercial and industrial sector to identify ways jurisdictions and the Regional Climate Committee can support commercial energy storage installations and neighborhood scale microgrid opportunities 2. Facilitate funding opportunities for commercial business electrification by identifying and supporting grant opportunities available to the community, prioritizing small and frontline community owned businesses 3. Use feedback provided during the community outreach process for small businesses to mitigate potential equity impacts of a future building performance program 4. Distribute utility bill inserts to advertise the incentive programs or grants available and the cost benefits of electric appliances 5. Target outreach to businesses, builders, developers, local contractors, and property managers with information describing the financial benefits of replacing natural gas appliances with all electric appliance when they apply for permits 6. Provide informational webinars and an updated website to advertise and promote All-Electric Building Initiative rebates and incentives 7. Promote the use of the Energy Star Portfolio Manager program and energy benchmarking training programs for nonresidential building owners	Climate Committee	Phase 2 - ongoing
Measure BE-5: Decarbonize 95% of new residential building construction by 2027			

Action ID	Action	Responsible Parties	Timeframe
BE-5a	Regional Climate Committee to develop an energy performance ordinance, EDR, reach code, or zero NOx threshold for new residential construction that can be modified by each jurisdiction as necessary to conserve staff resources. Adopt the ordinances within each jurisdiction to decarbonize 95 percent of new residential buildings by 2027 and update every 3 years thereafter if not included within State building codes. As part of building decarbonization ordinance development and subsequent updates, consider the following: 1. Minimize the exemptions associated with the ordinance, while allowing for health and safety exemptions as necessary and exploring potential exemptions for specific use cases determined to have substantial economic development or business impacts 2. Require the submittal of an infeasibility waiver to review specific end uses where electrification is technologically infeasible 3. Require that any end-use deemed infeasible for electrification exceeds existing Title 24 energy efficiency standards and be electric ready for future electrification 4. Specify that affordable housing developments will be all-electric to ensure no stranded assets 5. Establish substantial remodel and improvement definitions to be included in the ordinance 6. Track and enforce requirement compliance through a permitting compliance program managed by each jurisdiction 7. Revise ordinance during update cycle as necessary to meet 95 percent goal.	Municipal Planning/Building Board of Supervisors Climate Committee	Phase 2
BE-5b	Conduct feasibility study(s) to identify local decarbonization barriers for new residential developments and develop a residential building decarbonization strategy with analysis. The feasibility study should include developing a new residential building decarbonization plan that assesses the grid feasibility and cost for electrification at certain legislative threshold requirements in consideration of leveraging RCEA residential nano-grid and battery storage options. The feasibility study should assess the potential cost impacts to multifamily and affordable housing new developments and identify potential strategies for mitigating negative impacts for equitable electrification.	Climate Committee Municipal Public Works RCEA	Phase 1

Action ID	Action	Responsible Parties	Timeframe
BE-5c	Leverage the Regional Climate Committee to lead engagement efforts 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, the Affordable Housing and Sustainable Communities (AHSC) Program, and the California Electric Homes Program (CalEHP). Regularly investigate and leverage other incentive programs available for electrification of new buildings.	Climate Committee Municipal Planning/Building	Phase 2 - ongoing
BE-5d	Through the Regional Climate Committee, work with local contractors, realtors, homeowner associations, landlords, and labor unions to develop a comprehensive training program, including hosting workforce development trainings discussing the benefits and technical requirements of local municipality building decarbonization legislation and the most effective pathways to achieving requirements. Include information on load calculations to avoid service upgrade requirements	Climate Committee Municipal Planning/Building Municipal Community Development	Phase 2 - ongoing
BE-5e	Partner with RCEA and PG&E to circumvent or mitigates electric utility infrastructure capacity constraints.	Municipal Planning/Building RCEA	Phase 2 - ongoing
BE-5f	Collaborate with RCEA to develop and fund locally implemented programs to help customers in accessing financing options for energy projects and rebates for cleaner, energy efficient technology.	Municipal Planning/Building RCEA	Phase 2 - ongoing
Measure BE-6: Decarbonize 95% of new nonresidential building construction by 2027			

Action ID	Action	Responsible Parties	Timeframe
BE-6a	Adopt within each jurisdiction an energy performance ordinance, energy design rating (EDR), reach code, or zero NOx threshold to decarbonize 95 percent of new nonresidential buildings by 2027 and update every 3 years thereafter if not included within State building codes. As part of building decarbonization legislation development and subsequent updates, consider the following: 1. Direct the Regional Climate Committee to develop a template ordinance that can be modified by each jurisdiction as necessary to conserve staff resources. 2. Minimize the exemptions associated with the ordinance, while allowing for health and safety exemptions as necessary and exploring potential exemptions for specific use cases determined to have substantial economic development or business impacts. 3. Require the submittal of an infeasibility waiver to review specific end uses where electrification is technologically infeasible. 4. Require that any end-use deemed infeasible for electrification exceed existing Title 24 energy efficiency standards and be electric ready for future electrification. 5. Establish substantial remodel and improvement definitions to be included in the ordinance. 6. Enforce requirement compliance through the same permitting compliance program as for residential building decarbonization. 7. Establish EDR requirements for new non-residential buildings that incentivize electrification and in a case where electrification is infeasible, requires higher energy efficient and low emissions equipment to meet the EDR. 8. Track effectiveness of ordinance through permitting compliance program and revise ordinance during update cycle as necessary to meet 95 percent goal.	Municipal Planning/Building Board of Supervisors Climate Committee	Phase 2

Action ID	Action	Responsible Parties	Timeframe
BE-6b	Conduct feasibility study(s) to identify decarbonization barriers for commercial buildings and develop a commercial building decarbonization strategy with analysis supporting future adoption of commercial decarbonization legislation. The feasibility study should include a comprehensive nonresidential building electrification plan that assesses the grid feasibility and cost for electrification and opportunities to mitigate grid and cost barriers by leveraging RCEA microgrid and battery storage options. The feasibility study should assess potential decarbonization legislation exemptions for commercial and industrial operations that are significantly restricted by available technology for electrification.	Climate Committee Municipal Planning/Building RCEA	Phase 1
BE-6c	Connect developers with RCEA to identify applicable incentive programs in line with RCEA RePower goals that could benefit new building developments such as microgrids which can aid businesses in overcoming restrictions to electrification or decarbonization of processes.	Municipal Planning/Building	Phase 1 - ongoing
BE-6d	Through the Regional Climate Committee, work with local contractors, realtors, homeowner associations, landlords, and labor unions to develop a comprehensive training program, including hosting workforce development trainings to discuss the benefits and technical requirements of decarbonization. .	Climate Committee Municipal Planning/Building	Phase 2
BE-6e	Partner with RCEA and PG&E to establish a clear path for electrification of new nonresidential buildings which meet EDR requirements and circumvent or mitigate electric utility infrastructure capacity.	Municipal Planning/Building RCEA	Phase 2
Measure BE-7: Decarbonize 30% municipal buildings and facilities by 2030			
BE-7a	Regional Climate Committee to develop a template resolution for each jurisdiction to decarbonize 30 percent of municipal buildings and facilities by 2030 and 100 percent by 2045 by retrofitting natural gas appliances with electric alternatives, conversion of street lights to solar or LED, and install on-site electricity generation and storage capacity. Include in the resolution an 'electric first' purchasing policy for any equipment or appliances in need of replacement.	Municipal Facility Management Board of Supervisors	Phase 1

Action ID	Action	Responsible Parties	Timeframe
BE-7b	Coordinate with the Regional Climate Committee and RCEA to conduct energy audits of municipal buildings to establish a baselines of current energy consumption and identify the largest energy users or municipal buildings with the greatest natural gas consumption. Utilize audit results to prioritize municipal buildings to decarbonize. Conduct follow-up energy audits every 3 years to track progress. Leverage data from buildings reporting to the Building Energy Benchmarking Program established under AB 802 where possible to reduce labor.	Municipal Facility Management RCEA	Phase 1 - ongoing
BE-7c	Develop a study through the Regional Climate Committee which estimates renewable energy generation on County and local jurisdiction facilities, identifies a priority list of sites which may serve as regional resilience hubs, and a proposed schedule for implementing the prioritized energy projects. The study should also seek to understand barriers to installing additional distributed energy resources such as solar and battery storage, or other renewable energy generation infrastructure, at municipal facilities.	Municipal Facility Management RCEA	Phase 2
BE-7d	Identify and pursue funding sources and partnerships needed for successful implementation as well as plan for directing resources through each jurisdiction for funding.	Municipal Facility Management Climate Committee	Phase 1
Measure BE-8: Advocate for Offshore Wind developers to fund transmission infrastructure and work with PG&E, the California Public Utilities Commission (CPUC), and other related agencies to build electrical transmission infrastructure to supply Humboldt with energy produced by the future offshore wind projects which will increase regional supply and resilience			
BE-8a	Dedicate Regional Climate Committee staff time to work with local organizations (e.g. 350Humboldt, Redwood Region Climate & Community Resilience Hub, COREHub) to petition the CEC and Humboldt Offshore Wind developers, PG&E, the California Independent System Operator, the CPUC and other relevant decision makers to implement electricity transmission and distribution to the Humboldt region.	Climate Committee Municipal Community Development	Phase 2
BE-8b	Have the Regional Climate Committee advocate to the CEC and State to allow for an equitable rate tiering law to provide affordable rates for LIDAC communities in Humboldt County.	Climate Committee RCEA	Phase 2 - 3

Action ID	Action	Responsible Parties	Timeframe
BE-8c	Leverage the Regional Climate Committee to work with California Independent System Operator (ISO), California Public Utilities Commission (CPUC), the California Energy Commission (CEC), the off Humboldt Offshore Wind projects and PG&E to identify pathways to establish equitable regional access to electricity produced by the offshore wind projects. This may include supporting permitting and development processes necessary for the proposed new Humboldt 500 kV substation as well as advocating to include distribution capacities at the substation for Humboldt County.	Climate Committee	Phase 2 - 3
BE-8d	Direct the Regional Climate Committee to evaluate and pursue opportunities for the Environmental and Climate Justice Community Change Grant through the Inflation Reduction Act or other available programs to advance clean energy from the wind-farm projects. Aim to apply for at least 3 grants annually.	Climate Committee Municipal Public Works	Phase 2
BE-8e	Lobby PG&E, the California Public Utilities Commission (CPUC), and other related agencies to fund and build enhanced energy transmission infrastructure throughout Humboldt County to ensure that renewable energy produced by the offshore wind projects can be distributed throughout the County. Also lobby offshore wind developers to contribute to the funding of such transmission upgrades.	Climate Committee Municipal Public Works	Phase 2 - 3
Measure T-1 Urban: Implement programs, such as those identified in HCAOG's RTP, to increase the mode share of active transportation in urbanized areas from 9% to 12% by 2030, thereby achieving a regional active transportation mode share of 8%			
T-1a Urban	Regional Climate Committee to aid the urbanized areas of Humboldt by partnering with HCAOG and HTA to identify and pursue grant opportunities such as the Active Transportation Program, AARP Community Challenge, CalEPA's Environmental Justice Action Grants, and Caltrans Sustainable Transportation Planning Grants, etc., to fund active transportation projects identified in the Regional Transportation Plan. Aim to apply for at least 3 grants annually.	Climate Committee HCAOG HTA	Phase 1 - ongoing
T-1b Urban	In urbanized areas with high alternative transit expansion potential work with the Regional Climate Committee to facilitate community outreach on transportation alternatives and promote infrastructure improvements and expansion identified in HCAOG's Regional Transportation Plan. Continually improve methods for engaging the community, gathering input, and utilizing it to prioritize projects.	Climate Committee Municipal Community Development (urban)	Phase 1 - ongoing

Action ID	Action	Responsible Parties	Timeframe
T-1c Urban	Leverage the Regional Climate Committee to pursue and access funding to develop and maintain regional webpage and app showing pedestrian and bike trails, bike lanes and bus times and routes. Distribute active transportation maps and promotional materials to hotels and tourism centers to increase visitor use of active transportation. Advertise and promote Humboldt Bikeshare program managed by the City of Arcata, Cal Poly Humboldt, and Tandem Mobility.	Climate Committee Municipal Community Development (urban) HCAOG	Phase 2 - ongoing
T-1d Urban	Identify equity barriers to safe bike and pedestrian infrastructure through community outreach and use of big data driven analysis as well as targeted community outreach to better understand nuanced barriers. Include prompts in outreach around ways to improve social and modal equity in the active transportation systems and programs. Develop a priority list of active transportation projects from HCAOG's Regional Transportation Plan based on level of impact, expansion of inter-jurisdictional connectivity, and historically under-invested communities.	Climate Committee Municipal Public Works (urban) HCOAG	Phase 1
T-1e Urban	Increase inter-connectivity across the region working with HCAOG, Caltrans and the Regional Climate Committee representatives to: 1. Evaluate and prioritize land use projects and active transportation projects for their impact on increased regional connectivity 2. Identify hurdles limiting connectivity and use, such as last-mile commute limitations 3. Facilitate coordination across jurisdictions and rural and urban areas to plan development in a coordinated and most strategic manner 4. Apply for regional funding opportunities focused on increased inter-connection and VMT reduction 5. Apply for regional funding opportunities for maintenance needs for non-motorized transportation routes 6. Implement the VMT mitigation measures associated with VMT thresholds	Climate Committee HCAOG Caltrans	Phase 2 – Phase 3
T-1f Urban	The Regional Climate Committee will work with the local jurisdictions to develop road-related policies that require installation of multimodal transportation features where feasible.	Climate Committee	Phase 2 – Phase 3

Action ID	Action	Responsible Parties	Timeframe
Measure T-1 Rural: Implement programs, such as those identified in HCAOG's RTP, that increase access to safe active transportation, to increase the mode share of active transportation in rural areas from 5% to 6% by 2030 thereby achieving a regional active transportation mode share of 9%			
T-1a Rural	Regional Climate Committee to conduct a feasibility study evaluating existing bike parking facilities in rural areas and what improvements can be made to increase supply, reduce theft, and increase rider attraction. Include in the study an analysis of current and future land use trends and identify active transportation facility development which would result in high inter- connectivity impact. The study should focus on needs to better connect rural communities to city centers, job centers, and amenities.	Climate Committee	Phase 1
T-1b Rural	Develop a priority list of active transportation projects from HCAOG's Regional Transportation Plan based on level of impact, expansion of inter-connectivity, and historically under-invested communities where there is currently no or limited pedestrian and bicycle infrastructure as informed by feasibility study.	Municipal Public Works (rural) HCAOG	Phase 1
T-1c Rural	The Regional Climate Committee will work with the regions jurisdictions, HCAOG, and CalTrans to obtain funding for the construction of bikeway and pedestrian systems to improve interconnection within Humboldt County. Focus areas will be projects that connect rural communities to high employment areas such as City of Eureka, Arcata, and Fortuna as well as nearby counties, State, and federal infrastructure through integration of bicycle facilities as part of other roadway construction projects (e.g. CalTrans mobility hub and highway projects).	Regional Climate Committee HCAOG	Phase 2 - ongoing
T-1d Rural	Partner with California Department of Transportation (CalTrans) District 1 Pedestrian and Bicycle Advisory Committee (PBAC) to track progress on implementation of bicycle and pedestrian projects in the region, ensure that projects being planned are consistent with the District Active Transportation Plan, and to represent the regions rural jurisdictions needs to the PBAC.	Climate Committee Municipal Public Works (rural)	Phase 2 - ongoing
T-1e Rural	Regional Climate Committee to work with jurisdictions in rural regions that have planned land use development to establish standards for when and how new residential subdivisions, multi-family, and mixed-use developments shall provide inter- connected bicycle and pedestrian facilities and amend local codes accordingly.	Climate Committee Municipal Public Works (rural)	Phase 2 - 3

Action ID	Action	Responsible Parties	Timeframe
T-1f Rural	Increase community awareness of active transportation infrastructure projects occurring and those completed. Work with HCAOG to continue to fund, develop, and maintain regional webpages and apps showing pedestrian and bike trails, bike lanes, and bus times and routes. Distribute active transportation maps and promotional materials to hotels and tourism centers to increase visitor use of active transportation.	Municipal Public Works (rural) Climate Committee HCOAG	Phase 1 - ongoing
T-1g Rural	Partner with the tourism and business sectors of larger tourism and employment regions of the County to identify pathways to increase active transportation from tourists and employees.	Climate Committee Municipal Community Development (rural)	Phase 2
T-1h Rural	Regional Climate Committee to identify and apply for grant opportunities such as the Active Transportation Program, AARP Community Challenge, CalEPA's Environmental Justice Action Grants, and Caltrans Sustainable Transportation Planning Grants, etc., to fund rural active transportation projects identified in the Regional Transportation Plan.	Municipal Public Works (rural) Climate Committee	Phase 1 - ongoing
T-1i Rural	Leverage the Regional Climate Committee to fund the development of local subsidy for low-income residents across the region 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 percent discounted e-bike share rate.	Climate Committee Municipal Community Development (rural)	Phase 2
Measure T-2 Urban: Expand the public transit network in support of HCAOG's Regional Transportation Plan to increase public transit mode share from 2% to 20% public transit mode share in urbanized areas to achieve a regional 13% public transit mode share by 2030			
T-2a Urban	Regional Climate Committee to work with Humboldt Transit Authority (HTA) and HCAOG to support implementation of measures to increase use of public transportation services in the region as specified in HCAOG's Regional Transportation Plan, and work toward a 10-minute headway in urban areas. This should include, but is not limited to: 1. Improving passenger transfer among local routes and between local and intercity routes (e.g., North State Express and Amtrak) 2. Improving shelters at bus stops 3. Electronic signage and/or real-time updates of wait time until next bus	Climate Committee HTA Municipal Public Works (urban)	Phase 2

Action ID	Action	Responsible Parties	Timeframe
T-2b Urban	For areas with significant tourism industry, 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: 1. Identify community boundary locations for tourism designated parking and optimal route connectivity 2. Identify opportunities for town shuttle services and park-and-ride locations for residents and tourists 3. Gauge potential of partnerships with big tourism destinations and local businesses to implement direct public transit routes between park and ride and the relevant tourist destinations 4. Identify opportunities for dogs to be included in a shuttle service to locations that allow dogs	Municipal Public Works (urban) HCAOG	Phase 1
T-2c Urban	Leverage the Regional Climate Committee 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 outreach campaigns that are transit focused. Develop marketing materials and provide them to the local jurisdictions to publicize public transportation improvements as they are planned and implemented in a variety of methods (social media, newspaper, radio, etc.) and languages to help facilitate use and success of improvement	Climate Committee	Phase 1
T-2d Urban	Work with HTA to plan facility upgrades that include design improvements of seating and weather protection at bus stops and along transportation routes. Implementation should also include consideration of climate change impacts and increasing micro-transit access to the improved public transit network facility. Incorporate design changes throughout infrastructure modifications, including real-time updates of bus arrival.	Municipal Public Works (urban) HTA	Phase 1 – Phase 2
T-2e Urban	Work with HTA to prioritize public transportation access and improvements in low-income areas of the region and at major destinations. This could include surveying existing transportation routes, schedules, and facilities throughout each jurisdiction as part of HCAOG's Sustainable Transportation Planning Grant Program and improving public transportation facilities and expand access to transit (i.e., first and last-mile access).	Municipal Public Works (urban) HTA	Phase 2

Action ID	Action	Responsible Parties	Timeframe
T-2f Urban	Regional Climate Committee to collaborate HTA and HCAOG in obtaining grant funding for service expansion and improvements particularly in underserved and marginalized areas. Also include assistance for working with the appropriate State agencies to petition for updates to the farebox ratio to allow HTA greater access to using funds for self--advertisement.	Municipal Public Works (urban) HTA Climate Committee	Phase 1 - ongoing
T-1g Urban	The Regional Climate Committee will work with local jurisdictions to prioritize spending of transit-specific funding for transit needs first.	Climate Committee Municipal Public Works (urban)	Phase 1 - ongoing

Action ID	Action	Responsible Parties	Timeframe
Measure T-2 Rural: Develop a robust public transit network in support of HCAOG's Regional Transportation Plan to increase public transit mode share from 1% to 10% in rural areas and achieve a regional 13% public transit mode share by 2030			
T-2a Rural	Regional Climate Committee to work with HTA and HCAOG to support implementation of measures to increase use of public transportation services in the region as specified in HCAOG's Regional Transportation Plan and work toward a 30-minute headway in rural areas. This should include, but is not limited to: 1. Improving passenger transfer among local routes and between local and intercity routes (e.g., North State Express and Amtrak) 2. Improving shelters at bus stops 3. Prioritizing infrastructure improvements in existing communities that enable people better access and use of public transit 4. Electronic signage and/or real-time updates of wait time until next bus	Climate Committee HTA	Phase 1 - ongoing
T-2b Rural	For areas with significant tourism industry, 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: 1. Identify community boundary locations for tourism designated parking and optimal route connectivity. 2. Identify opportunities for town shuttle services and park-and-ride locations for residents and tourists. 3. Gauge potential of partnerships with big tourism destinations and local businesses to implement direct public transit routes between park and ride and the relevant tourist destinations.	Municipal Public Works (rural) Climate Committee HCAOG	Phase 1

Action ID	Action	Responsible Parties	Timeframe
T-2c Rural	Work with HCAOG and HTA to conduct a feasibility study to explore alternative forms of public transit, such as micro transit including on-demand shuttles, car share programs, bike share programs, and scooter share programs. Micro transit is a type of on-demand, shared transportation service that typically operates with smaller vehicles, such as vans or mini-buses, and offers flexible routes and schedules. 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. Evaluate the effectiveness of the micro transit pilot program in McKinleyville to determine opportunities for implementing a similar program in other rural locations of the County.	Climate Committee HCAOG Municipal Public Works (rural)	Phase 1
T-2d Rural	Based on the findings of the feasibility study, work with the Regional Climate Committee to develop a template 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.	Climate Committee Municipal Public Works (rural) Board of Supervisors (rural)	Phase 2
T-2e Rural	Require large nonresidential and mixed-use developments to participate in Transportation Demand Management strategies, including providing shuttle services between employment centers and key transit centers, offering telecommuting, and encouraging use of pre-tax commute benefits.	Municipal Planning/Building (rural)	Phase 2
T-2f Rural	Market and publicize public transportation improvements as they are planned and implemented in a variety of methods (social media, newspaper, radio, etc.) and languages to help facilitate use.	Climate Committee Municipal Community Development (rural) HTA	Phase 2 - ongoing
T-2g Rural	Work with HTA in the implementation of facility improvements to rural transportation stops to include design improvements of seating and weather protection. Implementation should also include consideration of increasing access to the improved public transit network facility.	Municipal Public Works (rural) Climate Committee HTA	Phase 1 - ongoing

Action ID	Action	Responsible Parties	Timeframe
T-2h Rural	The Regional Climate Committee will work with local jurisdictions to prioritize spending of transit-specific funding for transit needs first.	Climate Committee Municipal Public Works (rural)	Phase 1 - ongoing

Action ID	Action	Responsible Parties	Timeframe
T-2i Rural	Regional Climate Committee will collaborate with the County, cities, HTA and HCAOG in order to identify roads, projects types, and project locations in the rural areas that would increase the accessibility and use f public transit. The Committee will research and obtain potential funding opportunities for these road improvements, such as through Senate Bill 1 funding programs.	Climate Committee HCAOG HTA Municipal Public Works (rural)	Phase 1 - 3
Measure T-3: Reduce regional VMT by increasing promotion of mixed-use development in infill priority areas and accelerate smart growth development by requiring local jurisdictions to adopt modified or new land use zoning designations to limit urban sprawl and promote high-density development.			
T-3a	Work with the Regional Climate Committee to develop template land use and development policy to enable and encourage infill development and streamline zoning changes that allow for higher density housing development. Work with urban areas to rezone for higher residential density and mixed use, reduced parking requirements, and expedited planning and permitting processes in the downtown core, along transit corridors, and within future planned development areas that is compact, pedestrian friendly, and transit oriented where applicable.	Municipal Planning/Building Board of Supervisors	Phase 1 – Phase 2
T-3b	Leverage feasibility studies conducted by HCAOG to identify opportunities for mixed-use and infill development, map current and future planned transit networks, and establish a priority list of development that encourages regional growth to be in alignment with HCAOG and HTA transit goals. If not already included in previously conducted HCAOG studies, assess equity considerations with regards to location and distribution of developments, and potential transit access equity impacts.	Climate Committee HCAOG HTA	Phase 1
T-3c	Work with HCAOG, HTA, RCEA and CBO's to plan prospective mixed-use and infill projects so that they include design considerations with regards to alternative energy access/generation, EV charging infrastructure, and local public transit facilities. Promote development that increases walkability and is bikeable in neighborhoods.	Municipal Planning/Building RCEA HCAOG HTACBO's	Phase 2 - 3
T-3d	Direct the Regional Climate Committees to develop promotional materials and manage a central webpage on local jurisdiction's websites for planned projects detailing the benefits of mixed-use and/or infill developments.	Climate Committee Municipal Planning/Building	Phase 1-ongoing

Action ID	Action	Responsible Parties	Timeframe
T-3e	Dedicate staff time or create multi-jurisdictional staff position to be administered by the Regional Climate Committee to identify and pursue funding opportunities to support mixed-use and infill developments.	Municipal Planning/Building Climate Committee	Phase 1 - ongoing
T-3f	Study potential of establishing infill and transit-oriented development (TOD) overlay zones with minimum density requirements for as-of-right ministerial approval, streamlined permitting and reduced fees.	Municipal Planning/Building	Phase 1 - 2
T-3g	Pass ordinances prohibiting redesignation and rezoning of land for lower intensity land uses in transit-oriented development areas (areas within walking distance of basic services and transit).	Municipal Planning/Building	Phase 1 - 2
T-3h	Further streamline permitting and reduce fees for construction of ADUs and affordable housing in targeted areas.	Municipal Planning/Building	Phase 1
Measure T-4:	***Develop and implement regional mobility hubs and ZEV car-share programs to support mode shift from single occupancy vehicles***		
T-4a	Regional Climate Committee to initiate work with HCAOG by 2027 on the Sustainable Transportation Planning Grant Program efforts to assess regional transportation characteristics and work with regional agencies to identify multimodal land use opportunities throughout the County. As part of this program, conduct a background review of options for purchasing, operating, and maintaining shared mobility assets such as ZEVs, electric bikes, and electric scooters. The program 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 expanding mobility hub facilities beyond state highways access may enhance active transportation or public transit use. Also include in the feasibility study an assessment of alternative powering options in partnership with RCEA (e.g. microgrids) to support ZEV car-share infrastructure with the mobility hubs.	Climate Committee HCAOG	Phase 1
T-4b	In areas where Caltrans plans to implement mobility hubs along the state highway, local jurisdictions with support from the Regional Climate Committee will work with Caltrans to facilitate successful implementation and use the project to inform decisions on expanding mobility hub options throughout the region that will expand jurisdictional interconnectivity and provide public EV charging to the communities.	Municipal Planning/Building Municipal Public Works	Phase 1 – Phase 2

Action ID	Action	Responsible Parties	Timeframe
T-4c	Regional Climate Committee will develop guidance for jurisdictions to implement mobility hub policies 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 mobility hub facilities in underserved areas or reductions in usage fees for lower income users. The guidance is to be developed based on the regional feasibility study above.	Climate Committee HCAOG	Phase 1
T-4d	the Regional Climate Committee will coordinate with the City of Arcata in their efforts to bring in commercial autonomous EVs for car-share programs in association with regional mobility hubs.	Climate Committee Municipal Public Works	Phase 1 – Phase 2
T-4e	Dedicate staff time or leverage the Regional Climate Committee to work with work with HCAOG on the Sustainable Transportation Planning Grant Program and Caltrans in identifying and pursuing funding opportunities identified in the feasibility study with focus on linking mobility hub programs with the current Caltrans project to facilitate greater community interconnectivity and adoption of mobility services provided.	Climate Committee Municipal Public Works	Phase 2 - ongoing
T-4f	The Regional Climate Committee will implement a tracking mechanism to monitor the effectiveness of land use changes in achieving mode shift and reducing VMT.	Climate Committee	Phase 2 - ongoing
Measure T-5:	***Require commercial and industrial employers with 25 employees or more to develop a Transportation Demand Management Plan***		
T-5a	Across all jurisdictions, and particularly in high employment cities, require employers to develop a Transportation Demand Management (TDM) Plan through a new ordinance and/or as a requirement to obtain a business license. TDM plans should include money-based incentives for employees to bike, walk, carpool, take the bus to work, or remote work where suitable. Require large employers (more than 25 employees) to subsidize biking, walking, or bus travel. The TDM should also include a ride-sharing program and membership within a transportation management association. The ride-sharing program will consist of designated parking spaces for ridesharing vehicles, passenger loading, unloading, and waiting zones; and a website, message board, or app for coordinating ridesharing. The program will include a provision to allow employees to work remotely 2 days per week when feasible and should include consideration for increasing broadband internet access to provide adequate service for those working remote.	Municipal Planning/Building Board of Supervisors Climate Committee	Phase 2

Action ID	Action	Responsible Parties	Timeframe
T-5b	Leverage the Regional Climate Committee and partnership with HCAOG to conduct local transportation surveys within each jurisdiction 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 outreach campaigns that are transit focused.	Climate Committee HCAOG Municipal Community Development	Phase 1
T-5c	Have the Regional Climate Committee prepare marketing materials that each jurisdiction may modify and use to market and publicize public and active transportation improvements to local businesses as they are planned and implemented in a variety of methods (social media, newspaper, radio, etc.) and languages to help facilitate use and success of improvement.	Climate Committee Municipal Community Development	Phase 1 - ongoing
T-5e	Work with local businesses to understand employee engagement with alternative transportation methods and barriers to entry and provide workshops to local businesses to address questions or concerns in developing TDM plans.	Municipal Public Works Climate Committee HCAOG	Phase 2
T-5f	Through the Regional Climate Committee, employ a multi-jurisdictional representative to support HTA and local jurisdictions in pursuing grants such as the Sustainable Communities Competitive, Caltrans Sustainable Transportation Planning Grant Program, State Transportation Improvement Program, etc., to expand public and active transit services and infrastructure.	Climate Committee Municipal Planning/Building	Phase 2
Measure T-6: Decarbonize 15% of passenger vehicle miles traveled by 2030 and 100% by 2045 through increased adoption of low and zero-emission vehicles and development of a regional electric vehicle charging and hydrogen fueling network.			
T-6a	Through the Regional Climate Committee partner with local organizations and community groups throughout the County to distribute outreach and promotional materials to residents and local businesses on the financial, environmental, and health and safety benefits of ZEVs and alternative fueling options. Provide information on available funding opportunities.	Climate Committee Municipal Community Development	Phase 1 - ongoing
T-6b	Regional Climate Committee will identify jurisdictions or land-use zones, such as the Coastal Zone, that may benefit from a streamlined public and private EV infrastructure permitting process or Categorical Exemption and draft an ordinance in accordance with AB 1236. The Regional Climate Committee will develop the program as a template to be distributed to applicable jurisdictions for a coordinated approach and relieve individual jurisdiction workload on program development.	Climate Committee Municipal Planning/Building Board of Supervisors	Phase 2

Action ID	Action	Responsible Parties	Timeframe
T-6c	The Regional Climate Committee with work with local jurisdictions to amend the Municipal Code to promote EV chargers in new development, redevelopment, and existing parking spaces. This may include requiring: ▪ Multifamily – CalGreen Tier 2 provisions ▪ Non-Residential – CalGreen Tier 2 provisions ▪ Designate 10 percent of parking spaces in urbanized areas as EV charging spaces ▪ Require that employers with over 25 employees designate preferred parking spaces for zero emission vehicles or hybrids only ▪ Require that new private parking lots grant ZEVs access to preferred parking spaces. ▪ Require that existing parking in downtown areas grant ZEV access to preferred parking spaces. ▪ Require larger residential rental building owners (more than 15 tenants) and large commercial building owners (more than 10,000 square feet) to install working electric vehicle chargers in 10 percent of parking spaces for new and existing buildings at time of renovation if projects are valued at $1,000,000 or greater	Climate Committee Municipal Planning/Building Board of Supervisors	Phase 2
T-6d	Support ZEV car share companies in coming to the region. In jurisdictions with prevalent or planned development of multifamily housing, identify private sector partnerships and develop affordable, zero-emission vehicle car share programs with a priority to target vulnerable communities across all jurisdictions, promoting an accessible ZEV network.	Municipal Planning/Building Municipal Public Works	Phase 1 - ongoing
T-6e	For high employment areas, work with interested parties to develop new public access charging stations. Work with RCEA to develop partnerships with other charging companies (e.g. Go Station) as needed to accommodate charging station needs. Apply for Federal Charging and Fueling Infrastructure (CFI) grant to install electric vehicle chargers at community centers and in high employment areas.	Municipal Planning/Building RCEA	Phase 2
T-6f	Partner with RCEA to provide an EV Monthly Bill Discount Program with increased discount opportunities for low-income customers in each jurisdiction. Promote affordable EV charging rates at jurisdiction-owned EV charging stations and adjust rates as necessary to cover program costs. Explore methods for charging different rates for different user groups or other programs to offset charging costs at public stations for low-income residents.	Municipal Public Works RCEA	Phase 2

Action ID	Action	Responsible Parties	Timeframe
T-6g	Regional Climate Committee will work with interested parties and RCEA to expand home and public fueling/charging station ZEV infrastructure in alignment with RCEA RePower Plan goals and address barriers to ZEV adoption which are not related to electric grid capacity limitations as outlined in the "North Coast and Upstate FCEV Readiness Plan." Evaluate opportunities for curbside street level II chargers in urbanized residential areas where off-street parking is limited to provide equitable access to at home chargers.	Climate Committee RCEA	Phase 2 - 3
T-6h	Regional Climate Committee, in partnership HCAOG, to lead the development of a Hydrogen Vehicle Infrastructure Implementation Plan for public access hydrogen facilities by 2030 which includes the following: 1. Evaluate a list of prioritized locations for hydrogen fueling stations across the County 2. Consideration of procurement needs and potential sourcing from appropriate hydrogen facilities 3. Identifies grant funding opportunities	Climate Committee HCAOG	Phase 1 - 2
T-6i	Based on the results of the Hydrogen Vehicle Implementation Plan, applicable jurisdictions with opportunities identified as high priority hydrogen fueling station locations will evaluate and promote public access hydrogen fuel station development. Leverage the Regional Climate Committee and other regional partnerships to explore funding opportunities for hydrogen fueling infrastructure through the LCFS or PG&E EV Fast Charge Program as well as develop public-private partnerships to attract private developers to the region to build out ZEV infrastructure.	Municipal Public Works Climate Committee	Phase 2 - 3
T-6j	Identify and promote incentives and financing options for residential EV charger installations such as applying for Inflation Reduction Act (IRA) funding.	Climate Committee RCEA Municipal Planning/Building	Phase 1 - ongoing
Measure T-7: Increase commercial zero-emission vehicle use and adoption to 10% by 2030 and 100% by 2045 through a regional charging network and development of hydrogen hubs			

Action ID	Action	Responsible Parties	Timeframe
T-7a	Through the Regional Climate Committee work with RCEA and the Schatz Energy Research Center (SERC) to refine and implement the North Coast Medium-Duty/Heavy-Duty Zero Emission Vehicle Readiness Blueprint for Humboldt County. As part of the refinement: 1. Conduct in depth study of physical siting opportunities and prioritize locations and a schedule to follow 2. Identify opportunities for local jurisdiction-supported accelerated fleet ZEV adoption and establish a strategy to promote ZEV/EV adoption within business fleets 3. For high priority fleets, establish a strategy and protocol to collaborate with PG&E 4. For high priority fleets, conduct a grid planning study to identify necessary infrastructure upgrades to support a fully built-out fleet and coordinate with PG&E regarding needs	Climate Committee RCEA	Phase 1 – Phase 3
T-7b	Work with the Regional Climate Committee and RCEA to secure funding from state and utility programs (such as the California Air Resources Board's Clean Vehicle Rebate Project, the Truck and Bus Voucher Incentive Program, LCFS, and the PG&E EV Fast Charge Program) and federal sources to increase procurement of EV or ZEV cars, trucks, and other vehicles and installation of EV/ZEV charging/fueling infrastructure. Additionally, provide information to businesses on state and federal programs to help businesses pursue conversion of fleets to ZEVs.	Municipal Public Works RCEA	Phase 1 - ongoing
T-7c	Conduct an inventory of business vehicle fleets in each jurisdiction and identify and engage with employers and businesses subject to the Advanced Clean Fleets rule as well as those to target for accelerating ZEV/EV adoption. As part of the study, identify private trucking company or manufacturer partnership opportunities for piloting new ZEV technology in the region.	Climate Committee Municipal Facility Management	Phase 1 - 2

Action ID	Action	Responsible Parties	Timeframe
T-7d	Direct the Regional Climate Committee to partner with RCEA and SERC to work with local fleet operators, vehicle operators, and fleet maintenance staff to develop a comprehensive training program, including hosting workforce development trainings to discussing the benefits and technical requirements of ZEV fleets and supporting infrastructure. In addition to retraining the existing workforce, advertise and promote opportunities in the area to attract additional workforce support such as ZEV technicians and mechanics, and charging and fueling technicians.	Climate Committee RCEA SERC	Phase 2
T-7e	The Program Manager will research and obtain funding and work with HTA to identify locations and expand hydrogen fueling infrastructure.	Climate Committee HTA	Phase 2 - 3
Measure T-8: Electrify or otherwise decarbonize 12% of applicable small off-road engines (SOREs) off-road equipment by 2030 and 100% by 2045 and replace fossil diesel consumption with renewable diesel in 55% of applicable large diesel in alignment with EO N-79-20 by 2030.			
T-8a	Align with AB 1346 and develop and circulate educational materials regarding CARB's Small-Off Road Engines regulations requiring most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers, and other equipment to be zero emission starting in Model Year 2024. Phase 2 of the regulations will be implemented in Model Year 2028, when the emission standards for generators and large pressure washers will be zero. In addition, work with Humboldt Chamber of Commerce to disseminate information regarding the regulation to impacted businesses (e.g., lawn equipment dealers, commercial landscapers, construction companies) and promote transition of equipment sales and equipment use to electric alternatives.	Municipal Public Works Municipal Facility Management	Phase 1 - ongoing
T-8b	Regional Climate Committee to identify pathways to enforce CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation and the Commercial Harbor Craft Regulation requiring that diesel vehicles over 25 horsepower to procure and only use R99 or R100 renewable diesel. This should include establishing a means to track compliance and developing partnerships with fuel suppliers in the region to promote and support the increased procurement of renewable diesel in the region.	Climate Committee	Phase 1

Action ID	Action	Responsible Parties	Timeframe
T-8c	Work with the Regional Climate Committee to develop and implement a plan to replace all jurisdiction owned end-of-life off-road equipment with zero-emission equipment as feasible. Procure renewable diesel for applicable jurisdiction owned diesel equipment that doesn't have available replacement equipment. Plan should include evaluation of current jurisdiction-owned equipment, alternative low or zero-emission options, prioritize equipment to replace first (e.g., largest GHG emission reduction potential), and a timeline for replacements that align with goals and feasibility of replacement.	Municipal Public Works	Phase 2
T-8d	The Regional Climate Committee will develop and manage an Off-road Equipment Replacement Program and Outreach Campaign that provides information to contractors, residents, and fleet operators in the region regarding alternatives to fossil-fueled off-road equipment, local fuel suppliers with renewable diesel for sale, public health and safety benefits of alternative equipment technology, and funding opportunities available (i.e., Clean Off-Road Equipment Voucher Incentive Program), Zero-Emission Landscaping Equipment Incentive Programs).	Climate Committee	Phase 1 – 2
T-8e	Through the Regional Climate Committee, Partner with North Coast Unified Air Quality Management District to identify funding opportunities to encourage residents to replace gas-powered landscaping equipment and off-road engines with zero emission equipment. This could include a rebate and incentive program for upgrading off-road equipment and switching to renewable diesel, or the development of an off-road zero emission landscaping equipment rental share program for county residents and businesses.	Climate Committee	Phase 1
T-8f	Leverage the Regional Climate Committee to source State and Federal funding to decarbonize off-road equipment as a result of Executive Order N-79-20.	Climate Committee	Phase 2
Measure T-9: Establish Humboldt as a pilot program for the decarbonization of the transportation sector to help drive State and philanthropic investment throughout Humboldt.			
T-9a	The Regional Climate Committee will develop and promote a vision and strategy for the regional community foundation to serve as a first-mover/pilot in the State in the decarbonization of America's rural transportation systems.	Climate Committee HCOAG HTA	Phase 2
T-9b	As a first-mover in rural America, the Regional Climate Committee will pursue investment on behalf of the jurisdictions from philanthropy, the State, private businesses, etc. to fund the development of a Humboldt decarbonized rural transportation system.	Climate Committee HCOAG	Phase 2 - 3

Action ID	Action	Responsible Parties	Timeframe
T-9c	With the support of the Regional Climate Committee, jurisdictions will directly engage members of disadvantaged and vulnerable communities in the development of the vision and strategy that aims to benefit all members of rural communities.	Municipal Community Development Climate Committee	Phase 2
Measure T-10: Work with the State and renewable fuel industry to establish a renewable fuel network within Humboldt thereby funding new green industry and job growth to support the decarbonization of the transportation sector			
T-10a	The Regional Climate Committee will lead establishing a memorandum of understanding with RCEA, PG&E, CARB, CAL FIRE, the California Department of Agriculture, forest owners, and waste management companies to establish a plan to manage biomass and organic waste through the development of biofuel infrastructure in the region to position Humboldt as a first mover in active forest management to support a carbon-free future for California.	Municipal Public Works (county) RCEA	Phase 1
T-10b	The Regional Climate Committee will work jurisdiction to identify and help zone and entitle opportunity locations and specific areas throughout the region for streamlined development of renewable generation facilities where applicable. As part of effort, develop guidelines for evaluating renewable opportunities that meet sustainability criteria such as those set in the Natural Resources Defense Council's "Biofuel Sustainability Performance Guidelines" to limit environmental impacts related to renewable production.	Municipal Public Works	Phase 1
T-10c	The Regional Climate Committee will work with RCEA, PG&E, and State agencies to explore funding opportunities including grants and green bonds to help fund the development of renewable fuel infrastructure in the region and explore revenue options through the Low Carbon Fuel Standard.	Municipal Public Works (county) RCEA	Phase 1

Action ID	Action	Responsible Parties	Timeframe
T-10d	Establish Humboldt as a hydrogen hub by: 1. Promoting the pending The U.S. Department of Energy funded HTA hydrogen fueling station to attract additional hydrogen fueling station developers to the region 2. Partner with RCEA, SERC, and CalTrans, where applicable, to identify sites for hydrogen fueling stations that build off the North Coast and Upstate Regional Hydrogen Infrastructure Plan 3. Pursue partnerships with private developers to develop additional hydrogen fueling stations in the region 4. Pursue funding opportunities for hydrogen fueling infrastructure, such as through LCSF, AB 8 program, and the CEC Clean Transportation Program	Municipal Public Works (county) RCEA	Phase 2 - 3
T-10e	The Regional Climate Committee, in partnership with applicable incorporated cities will work with local utilities and State agencies to pursue grants earmarked for biofuel infrastructure from the Inflation Reduction Act.	Municipal Public Works	Phase 2
T-10f	The Regional Climate Committee will establish partnerships with organic waste haulers to establish a consistent feedstock of waste biomass from forests and biowaste from residential and agricultural sources and forest service businesses/property owners.	Climate Committee Fire Department	Phase 2 - 3
T-10g	Partner with the forestry services and waste haulers to host an Outreach Campaign informing the community on the economic and wildfire risk benefits of active forest management for bioenergy. Establish a working group/committee to involve local community members and businesses in the planning processes related to biomass and biowaste management locally.	Climate Committee Fire Department (county) Forestry Service (county)	Phase 1
T-10h	Leverage the Regional Climate Committee to create a region-wide workforce development programs to train the local workforce for biofuel jobs. Specifically target training towards members of disadvantaged communities and establish criteria in the planning process that prioritizes/requires the employment of local residents and businesses in the industry.	Climate Committee	Phase 2 - 3
Measure T-11: Lead by example and electrify or otherwise decarbonize 50% municipal fleets by 2030 in alignment with the State's Advanced Clean Fleet Rule.			

Action ID	Action	Responsible Parties	Timeframe
T-11a	Regional Climate Committee will develop a Zero-emission Fleet Conversion and Purchase Policy to be adopted by each jurisdiction that requires new, and replacement of, municipal fleet vehicle purchases to be EVs or ZEVs. The policy will also include a schedule for replacement of fleet vehicles to comply with the State's Advanced Clean Fleet rule requiring 50 percent of medium and heavy-duty vehicle purchases be zero-emissions beginning in 2024 and 100 percent beginning in 2027. Report annually to CARB on fleet status as required per the Advanced Clean Fleets Regulation.	Municipal Facility Management Climate Committee	Phase 1
T-11b	Leverage the Regional Climate Committee conduct a feasibility and cost assessment to determine the number of EV/ZEV chargers and funds needed to support the fleet transition to 50 percent EV/ZEV by 2030.	Municipal Facility Management Climate Committee	Phase 1
T-11c	The Regional Climate Committee will secure funding from programs such as the California Air Resources Board's Clean Vehicle Rebate Project and the Clean Truck and Bus Voucher Incentive Program to increase procurement of EV or ZEV cars, trucks, and other vehicles and installation of EV/ZEV charging/fueling infrastructure at municipal facilities. Evaluate credit generation opportunities within the LCFS program or other available programs for ZEV/EV fueling and charging stations for the municipal fleet to offset cost of infrastructure development needed to support transition.	Municipal Facility Management Climate Committee	Phase 1 - ongoing
T-11d	Install additional ZEV chargers/fueling stations in municipal parking lots for fleet, employees, and public use to meet projected demand in alignment with feasibility study.	Municipal Facility Management Municipal Public Works	Phase 1 - 2
T-11e	Leverage the Regional Climate Committee to develop a resolution in alignment with Measure T-8a, to replace jurisdiction-owned end-of-life small off-road equipment with electric equipment (e.g., lawn equipment and leaf blowers) at time of replacement and to procure renewable diesel for all applicable jurisdiction owned equipment. Each jurisdiction will need to adopt the resolution while the Regional Climate Committee will support implementation.	Municipal Facility Management	Phase 1
Measure SW-1: Establish a local waste separation facility and organics management to be able to reduce waste sent to landfills by 75% by 2030. Reduce GHG emissions by limiting truck trips required to ship waste out of the County and import compost from out of the County			

Action ID	Action	Responsible Parties	Timeframe
SW-1a	Regional Climate Committee to work with Humboldt Waste Management Authority (HWMA) and Recology to develop a SB 1383 waste management plan which assesses county-wide waste diversion needs, current capacity, and land-use opportunities for developing organic waste processing facilities within Humboldt County that will meet regional requirements. The assessment should also include an analysis of green bond funding opportunities, applicable green bond programs, and a strategic plan for pursuing funding through green bond programs.	Climate Committee HWMA Recology	Phase 1
SW-1b	The Regional Climate Committee will work with HWMA and an underwriter at a desired green bond program identified in the feasibility study to develop a green bond focused on providing funding for HWMA to construct a regional organics processing facility that will be used to meet SB 1383 diversion and procurement requirements.	Climate Committee HWMA	Phase 1 - 2
SW-1c	Through the Regional Climate Committee, partner with Recology and/or HWMA to pursue funding, such as the Organics Grant Program from CalRecycle or for projects through California Climate Investment, to reduce generated organic waste from multi-family homes and expand waste diversions programs within the County.	Climate Committee HWMA Recology	Phase 1

Action ID	Action	Responsible Parties	Timeframe
SW-1d	Meet the requirements of SB 1383 to reduce organics in the waste stream by 75 percent below 2014 levels by 2030 and work towards 90 percent solid waste diversion by 2040 in applicable jurisdictions by leveraging the Regional Climate Committee to provide implementation support. Include activities such as: 1. Implement enforcement and fee for incorrectly sorted materials with sensitivity to shared collection. Utilize funding to implement programs and efforts to increase communitywide organic waste diversion 2. Assure adequate bin signage across commercial and residential areas of acceptable landfill, recyclable, and compostable materials 3. Identify public areas for adding organics collection and recycling bins where needed 4. Work with Recology and HWMA to conduct free food scrap collection pail giveaways and promote curbside organics collection service offered in applicable communities 5. Evaluate opportunities to have community compost hubs throughout the County that is easily accessible for community members. Partner with regional community gardens to increase community wide access to local compost bins 6. Identify long-term and alternate solutions for the community's wastewater bio-solids to avoid long hauling distances and develop local, beneficial reuse.	Municipal Public Works HWMA	Phase 1 - ongoing

Action ID	Action	Responsible Parties	Timeframe
SW-1e	Leverage Regional Climate Committee to draft a templated edible food recovery ordinance for individual jurisdictions to modify and adopt as needed. Alternatively utilize the County's adopted ordinance, HCC 521-13 as a template or guide for drafting ordinances in individual jurisdictions that do not currently have such an ordinance. The ordinance will target edible food generators, food recovery services, or organizations that are required to comply with SB 1383. Ordinance requires all residential and commercial customers to subscribe to an organic waste collection program and/or report self-hauling or backhauling of organics. To support implementation of the ordinance, include the following activities: 1. Work with community food pantries, food suppliers, HWMA, and Recology to identify infrastructure needs to ensure edible food reuse infrastructure in Humboldt is sufficient to accept capacity needed to recover 20 percent of edible food disposed of within Humboldt 2. Regional Climate Committee to work with jurisdictions to establish an edible food recovery program where they are not currently present to minimize food waste. Expand food rescue programs by increasing cold storage capacity, include education and outreach efforts, and incorporate collection/distribution network among businesses, local institutions, and grocery stores. 3. Leverage CalRecycle funding opportunities to support projects that prevent food waste, increase cold storage, or rescue edible food 4. Partner with existing food pantries that are locally appropriate for each jurisdiction to identify and advertise locations for surplus food to be taken in the community	Climate Committee Municipal Public Works Board of Supervisors	Phase 2
SW-1f	The Regional Climate Committee will work with HWMA, Recology and individual jurisdictions to implement structural changes listed above and increase service to jurisdictions without organics collection. This is applicable to both jurisdictions subject to SB 1383 and SB 1383 exempt jurisdictions to prepare for future needs to comply with SB 1383.	Municipal Public Works HWMA Recology	Phase 2

Action ID	Action	Responsible Parties	Timeframe
SW-1g	Regional Climate Committee will coordinate between HWMA and regional wastewater treatment facilities to evaluate the opportunities to process/ co-digest food waste at the wastewater treatment plants. Study should include evaluating existing infrastructure and ability to process food waste, an evaluation of necessary infrastructure upgrades needed to process food waste that would comply with SB 1383 standards for recovered organic products, and a return-on-investment evaluation. Study should also include recommendations of viable opportunities and identification of funding opportunities to support implementation and facility upgrades as necessary.	Municipal Public Works HWMA	Phase 2 - 3
SW-1h	The Regional Climate Committee in partnership with Recology and HWMA, will develop and conduct a conduct a Bring Your Own (BYO) education and outreach training for each jurisdiction community on reusables and implementing more sustainable packaging into daily use. The Regional Climate Committee will develop and provide information resources on HWMA and jurisdiction's websites. Partner with libraries and other existing facilities to market campaigns about waste reductions, reuse and repair.	Municipal Public Works HWMA Recology	Phase 1
SW-1i	Leverage the Regional Climate Committee to provide technical and outreach support to jurisdictions with organics and/or recycling services, by establishing relationships with multi-family property owners/managers to develop signage for their properties and to go door-to-door at each multi-family unit yearly to provide supplies and promote proper sorting.	Municipal Public Works HWMA	Phase 1 - 3
SW-1j	HWMA to add extra bulky-item pick up service in all jurisdictions to low- and medium-income residents at a subsided cost to help minimize illegal dumping.	Municipal Public Works HWMA	Phase 2
SW-1k	The Regional Climate Committee will facilitate conducting waste characterization studies every 3 years to inform programs and policies. Leverage study to understand the waste stream and create a plan to increase diversion and reduce contamination. Work with contracted waste haulers and HWMA to develop and implement a comprehensive monitoring and quality control program with a focus on consumer behavior change. This should include tracking of weight or volume of waste produced; consider including information on billing to inform customer of their waste production and including incentives for reduction. Explore reducing frequency of service for residential and commercial waste to least often possible pick up to reduce truck miles/trips.	Municipal Public Works HWMA	Phase 1 - 3

Action ID	Action	Responsible Parties	Timeframe
SW-1l	Through the Regional Climate Committee create a multi-lingual training/outreach program that can be used in all jurisdictions that is free and accessible to all residents and employees to learn about circular economy practices and diversion strategies and effects of overconsumption. Conduct targeted, multi-lingual, culturally appropriate, and geographically diverse circular economy educational and technical assistance campaigns based on outcomes of waste characterization studies and comprehensive monitoring and quality control program. Topics could include reuse, prolonging the life of common materials and items, and sustainable purchasing. Focus outreach campaign on food waste not going to landfill.	Climate Committee	Phase 1
SW-1m	Utilize the Regional Climate Committee to partner with schools, retirement communities, and other large institutions throughout the County to create waste diversion and prevention program/procedure/plan.	Climate Committee HWMA	Phase 2 - 3
SW-1n	The Program Manager will work with regional partners to develop and implement packaging bans to reduce the use of single-use plastics and excess waste proliferation in the waste stream.	Climate Committee	Phase 2 - 3
Measure WW-1: Expand regional opportunities for implementation of wastewater decarbonization technologies such as anaerobic digesters to reduce GHG and produce renewable fuel sources			
WW-1a	Regional Climate Committee to conduct a feasibility study(s) in jurisdictions with wastewater processing facilities or community primary reliance on septic systems identifying improved wastewater technologies which could be used to mitigate wastewater processing emissions and generate renewable fuel such as RNG or offset on-site process energy use via electricity generated with an anaerobic digester, particularly in relation to septic system improvements. The study should include an in-depth analysis of the current wastewater treatment methods utilized throughout the region, identification of upgrade opportunities and potential co-benefits to the community, and technological restrictions based on regional water quality and discharge requirements. The study should also specifically consider expanding wastewater treatment capabilities to process food waste that would otherwise go to landfill.	Municipal Public Works Climate Committee	Phase 2
WW-1b	The Regional Climate Committee will partner with regional wastewater service providers to understand current methods, areas for improvement, and whether there is interest in upgrading their wastewater treatment processes.	Municipal Public Works Climate Committee	Phase 2

Action ID	Action	Responsible Parties	Timeframe
WW-1c	The Regional Climate Committee, with input from the wastewater treatment providers, will research and pursue grants to wastewater facility upgrades or home septic system improvements (where applicable), such as applying to the California State Water Board for Clean Water State Revolving Fund grants, or the Community Development Block Grant Program.	Municipal Public Works Climate Committee	Phase 3
Measure WW-2 Reduce per capita potable water consumption by 15% by 2030.			
WW-2a	The Regional Climate Committee will work with regional water providers to update their 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 UWMPs as needed to achieve State regulations, which may include: 1. Develop or amend Water Shortage Contingency Plans in the region to develop water waste restrictions for households, businesses, industries, and public infrastructure 2. Work with 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 3. Revisit and update the Model Water Efficient Landscape Ordinance as needed. Engage, through regional partnerships, with builders and developers to provide information on the requirements for development projects 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 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 partnerships with local organizations to expand water conservation outreach 6. Revise water and wastewater rates as necessary to ensure cost of service is covered	Municipal Public Works Climate Committee	Phase 1 - 2

Action ID	Action	Responsible Parties	Timeframe
WW-2b	Through the Regional Climate Committee work with the Humboldt County Resource Conservation District (HCRCD) to develop water conservation promotional materials, programs and outreach efforts are in multiple languages and accessible for low-income or disadvantaged and vulnerable communities. Continue to offer and expand water conservation programs to the community including educational programs like water education program for schools and water wise landscape classes as well as incentives like free water conserving deceives, and rebates for rain water collection systems and turf replacement.	Climate Committee	Phase 1
WW-2c	The Regional Climate Committee will work with the local water and wastewater providers in the region to develop a Recycled Water Master Plan to assess the feasibility of expanding the recycled water system in the region and establish a roadmap for a recycled water expansion program. The plan will identify 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.	Municipal Public Works Climate Committee	Phase 2 - 3
Measure CS-1: Research and implement feasible carbon sequestration technology opportunities to support growth and expansion of green jobs industry within the region			
CS-1a	Conduct a carbon sequestration feasibility study facilitated by the Regional Climate Committee to identify emergent technology for carbon sequestration and regional viability of implementation, including consideration of identified carbon sequestration technology facilities (e.g. ocean carbon capture, agriculture methane capture, forest biomass to biochar soil amendment, biochar wastewater filtration, forest biomass as green hydrogen fuel, etc).	Climate Committee	Phase 2
CS-1b	As part of Regional Climate Committee responsibilities established in Measure C-1, work with RCEA, HWMA, wastewater facilities, local tribes, businesses, and other applicable interested parties as appropriate to address potential carbon sequestration technologies available to the region, understand limitations and barriers, and develop solution pathways to implementation.	Climate Committee RCEA HWMA	Phase 2
CS-1c	Based on feasibility study, leverage the Regional Climate Committee to explore partnerships with technology providers and regional research laboratories (e.g. Cal Poly) for viable carbon sequestration technologies to deploy carbon sequestration pilot projects in the region.	Climate Committee	Phase 3

Action ID	Action	Responsible Parties	Timeframe
CS-1d	The Regional Climate Committee shall dedicate staff time or a representative for researching emergent carbon sequestration technologies and potential grant funding sources. This will include researching the potential for wetland conservation and exploring regional mitigation banking.	Climate Committee	Phase 2
Measure CS-2: Offset fossil-based emissions and increase carbon sequestration in the community by achieving SB 1383 procurement requirements (0.08 tons recovered organic waste per person) by 2030.			
CS-2a	Leverage the Regional Climate Committee to support jurisdictions in enforcing compliance with SB 1383 and aim to exceed the baseline requirement by establishing a minimum level of compost application per year on applicable/appropriate land throughout the region. Maintain procurement policies to comply with SB 1383 requirements for jurisdictions to purchase recovered organic waste products.	Municipal Public Works	Phase 1 - ongoing
CS-2b	Regional Climate Committee to facilitate the establishment of a compost broker program primarily in rural jurisdictions central to agricultural industries which provides agricultural communities with incentives such as subsidies or community shared compost application equipment to aid in the procurement and distribution of high-quality compost.	Municipal Public Works Climate Committee	Phase 1
CS-2c	The Regional Climate Committee will work with Recology to provide residents, businesses, and developers with promotional material on where compost can be taken and how it can be used (i.e., landscaping).	Climate Committee Recology	Phase 1
CS-2d	The Regional Climate Committee will work with Recology, HWMA, and community-based organizations to provide free compost procurement services to low-income households and small businesses in all jurisdictions.	Municipal Public Works	Phase 2
CS-2e	The Regional Climate Committee will facilitate a soil assessment study to identify applicable locations and quantity of compost that can be applied within each jurisdiction to help meet the procurement requirements of SB 1383 and provide household incentives for small-scale implementation. As part of study, evaluate other carbon sequestration opportunities associated with soil amendments such as biochar.	Climate Committee	Phase 1- 2
CS-2f	Leverage the Regional Climate Committee to identify viable alternative opportunities for achieving SB 1383 compliance based on activities which are already occurring within the region (e.g. diversion of wastewater biosolids from landfill for agricultural application), or activities which provide co-benefits to the community (e.g. sourcing RNG to replace natural gas consumption, diversion of lumber or yard waste from landfill to be used to produce green hydrogen).	Climate Committee	Phase 2

Action ID	Action	Responsible Parties	Timeframe
CS-2g	The Regional Climate Committee with dedicate staff time for researching alternative pathways for achieving SB 1383 compliance and obtaining grant funding for procurement and distribution incentive programs across all jurisdictions.	Climate Committee	Phase 2
CS-2h	Through the Regional Climate Committee collaborate with local schools, Public Works, and Parks and Recreation to identify opportunities to apply compost to landscaping, potentially in addition to open space land conservation efforts.	Municipal Public Works Climate Committee	Phase 2
CS-2i	In jurisdictions currently subject to SB 1383 requirements, utilize the Regional Climate Committee to work with regional organic waste haulers (Recology) and local small-scale commercial composters (e.g. The Local Worm Guy) to identify opportunities for a regional compost procurement program to help meet and exceed the organics procurement provisions of SB 1383 as well as streamline hauler routes through regional collaboration.	Municipal Public Works Recology	Phase 1 - 2
Measure CS-3: Develop a County-wide Natural and Working Lands GHG Inventory baseline by 2027 to better understand the existing and future GHG sequestration and help obtain resources to protect and increase natural carbon sequestration occurring in the region as well as promote biodiverse forests and wetlands resistant to wildfire			
CS-3a	The County will partner with the North Coast Resource Partnership and other interested parties to develop an updated, Humboldt specific natural and working lands GHG Inventory which builds off of the 2017 northern California regional study conducted by the North Coast Resource Partnership. Development of the GHG Inventory should include consideration of requirements specified by prospective grant programs the region would like to pursue.	Municipal Public Works (county)	Phase 1
CS-3b	The Regional Climate Committee will apply for at least one grant (e.g. Sustainable Agricultural Lands Conservation Program) 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.	Climate Committee	Phase 1 - 3
CS-3c	The Regional Climate Committee will work with interested parties, local tribes, and agricultural communities to identify opportunities for expanding wetland conservation areas in a manner that equitably addresses tribal and agricultural interests.	Climate Committee	Phase 2

Action ID	Action	Responsible Parties	Timeframe
CS-3d	The Regional Climate Committee and County will work with CalFire and Humboldt County Resource Conservation District to increase necessary equipment and infrastructure resources to better maintain public and private forested area with focus on understory clearing to prevent wildfire.	Climate Committee Municipal Public Works (county) Fire Department	Phase 2
CS-3e	The Regional Climate Committee and the County will work with Humboldt County Resource Conservation District and interested parties to identify challenges and barriers for private sector landowners to implement forest best management practices as identified by CalFire and the Humboldt County Resource Conservation District.	Climate Committee Municipal Public Works (county)	Phase 1 - 2
CS-3f	The Regional Climate Committee will support rural communities with the development of a community-based volunteer program supporting restoration project activity to create a maintained restoration process. This may involve partnering with local community organizations to communicate sequestration opportunities and facilitate volunteer maintenance projects.	Climate Committee	Phase 2 - 3
CS-3g	Through County efforts, facilitate annual reporting as part of the restoration plan mapping the existing restoration projects and open space lands to gauge progress in restoration activities over time as well as identify any gaps in maintenance activities related to ongoing projects. Incorporate GHG calculations into this monitoring plan to report on the region's contribution as a GHG source or sink.	Municipal Public Works (county)	Phase 2 - 3
CS-3h	Engage with third-party to audit the Natural and Working Lands inventory and monitoring reports. Update County-wide inventory to include GHG emissions and sinks from Natural and Working lands in the region. Leverage this data to pursue State funding to protect the regions resource as a GHG sink for the State.	Municipal Public Works (county)	Phase 2
Measure R-1: Prepare a baseline analysis of the volume of HFCs released into the atmosphere and evaluate whether these releases are being adequately addressed by CARB or whether the County should supplement the work of CARB			

Action ID	Action	Responsible Parties	Timeframe
R-1a	Regional Climate Committee to initiate a study of the information available relative to emissions of refrigerants with a high global warming potential in Humboldt County. This study is intended to develop a baseline of emissions for harmful refrigerants. Once this baseline is established the study will coordinate with CARB to determine how the emissions are being tracked and being reduced. The study will then identify areas where emissions of refrigerants are not being addressed and identify potential methods in which the emission of refrigerants may be minimized. Prior to the report being provided to the Regional Climate Committee it shall be provided to CARB for review and comment and shall be provided to stakeholders who use refrigerants for their review and comment. The comments from CARP and stakeholders shall be reflected in the final report provided to the Regional Climate Committee.	Climate Committee	Phase 2
R-1b	The Regional Climate Committee will partner with CARB to understand the existing regulatory context and coordinate with refrigerant users to understand the processes and technology availability and cost.	Climate Committee	Phase 2
R-1c	The Regional Climate Committee, will pursue grants to cover the cost of this work.	Climate Committee	Phase 1 - 2

Appendix A

Climate Regulatory Context

Appendix B

GHG Inventory, Forecast, and Targets Report

Appendix C

Greenhouse Gas Emissions Measure Reduction Quantification and Substantial Evidence Report