Climate Action and Adaptation Plan (CAAP)
County of Santa Cruz
December 2022

The County of Santa Cruz

Climate Action and Adaptation Plan (CAAP)

2023-2027

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Contents

EXECUTIVE SUMMARY 6
Climate Change is Here Now 6
Equity Forward 6
Greenhouse Gas Emissions Targets 7
State Greenhouse Gas Reduction Targets 8
2022 CAAP Strategies and Implementation Milestones 9
1. INTRODUCTION 10
Santa Cruz County 10
2. FRAMEWORK FOR THE 2022 CAAP 13
Mitigation and Adaptation 14
Equity 14
County Collaborative Engagement 15
CAAP Climate Policy Internship Program 16
Integrated Efforts 16
Regional Approach 16
3. GREENHOUSE GAS EMISSIONS IN SANTA CRUZ COUNTY 16
Greenhouse Gas Emissions (GHG) 17
GHG Changes Since the 2013 Climate Action Strategy 18
GHG Reduction Targets 19
GHG Emission Forecasting 22
4. CLIMATE CHANGE IMPACTS 23
Climate Hazards and Impacts 23
5. GOALS, STRATEGIES AND OBJECTIVES 26
Goals 27
Strategies 29
Prioritized Mitigation Strategies 32
Prioritized Adaptation Strategies 33
Objectives 34
CONCLUSION 35
2022 CAAP STRATEGIES AND OBJECTIVES 36
Energy 36
Transportation 39
Water 43

Waste....44
Natural/Working Lands....46
Wildfire....49
Government Operations....51

EXECUTIVE SUMMARY

Climate Change is Here Now

In the decade since the first Climate Action Strategy was approved by the Santa Cruz County Board of Supervisors in 2013, the County of Santa Cruz (County) has experienced the direct impacts of climate change. Locally we have experienced intense winter storm events, extreme heat, poor air quality and wildfires, with their impacts experienced throughout the county. Most significantly, the 2017 Winter Storms caused over $100 million in damage to local roads, the 2020 CZU Lightning Complex Fire burned over 80,000 acres and destroyed 920 homes, and the 2021 Winter Storm event, which resulted in millions more in road damages. Existing conditions combined with predictive modeling indicate that the impacts of climate change will continue to be significant and will increase over time, impacting all aspects of our economy, community and quality of life. These increased impacts will be felt from our natural lands to the built environment and will be felt by all living things. The seasons and environment that many of us knew as children and young adults have changed and it is the work of the current generation to do our best to protect the environment for future generations. The 2022 Climate Action and Adaptation Plan (2022 CAAP) includes the most current data on climate impacts in unincorporated Santa Cruz County that inform a strategic framework with actionable to steps towards reducing the causes of global warming, adapting our communities to climate hazards and ensuring the safety and well-being of those most vulnerable to climate change.

Equity Forward

Climate hazards disproportionately impact at-risk populations, such as lower income residents, renters, the unhoused, children, the elderly, those that are medically vulnerable, and other marginalized populations. This means that it is those most vulnerable to climate change that will have a more difficult time evacuating at the time of an event, may physically experience the event - and the aftermath - more severely and will also experience higher barriers to stabilizing financially. The 2022 Climate Action and Adaptation Plan (2022 CAAP) addresses these inequities by identifying at-risk groups and proposing strategies to reduce impacts or build adaptive capacity to climate change. Strategies have been evaluated for potential negative outcomes for vulnerable populations and under-invested communities using the CAAP Equity Guardrails. The Equity Guardrails include specific criteria designed to ensure that the needs and well-being of vulnerable, at-risk populations and under-invested communities are incorporated into the strategies and implementation.

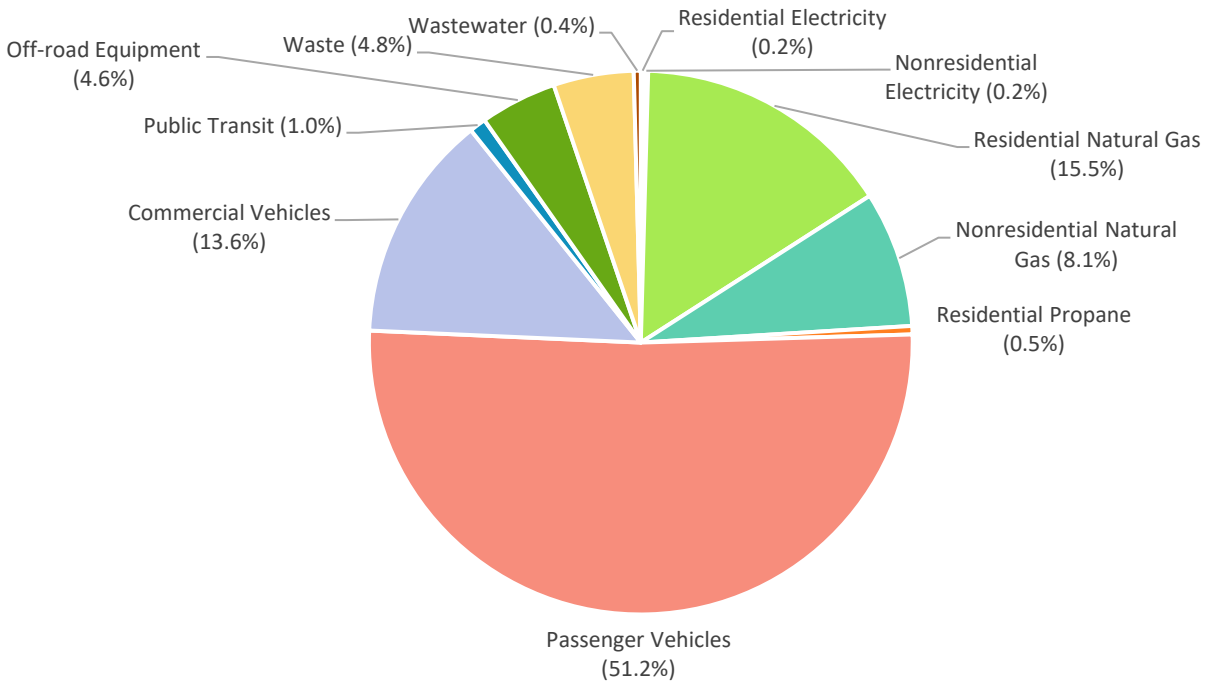
Greenhouse Gas Emissions Targets

The unincorporated Santa Cruz County greenhouse gas (GHG) emissions inventory serves to provide a comprehensive understanding of our emissions and serves to:

- Define the highest sources of GHG emissions
- Understanding of the scale of GHG emissions across specific sectors
- Identify where the greatest opportunities for emissions reduction exist
- Create a GHG emissions baseline from which to establish reduction targets and evaluate future progress.

The GHG inventory completed for the County includes GHG emissions from activities within the County's jurisdictional boundaries during 2019. The County's 2019 GHG inventory was originally completed by the Association of Monterey Bay Area Governments (AMBAG) as part of a regional GHG emissions inventory in September 2021. The 2019 Inventory was further updated by AMBAG in June 2022 during the completion of the County's 2020 GHG inventory to incorporate updated modeling of estimating Transportation-related emissions. The Santa Cruz Mass Emissions for 2019 is 691,262 MT of CO2e. Figure 1. GHG Emissions by Category shows that nearly 70% of all emissions in unincorporated Santa Cruz County are from the transportation sector, and another nearly 25% from our built environment. These two areas will be critical to address through mitigation actions to meet our reduction targets.

Figure 1. GHG Emissions by Category

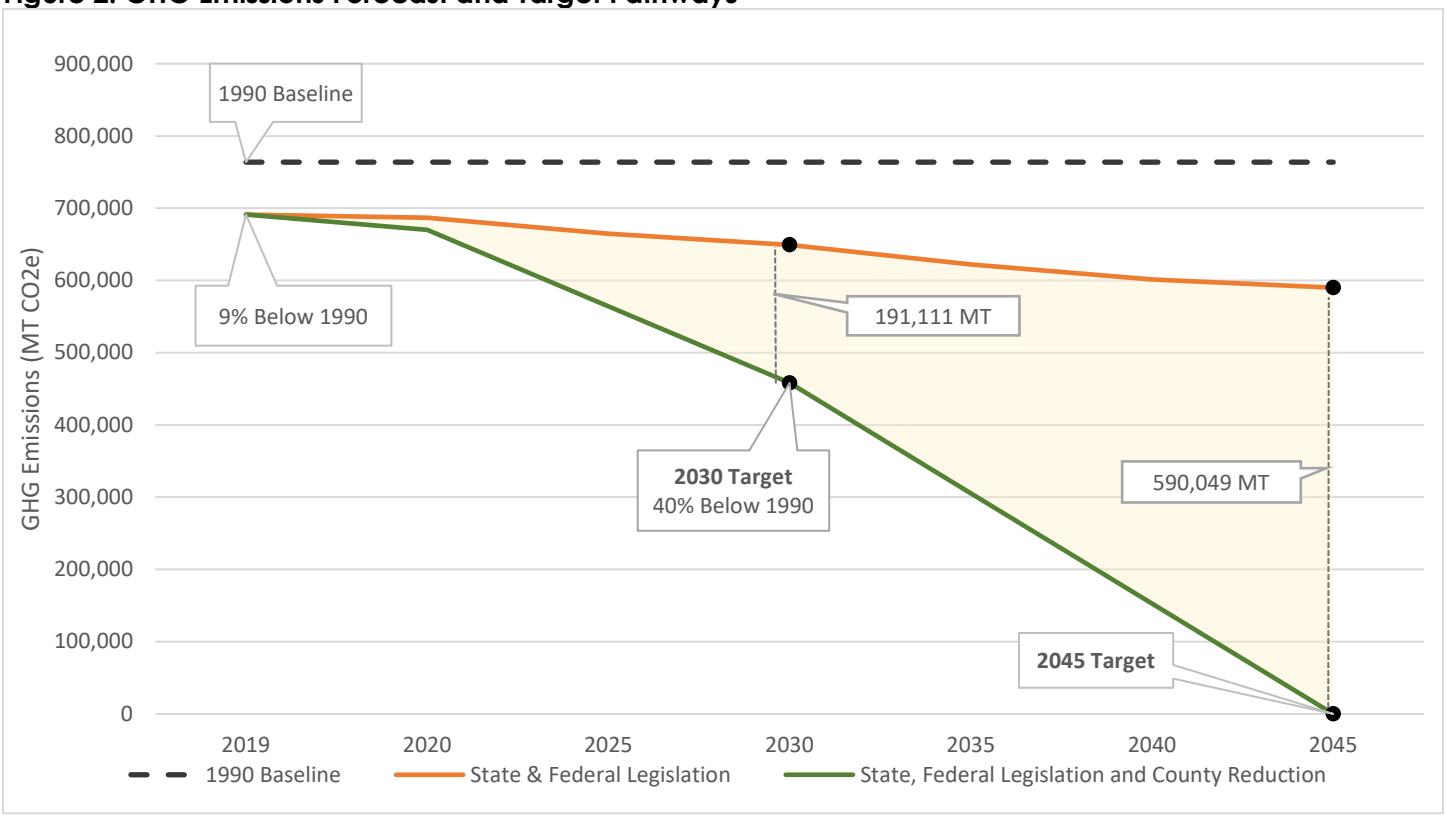


State Greenhouse Gas Reduction Targets

For unincorporated Santa Cruz County our GHG emissions reduction strategies and objectives are informed by the State of California (State) laws defining GHG emissions reduction targets by 2030 and 2045. The purpose of our strategies and objectives is to develop the required GHG emissions reduction trajectory toward achieving the State's 40% GHG reduction from 1990 levels goal by 2030 (Senate Bill 32, SB 32) and prepare for the aggressive decarbonization needed to reach the 2045 target (Assembly Bill 1279, AB 1279). In 2016, the State passed SB 32, which requires California to reduce GHG emissions by 40% below 1990 levels by 2030. In September 2022, AB 1279 was signed, which establishes a statewide goal of carbon neutrality by 2045.

Unincorporated Santa Cruz County must reduce mass emissions from 1990 levels by 191,111 Metric Tons of CO2 Equivalent (MT of CO2e) by 2030. By 2045, we must have reduced our emissions by an additional 257,651 to meet the target of 448,762 MT of CO2e (using the 1990 emissions as baseline) set by SB 32 and AB 1279 respectively. Reductions from 2019 levels will be partially achieved by State and federal actions, reducing our total emissions reduction values, which can be seen in Figure 2. GHG Emissions Forecast and Target Pathways.

Figure 2. GHG Emissions Forecast and Target Pathways

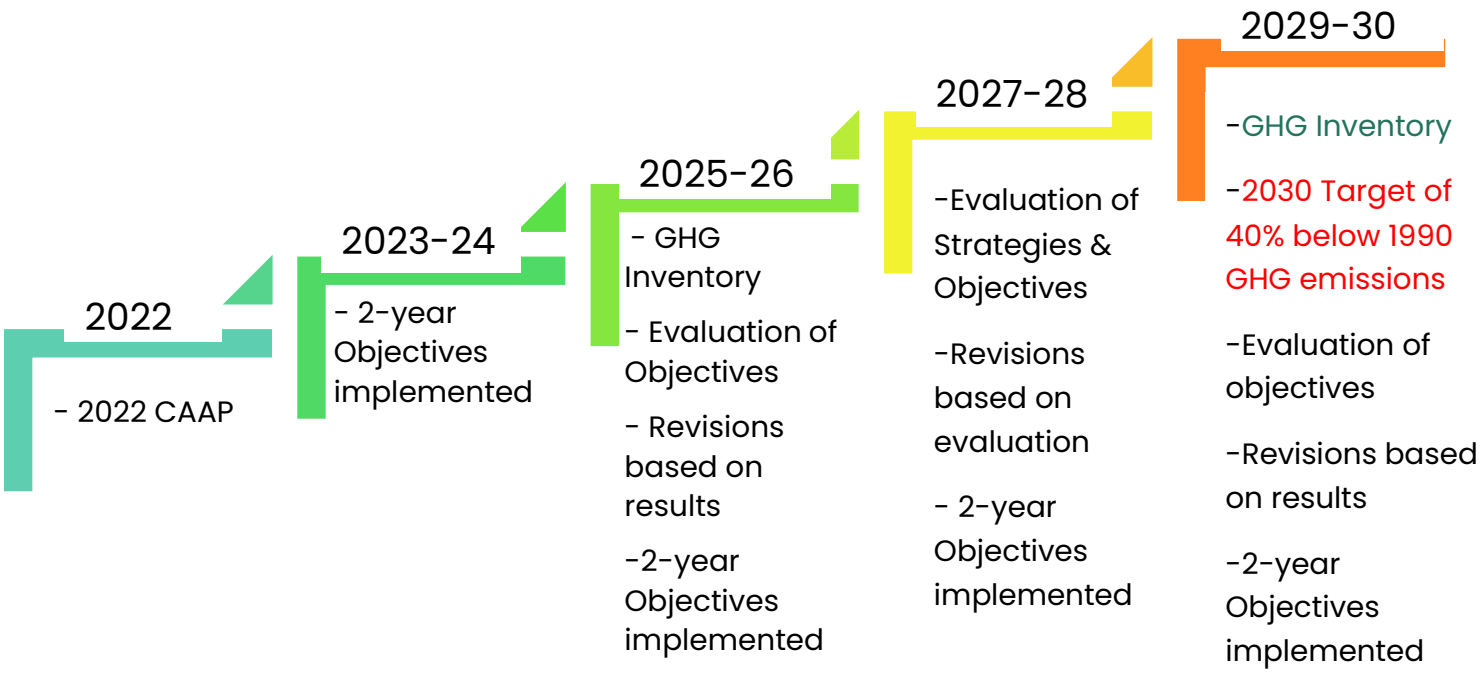


2022 CAAP Strategies and Implementation Milestones

Building a vibrant and resilient Santa Cruz County in the face of Climate Change will require a collective effort by the County, private sector, non-profit organizations, and the community. To meet reduction targets, it will take specific operational strategies by the County, supporting a multi-modal transportation network as well as through enacting policies, ordinances, and land use tools (development patterns) to support emissions-reducing outcomes. To build a resilient community, the County must also build adaptive capacity in our community by addressing the climate hazard impacts that will be experienced by communities, improving our urban forest canopy and wildland forest health, and by employing building strategies that incorporate resilient design.[1]

The 2022 CAAP provides the strategic framework for County of Santa Cruz climate goals. Implementation of that framework will occur during the next two years, 2023-2024, and evaluation of the objectives will occur in 2025 and another two-year implementation cycle will begin. Figure 3. CAAP Implementation Milestones below shows the two-year cycle for the Objectives and the four-year cycle for evaluating the Strategies.

Figure 3. CAAP Implementation Milestones



[1] Resilient design is the intentional design of buildings, landscapes, communities, and regions in order to respond to natural and humanmade disasters and disturbances—as well as long-term changes resulting from climate change—including sea level rise, increased frequency of heat waves, and regional drought.

1. INTRODUCTION

The scale and pace of climate change has increased in the decade since the first Climate Action Strategy was approved by the Santa Cruz County Board of Supervisors in 2013. State agencies and local governments now have a better understanding of the impacts of climate change on the built and natural environment. The impact and frequency of climate change impacts has increased, locally Santa Cruz County has experienced climate change in the form of intense winter storm events and wildfires, and their impacts have been experienced throughout the county. Most notably, there was the 2017 Winter Storms which caused over $100 million in damage to local roads, the 2020 CZU Lightning Complex Fire, which burned over 80,000 acres and destroyed 920 homes, and more recently, the 2021 Winter Storm event, which resulted in millions more in road damages. Existing conditions combined with predictive modeling indicate that the impacts of climate change will continue to be significant and will increase over time impacting all aspects of our local climate. These increased impacts will be felt from natural lands to the built environment and felt by all living things.

Due to recent extreme weather and wildfire events, there is a tangible glimpse of climate change and how it will continue to impact Santa Cruz County. Climate change is here now, it is real, and it must be addressed through mitigation and adaptation actions. These recent events, along with the COVID-19 global pandemic, reveal another clear truth. The impacts of climate change will disproportionately be experienced by lower income residents, the elderly, and other marginalized or medically vulnerable populations. The 2022 Climate Action and Adaptation Plan (2022 CAAP) addresses this inequity by identifying at-risk groups and proposing strategies to reduce or build adaptive capacity to the impacts of climate change for these groups.

The 2022 CAAP was designed under the premise that the effects of human-caused global warming are occurring now, are irreversible on the time scale of current generations and will worsen in the decades to come without focused action. This perspective underlies the development and design of this 2022 CAAP as a response to a climate crisis.

Santa Cruz County

Santa Cruz County is located in the traditional tribal territory of the Awaswas peoples, one of eight divisions of the Ohlone American Indians of Northern California. The Uypi tribe of the Awaswas lived in this area and were stewards of the land (stretching from Davenport to Aptos) for more than 10,000 years until the time of Spanish colonization in 1791. Few remnants of their culture remain, including three local place names: Aptos, Soquel and Zayante; and the name of a native shellfish – abalone.

Present day Santa Cruz County, the second smallest county in the State, encompasses nearly 607 square miles of rugged and developed coastline, steep redwood-draped mountains, and fertile

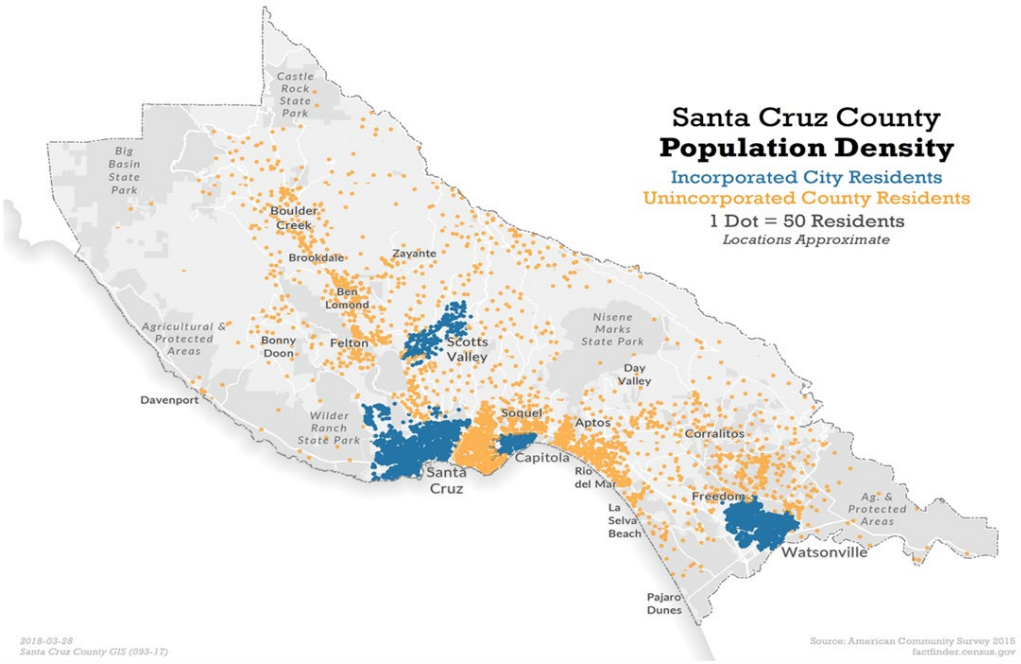
farmland in the northwestern Coast Range of California (U.S. Census Bureau 2012), with a total population of 270,861 full-time residents as of 2020 (U.S. Census Bureau 2020).

Image 1. Neighboring Counties (Santa Cruz County) shows that the neighboring counties include San Mateo County to the northwest, Santa Clara County to the north and east, and Monterey and San Benito counties to the south. Steep mountainous elevations reach nearly 3,800 feet and descend into river valleys and beaches at sea level.

Image 1. Neighboring Counties (Santa Cruz County)

Santa Cruz County has four incorporated cities, the largest being the City of Santa Cruz with a population of 62,956, followed by Watsonville (52,739), Scotts Valley (12,272), and Capitola (9,966) (see Image 2. Santa Cruz County Population Density by Unincorporated and Incorporated Areas). While a little more than half of all county residents live within the boundaries of these incorporated cities (137,933), the other half live in the unincorporated county (132,927). The urban unincorporated population is roughly the population size of Watsonville, with over 50,000 residents, most of the remaining unincorporated residents live in the wildland urban interface in rural towns, villages, and neighborhood scale communities.

Image 2. Santa Cruz County Population Density by Unincorporated and Incorporated Areas

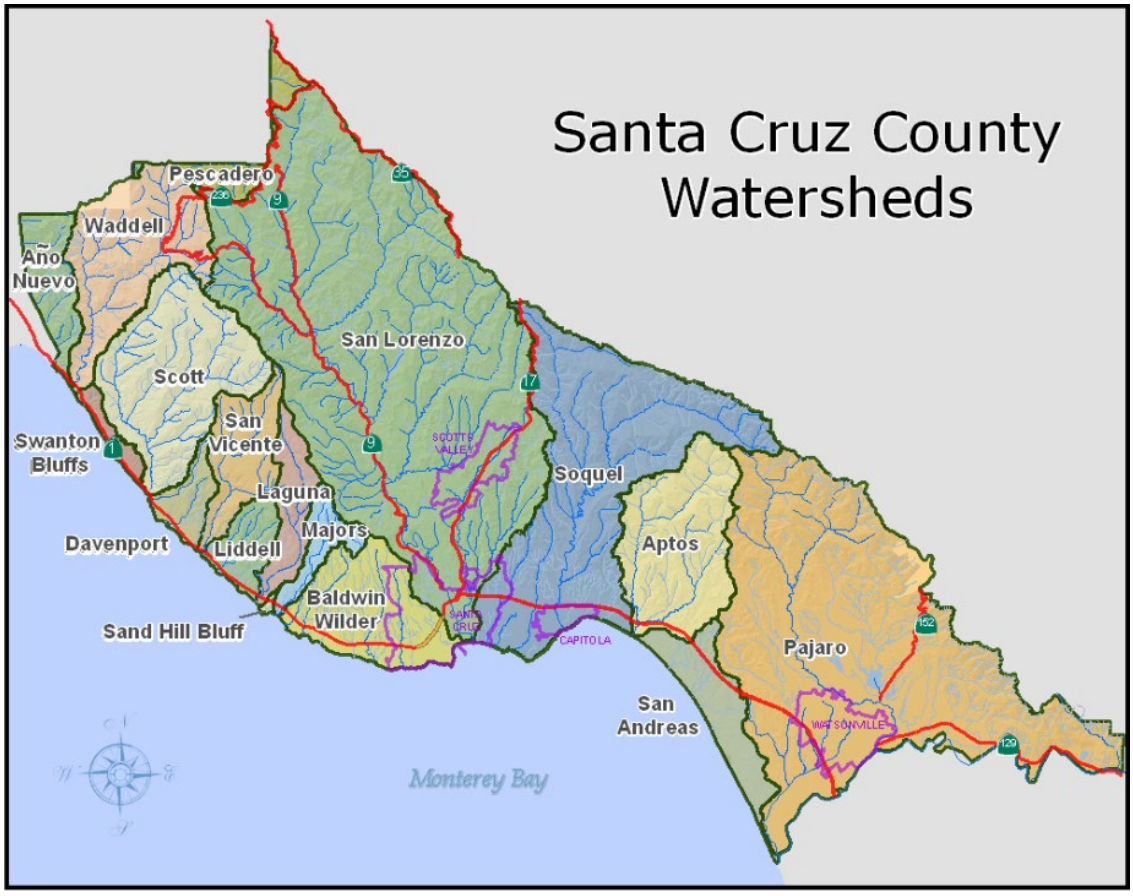


Santa Cruz County has four major watersheds: the Pajaro River watershed, the San Lorenzo River watershed, the Soquel Creek watershed, and the Aptos Creek watershed. There are a number of smaller north coast watersheds that drain into the ocean along Highway 1. (See Image 3. Santa Cruz County Watersheds.) The San Lorenzo Valley watershed provides potable water, in the form of surface water and groundwater, to a large percentage of the county's population. Drinking water supply in the remainder of the county is a mixture of groundwater and more limited surface water sources. No water is imported into the county, thus making the county self-reliant on sources within its boundaries.

Economic drivers include agricultural food production (primarily berries), healthcare, the University of California at Santa Cruz, hospitality and tourism, water-related recreation, local

government, timber, and small private businesses. The median household income in 2021 was $89,986. (U.S. Census Bureau , 2021)

Image 3. Santa Cruz County Watersheds



2. FRAMEWORK FOR THE 2022 CAAP

The purpose of the 2022 CAAP is to cast targets for future goals to address climate change and provide the actionable strategies and measurable objectives and steps towards achieving those targets. This section will describe how the 2022 CAAP has been developed and the four main components that make it more comprehensive than the previous 2013 Climate Action Strategy (2013 CAS). The 2022 CAAP includes both mitigation and adaptation strategies, whereas the 2013 CAS focused primarily on GHG reduction strategies. Equity is a primary focus of the 2022 CAAP strategies and objectives, and it was interwoven into the development of the 2022 CAAP through a collaborative engagement process. Finally, this 2022 CAAP was developed in partnership with the City of Watsonville and the City of Santa Cruz and incorporates the same strategies where applicable. Regional collaboration is necessary to achieve bold strategies to slow the rate of climate change.

The county is at a moment in time where it is experiencing the effects of global warming in rising temperatures, increased risk of wildfire, longer periods of drought and short bursts of intense rainfall. The 2013 CAS was written when the County was at the precipice of climate change, but that time has passed. The County is now faced with the challenge of rapidly shifting transportation and development patterns, economic systems and societal norms in an effort to stop the release of GhG pollutants and protect what remains for future generations. In response, the 2022 CAAP functions as both an aspirational and realistic strategic climate plan. Its strategies reflect major system shifts that are necessary by 2030 and beyond and the objectives are the incremental steps towards achieving those goals.

Included in the design of the 2022 CAAP is an assumption that the current solutions will shift and change as time progresses. Additionally, State and federal legislation will change and there will be new funding opportunities. To stay current and be adaptive and accountable in its implementation, the 2022 CAAP objectives will be evaluated at the end of a two-year cycle and will be revised based on an evaluation of progress made. Many of the objectives will have been achieved and will be updated with the next set of steps towards achieving the strategies. Those that have not been achieved will be assessed for barriers and adjusted accordingly. After another two-year cycle, the strategies will be evaluated based on the most current greenhouse gas inventory and other supporting data. This means that the 2022 CAAP begins a two-year cycle of updating the objectives and a four-year cycle of updating the strategies.

The 2013 CAS was designed similar to other climate action plans at the time and includes long-term strategies and the milestones to achieve them. Additionally, a typical development period for a climate action plan is anywhere from two to three years. The 2022 CAAP has condensed the development period into 11 months and produced a plan using a collaborative and rapid engagement process with County and community stakeholders. The result is a plan with adaptation and mitigation strategies, founded upon the principles of equity and actionable within the span of local government response.

Mitigation and Adaptation

The 2022 CAAP defines mitigation as the reduction of greenhouse gas emissions (GHG) into the atmosphere. Adaptation is defined as the adjustment of government processes, infrastructure and our community to minimize or prevent negative impacts from climate change. Both approaches are included in the 2022 CAAP with the goal of both minimizing greenhouse gas emissions and implementing adaptive practices.

Equity

The 2022 CAAP defines climate equity as both protection from environmental impacts and hazards as well as access to environmental benefits for all, regardless of income, gender, race,

age and other characteristics. The mitigation and adaptation strategies have been evaluated for potential negative impacts on vulnerable populations and under-invested communities using Equity Guardrails. Equity Guardrails are a specific set of evaluation criteria designed to ensure that strategies address equity concerns. Application of the Equity Guardrails allows for the formulation of strategies that do not result in disproportionate burdens, dislocation, inequities or discrimination. The Equity Guardrails can be found in Appendix D and the equity analysis of the current set of objectives can be found in Appendix E. The application of the Equity Guardrails is an initial limited test of the obvious points of intersection with the criteria and will need to be addressed further in implementation.

The Equity Guardrails will be used as a guide during the implementation phase of the strategies and objectives to ensure that the benefits and costs of each action are experienced proportionately when factoring in existing resources of all community members. The Equity Guardrails are a critical piece of the 2022 CAAP because they provide a structural tool to highlight potentially disproportionate solutions to climate change. Identifying gaps in equity will allow for a reworking of the strategy, resulting in strong goals that support all members of the community. They will act as an accountability mechanism for adherence to equity as the 2022 CAAP is evaluated after each two-year cycle.

County Collaborative Engagement

The 2022 CAAP was developed collaboratively by County staff that participated in three work groups focused on the Built Environment, Natural Environment and Community and Economy. The workgroups collectively were comprised of 28 subject matter experts from the following departments:

- Agricultural Commissioner
- Agricultural Extension
- Community Development and Infrastructure (CDI)
- County Administrative Office (CAO)
- Health Services Agency (HSA)
- Human Services Department (HSD) / Workforce Development Board (WDB)
- Information Services Department (ISD)
- Parks, Open Space and Cultural Services Department
- Sheriff's Office

This County staff team, along with the support of five CAAP Climate Policy Interns, worked collaboratively to develop the 2022 CAAP strategies and objectives.

CAAP Climate Policy Internship Program

The environment that we are working to protect now is what the youth of today will inherit. The 2022 CAAP includes a Climate Policy Internship Program that whose focus is to support local youth, from high school through graduate school, work as paid interns for one year. In addition to the internship duties, students learn and participate in local government, connect with a mentor and complete a capstone project. The design of the program is to have a mix of students from each area of the county, thus mirroring the distributional equity value of the 2022 CAAP.

Integrated Efforts

The 2022 CAAP team recognized the intersection of many other County plans and initiatives and sought integration with other efforts within the County in plan, strategy and objective development. County efforts that informed the 2022 CAAP include, but are not limited to, fisheries and watershed management, groundwater and water supply, the Drought Response Outreach Plan (DROP – Appendix F), the 2021 Local Hazard Mitigation Plan, 2022 County of Santa Cruz Active Transportation Plan, Vision Zero, the General Plan Sustainability Update, the 2023 Housing Element update, the Association of Monterey Bay Area Government's (AMBAG) Natural and Working Lands Climate Mitigation and Resiliency Study, and the Regional Transportation Commission's CALTRANS Sustainable Transportation Planning Grant.

Regional Approach

The 2022 CAAP also takes a regional approach to climate planning wherever possible. The County of Santa Cruz contracted with the same consultant firm, Rincon Consultants, Inc., that was hired by the City of Watsonville and the City of Santa Cruz for the data collection and design of their climate plans. As a result of this, the GHG inventory methodology was synchronized where possible and the strategies in both plans were consulted in the development of the 2022 CAAP strategies.

3. GREENHOUSE GAS EMISSIONS IN SANTA CRUZ COUNTY

As greenhouse gas emissions from human activities increase, they build up and warm the atmosphere and our oceans, leading to many and extreme climate changes—in the weather on land and in the oceans. Many of the primary greenhouse gases stay in the atmosphere for tens to hundreds of years after being released and their warming effects on the climate persist over a long time and can therefore affect both present and future generations. (EPA, 2022)

Greenhouse gases (GHG) from human activities are the most significant driver of observed climate change since the mid-20th century. This section provides an analysis of the greenhouse gas emissions from primary human activities, the contributions from different sectors, changes in emissions since the 2013 CAS and mitigation reduction targets. The 2019 GHG inventory for the

unincorporated area in Santa Cruz County is included and targets presented. The 2019 GHG Inventory included a detailed analysis of the different sectors contributing emissions. The results of the 2020 GHG Inventory, completed by AMBAG, is included as a general comparison, but it did not include the same robust analysis. This was due to the fact that the year 2020 was during the height of the COVID-19 pandemic when shelter-in-place orders were being observed and normal options were disrupted. Therefore, 2020 was not representative of normal functions of society.

The 2022 CAAP uses comprehensive, standardized and defensible greenhouse gas inventory data from 2019. The 2019 greenhouse gas inventory was originally completed by the Association of Monterey Bay Area Governments (AMBAG) as part of a regional greenhouse gas emissions inventory in September 2021. The 2019 inventory covers emissions sources within the boundary of the unincorporated County, excluding the four (4) major cities of Capitola, Santa Cruz, Scotts Valley, and Watsonville. The inventory thereby reflects emissions over which the County has more direct control. More detailed information on the methodology and data can be found in Appendix A.

The 2020 greenhouse gas inventory completed by AMBAG is used as a comparison to 2019 to assess how emissions have changed as a result of decreased vehicle miles traveled (VMT) and the implementation of remote work. One year of data does not provide sufficient data to reveal trends but it does provide us with a glimpse of what we have achieved with a radical change in behavior and what more may be necessary. More detailed information on the inventory can be found in Appendix B.

Greenhouse Gas Emissions (GHG)

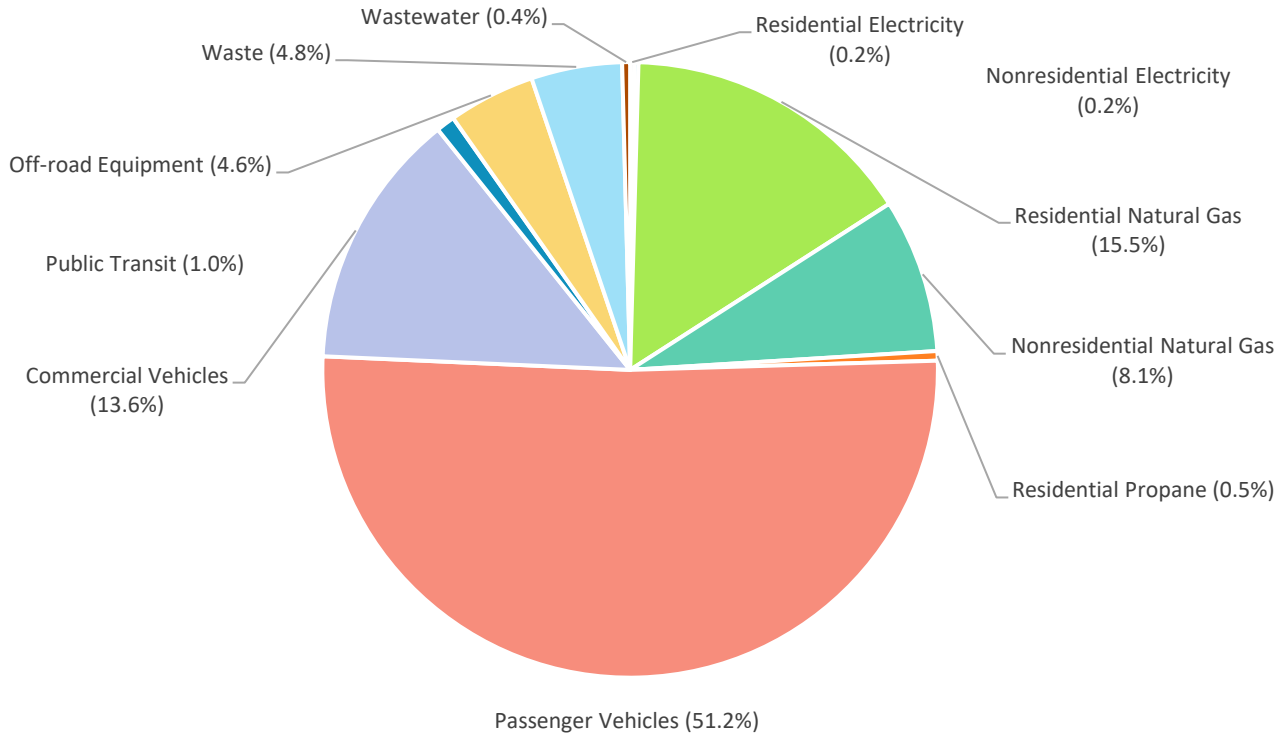
The 2019 inventory focuses on the three greenhouse gases most relevant to County operations: carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Other gases are omitted from the inventory, specifically those emitted primarily in private sector manufacturing and electricity transmission (hydrofluorocarbons, perfluorocarbons, and sulfur hexafluorides). This approach is consistent with typical community inventory approaches, as industrial emissions are outside of a County's jurisdictional control. Emissions totals are then presented as "CO_2 equivalent" (CO_2E) by converting the relative impacts of methane and nitrous oxide to their CO_2 equivalent.

Figure 4. GHG Emissions by Category below shows the breakdown by sector of the GHG inventory, with 70.4% of GHG emissions coming from transportation, which includes passenger vehicles (51.2%), commercial vehicles (13.6%), public transit (1.0%) and off-road equipment[2] (4.6%). Residential and nonresidential natural gas and propane total 24.1% of GHG emissions compared to 0.4% for both residential and nonresidential electricity. The amount of GHG from transportation

[2] Includes Agriculture and Construction.

is the most significant contributor, with natural gas and propane from the built environment being next.

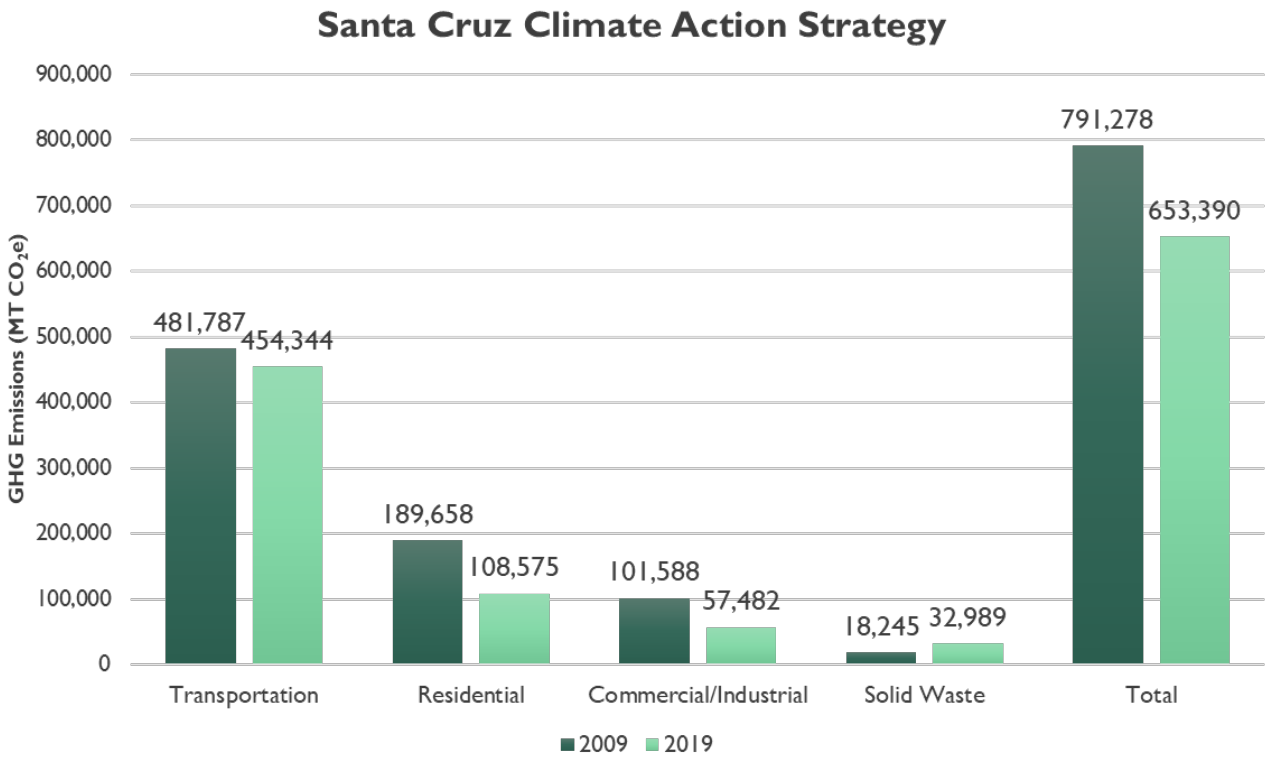
Figure 4. GHG Emissions by Category



GHG Changes Since the 2013 Climate Action Strategy

GHG inventories are typically completed every five years to allow sufficient time for policy changes to take effect and to factor for anomalous societal changes, such as the COVID-19 pandemic. The previous Santa Cruz County GHG inventory was completed in 2009 and when comparing it to the recent 2019 inventory progress in seen in decreased GHG emissions. Primarily this is due to State law enactments regarding emissions, but it is also due to the implementation of Central Coast Community Energy (formerly Monterey Bay Community Power). (The CEMEX plant closing is not factored into GHG emissions because it is considered an operational point in time change, not a policy or systemic change that was implemented by residents within the unincorporated area.) Figure 4. shows the decrease from 2009 to 2019 in the areas of transportation, residential and commercia/industrial energy and an increase in solid waste landfill emissions in MT CO2E. CAP 2019 inventory in Figure 5. GHG Emissions 2009 to 2019 excludes off-road transportation, residential propane, and wastewater inventories for a representative comparison. Total emissions for 2019 in Figure 4 are without those categories. Total GHG emissions with these categories included is 691,262 MT CO2E.

Figure 5. GHG Emissions 2009 to 2019



GHG Reduction Targets

Unincorporated Santa Cruz County GHG emissions reduction strategies and objectives are informed by the State of California GHG emissions reduction targets. In 2016, the State passed Senate Bill (SB) 32, which requires California to reduce GHG emissions by 40% below 1990 levels by 2030. In September 2022, Assembly Bill (AB) 1279 was signed, declaring it a policy of the State to achieve net zero greenhouse gas emissions by 2045, and to achieve and maintain net negative greenhouse gas emissions afterwards. AB 1279 requires that by 2045, statewide greenhouse gas emissions caused by humans be reduced to at least 85% below 1990 levels. Addressing the remaining 15%, the bill requires implementation of a variety of policies and strategies to enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies in California. The 2022 CAAP strives to meet the SB 32 target of reducing GHG emissions 40% below 1990 levels before 2030, while simultaneously establishing a policy framework to achieve the longer-term target of net negative GHG emissions by 2045 (AB 1279).

Figure 6. GHG Emissions Forecast and Target Pathway

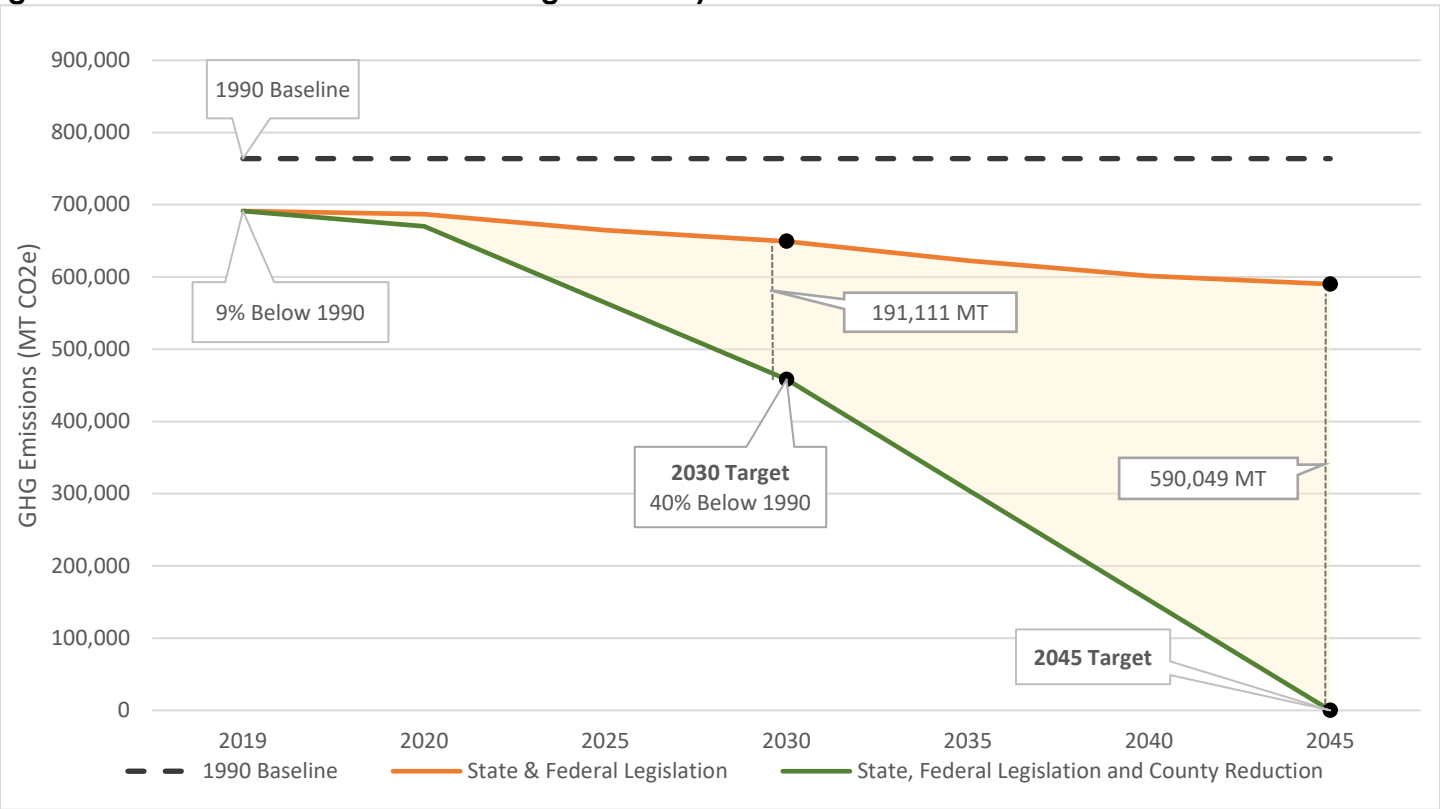


Figure 6. GHG Emissions Forecast and Target Pathway shows the targets set forth by SB 32 and AB 1279. In addition to being compliant with State law, the 2022 CAAP sets forth GHG reduction targets as the specific measurable outcomes to be achieved by the County of Santa Cruz. Federal and State legislation will reduce the County's GHG emissions associated with transportation, building efficiency and renewable electricity. A list of the legislation is provided below.

Transportation Legislation to Reduce GHG Emissions

- *Advanced Clean Cars I – California Air Resources Board*

  Advanced Clean Cars combines the control of smog-causing (criteria) pollutants and greenhouse gas (GHG) emissions into a single coordinated package of regulations: the Low-Emission Vehicle (LEV) regulation for criteria and GHG emissions and a technology forcing regulation for zero-emission vehicles (ZEV) that contributes to both types of emission reductions. The Advanced Clean Car I regulations were adopted in 2012 to address model year 2015-2025.

- *Advanced Clean Cars II – California Air Resources Board*

  Advanced Clean Cars II (ACCII) regulations establish the next set of low emission vehicles (LEV) and zero emission vehicles (ZEV) requirements to contribute to meeting federal

ambient air quality ozone standards and California's carbon neutrality targets. The main objectives of ACC II are:

- Maximize criteria and GHG emission reductions through increased stringency and real-world reductions
- Accelerate the transition to ZEVs through both increased stringency of requirements and associated actions to support wide-scale adoption and use for model years 2026-2035.

- *California Senate Bill 1, the Road Repair and Accountability Act of 2017*

  The Innovative Clean Transit (ICT) regulation was adopted in December 2018 and requires all public transit agencies to gradually transition to a 100% zero-emission bus (ZEB) fleet. Beginning in 2029, 100% of new purchases by transit agencies must be ZEBs, with a goal for full transition by 2040. It applies to all transit agencies that own, operate, or lease buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds.

- *California Phase 2 Greenhouse Gas Standards*

  California Air Resources Board (CARB) staff worked jointly with the U.S. Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) on the next phase of federal greenhouse gas (GHG) emission standards for medium- and heavy-duty engines and vehicles. These federal Phase 2 standards were built on the improvements in engine and vehicle efficiency required by the Phase 1 emission standards and represent a significant opportunity to achieve further GHG reductions for later model year heavy-duty vehicles, including trailers.

Building Efficiency Legislation to Reduce GHG Emissions

- *Building Energy Efficiency Standards – Title 24*

  California's energy code is designed to reduce wasteful and unnecessary energy consumption in newly constructed and existing buildings. The California Energy Commission updates the Building Energy Efficiency Standards (Title 24, Parts 6 and 11) every three years by working with stakeholders in a public and transparent process.

Energy Legislation to Reduce GHG Emissions

- *Renewables Portfolio Standard – RPS*

  The Renewables Portfolio Standard (RPS) is one of California's key programs for advancing renewable energy. The program sets continuously escalating renewable energy procurement requirements for the state's load-serving entities. Generation must be procured from RPS-certified facilities. The California Energy Commission verifies RPS claims.

- *California Senate Bill 100 – "The 100 Percent Clean Energy Act of 2018"*

  California Senate Bill 100 sets a 2045 goal of powering all retail electricity sold in California and State agency electricity needs with renewable and zero-carbon resources — those such as solar and wind energy that do not emit climate-altering greenhouse gases. It updates the State's Renewables Portfolio Standard to ensure that by 2030 at least 60 percent of California's electricity is renewable. It further requires the Energy Commission, Public Utilities Commission and Air Resources Board to use programs under existing laws to achieve 100% clean electricity and issue a joint policy report on SB 100 by 2021 and every four years thereafter.

More details on the GHG Emissions targets can be found in the GHG Analysis Report, Appendix A, Section 4.2 on pages 22-24.

Building electrification, development patterns (as expressed through land use policy and zoning code), and transportation electrification are the three primary strategies that will move the county towards net zero greenhouse gas emissions by 2045. These three areas will require some policy and operational shifts by the County but are within the scope of local government to support and implement. The 2022 CAAP strategies that address the targets include the initial incremental steps (objectives) that will lead to net zero.

GHG Emission Forecasting

The 2020 GHG Inventory provides us with an initial glimpse of a changed society, one where there are less vehicle miles traveled (VMT) and where more people work from home. From 2019 to 2020 there was about an 11% reduction in VMT from both passenger and commercial vehicles. A rebound is expected in 2021 but not to 2019 levels. There was a general increase of 24% in residential emissions (natural gas and electricity) and an 11% increase in commercial emissions (natural gas and electricity) from 2019 to 2020. This is attributed to a 24% increase in electricity and a slight 3% increase natural gas usage in the residential sector, combined with a change in Central Coast Community Energy's procurement practices. In 2020, during the pandemic, people were turning on the lights, using appliances and technology but only slightly increased natural gas use to heat their residences. Conversely, commercial buildings use of both electricity and natural gas decreased by 31% and 11%, respectively. There was a 7% increase of emissions from unincorporated area landfills, thus reflecting increased waste disposal during the pandemic.

The change in procurement practices by Central Coast Community Energy (CCCE) is a significant and one that will impact future GHG inventories for the next several years. CCCE has a goal of procuring 100% of retail sales with renewable energy by 2030. Initially, CCCE was achieving this goal using industry best practices at the time, which meant a mix of 60% of energy purchased from a mix of renewable energy sources, 60% sources through new geothermal, new solar and

new wind energy, and another 40% sources from the purchase of carbon free attributes, specifically hydropower. However, carbon offset projects support a consumerist dynamic that promotes a financial transaction that does not reflect the true bottom line of GHG emission outputs from energy supplied to consumers. CCCE made the progressive decision to responsibly account for the GHG emissions in all energy procured and through this action it is on the path to provide consumers with 100% renewable energy and to further invest in the sources that provide such energy. The result of this action will not be seen in the GHG inventories for the next several years. Future GHG emissions inventories, due to CCCE change in accounting of emissions, will increase before the use of renewable energy reduces emissions significantly and we start to see the impact of this progressive action on the part of CCCE. Future GHG inventories will need to reflect this shift in CCCE energy procurement and more closely analyze the impact of remote work policy on electricity usage.

4. CLIMATE CHANGE IMPACTS

Adaptation strategies provide ways to address climate change vulnerabilities, using natural resources or technical solutions. Examples of technical solutions include the use of home air filtration systems and battery back-up power to address the unavoidable impacts of climate change. The 2022 CAAP relied on current information about vulnerabilities in the natural and built environment, vulnerable populations and potential climate hazard impacts. This section will provide information on the climate hazards that are expected in the coming years, where the impacts will be most felt and where policy attention is most needed. (The Climate Vulnerability Assessment and Social Vulnerability Index informed the development of adaptive strategies and additional information on these sources can be found in Appendix C.)

Climate Hazards and Impacts

The primary climate hazards that are predicted to be most significant in the coming decades are listed in Table 1 below. A description of the hazard is provided along with an identification (X) of the groups impacted: vulnerable human populations, natural resources (including habitat, animals, insects and other living things) and buildings, services and infrastructure. The majority of climate hazards are expected to impact all three groups, except for drought and air quality. The 2022 CAAP prioritizes adaptation strategies that address these hazards and in further iterations of the CAAP additional adaptation measures that address additional climate hazards will be included.

A brief definition of each group is provided below:

- Vulnerable populations: low-income residents, people living and/or working outside, Black, Indigenous, and People of Color (BIPOC) populations, older adults, children, those with disabilities, people experiencing asthma, and military veterans.

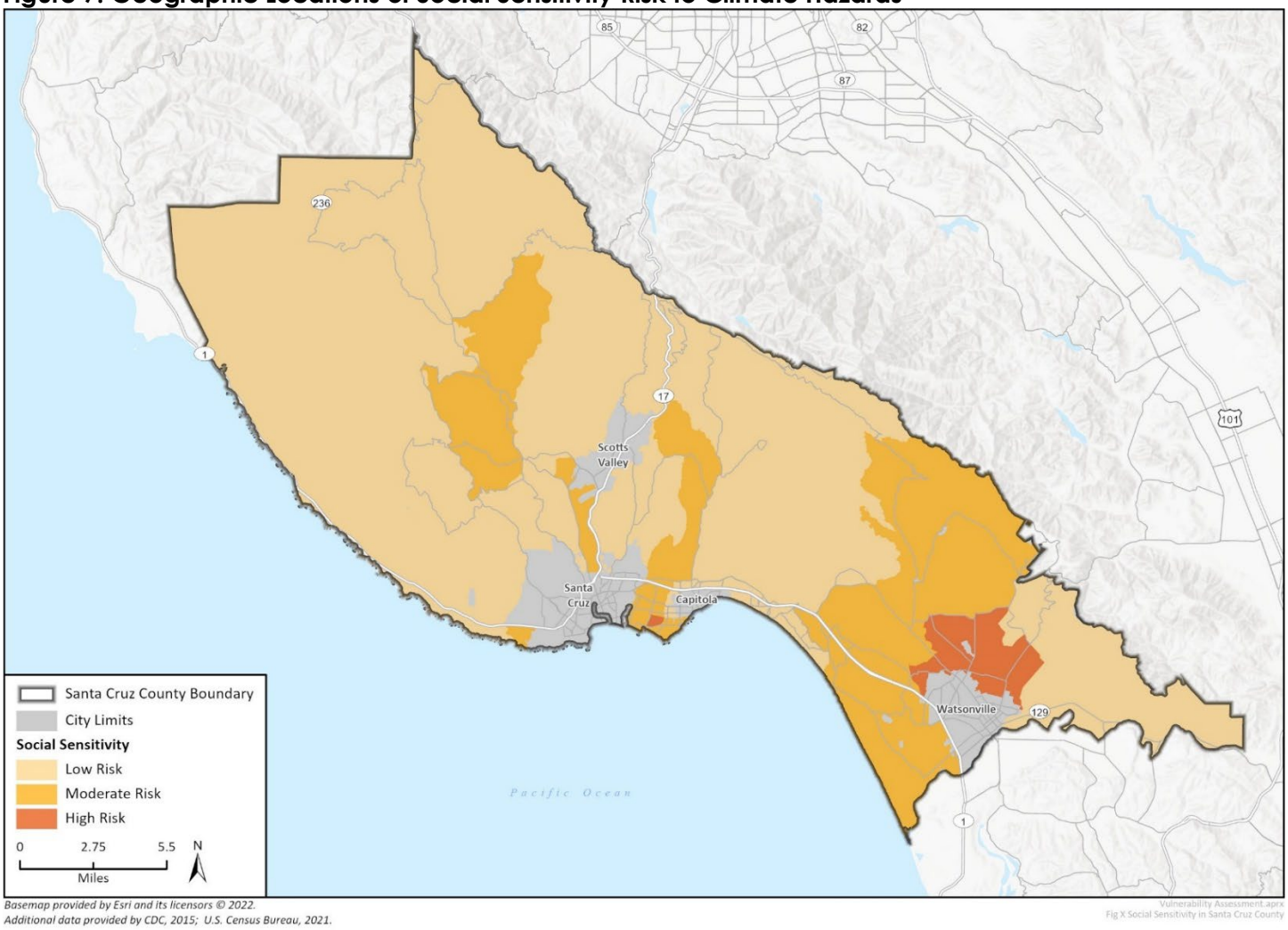
- Natural Environment: grasslands, redwood and mixed conifer forests, river systems, the ocean and all the creatures that live in them.
- Buildings, Services and Infrastructure: residential and commercial buildings, critical facilities such as hospitals, schools and churches, critical services such as electricity, drinking water, wastewater and stormwater, and infrastructure such as roads, bridges and culverts.

Table 1. Climate Hazard Impacts

Climate Hazards	Description	Vulnerable Populations	Natural Resources	Buildings, Services and Infrastructure
Extreme Heat	Annual number of extreme heat days above 90°F increase from 3 days to 19 days.	X	X	X
Wildfire	20% increased probability of wildfire in a ten-year period.	X	X	X
Landslides	Increased susceptibility of landslides as precipitation variability increases and wildfires increase in frequency, area, and severity.	X	X	X
Riverine and Stormwater Flooding	Low-lying areas experiencing more frequent and/or intense flooding, with the area of flooding potentially expanding.	X	X	X
Sea Level Rise	Up to 6.9 feet of sea level rise by 2100.	X	X	X
Seawater Intrusion	Onshore movement of seawater into freshwater aquifers.	X	X	X
Air Quality	Increases in wildfires, average maximum temperature and longer periods of drought contribute to worsening air quality.	X	X	
Drought	More frequent and severe periods of drought, challenging drinking water supplies and aquatic species habitat. Precipitation will arrive in more intense storms, increasing runoff and reducing the amount of water recharging local aquifers, further exacerbating the impacts of drought on water supply.	X	X	

Figure 7. Geographic Locations of Social Sensitivity Risk to Climate Hazards (Appendix C p.42) below shows where the those with the higher overall climate vulnerabilities primarily reside. Other communities and areas not depicted have higher specific hazard vulnerabilities such as from wildfires. For more information on the social sensitivity score please see page 40 of Appendix C.

Figure 7. Geographic Locations of Social Sensitivity Risk to Climate Hazards



2022 CAAP Mitigation strategies will decrease GHG emissions, but climate hazards are being experienced now and will continue. The adaptation strategies address equity by including immediate objectives to ensure that the most vulnerable populations receive the support necessary to safely live through climate hazards with their well-being intact.

5. GOALS, STRATEGIES AND OBJECTIVES

Climate change is a direct result of increased greenhouse gas (GHG) emissions from fossil fuel use. American dependency on fossil fuels to sustain our lifestyle is the result of deeply entrenched economic systems and cultural norms. The lifestyle choices available to most Americans result in

high GHG emissions and/or negative environmental impacts, but a lifestyle that is less damaging to the environment is not as accessible to most Americans. This is because the more environmentally friendly options are not well known, or the options are not available or within their financial reach. Addressing climate change will require making alternative choices that result in an environment that will last for many generations to come.

Goals

The 2022 CAAP has identified seven (7) goal areas where different choices can be made that will be better for the climate. The transformational change that climate action requires is not possible without acknowledging the role it plays relative to these key issues. The 29 strategies align with the goals and progress will be evaluated on the impact the objectives have on achieving the strategies, and the impact the strategies have on these goals.

1. **Affordable Housing** –There is insufficient housing to meet demand, and lack of supply combined with rising costs are compounding growing inequality. Nearly one-third of households pay more than 50% of household income for rent. Household ownership is at an all-time low and homelessness is increasing. For California's vulnerable populations, discrimination is worsening housing cost and affordability challenges. But the housing crisis is solvable. The 2022 CAAP recognizes that climate action must support a county that is home for people across the socio-economic spectrum and does not further exacerbate housing inequality (inadvertently or otherwise). The 2022 CAAP provides an opportunity to address the housing crisis in the county and contribute to a county where all residents can live in neighborhood housing that is accessible and has low environmental impacts.
2. **Healthy Ecosystems** – Resilience begins and ends with the ecosystems we live in and role they play in our lives as well as the stewardship role we assume for future generations. The 2022 CAAP seeks to restore a more functional and beneficial relationship with county ecosystems. The benefits stretch across decarbonization and adaptation strategies. Healthy forests and agricultural lands can mitigate GHG emissions in the county as well as reduce climate hazard risk. The 2022 CAAP recognizes that investments in a more functional ecosystem are a foundational piece of all climate action measures.
3. **Healthy Communities** – Climate change poses many threats to the health and well-being of Americans, from increasing the risk of extreme heat events and heavy storms to increasing the risk of asthma attacks and changing the spread of certain diseases. Conversely, climate action can play a role in improved health impacts, from healthier air to more active lifestyles, and improved nutrition. The 2022 CAAP recognizes that improved health outcomes and equitable benefits must be central to climate action. Measures

selected for implementation should provide equitable and tangible benefits to all County residents.

4. **Decarbonization** – AB 1279 establishes a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This is reflected in the 2022 Scoping Plan for Achieving Carbon Neutrality, released by the California Air Resources Board (CARB). Carbon neutrality will require transformative changes to the County's transportation, energy, and waste systems to achieve 85% decrease in GHG emissions. It will also require new strategies to sequester carbon and the capture and storage of carbon because the remaining 15% is to be met through increased action on natural and working lands. 2022 CAAP strategies provide significant opportunities for complete decarbonization at scale in support of State goals.
5. **Resilience** – Regardless of the success of limiting the root causes of a warming planet, we are facing immediate climate change impacts—from more frequent and severe weather events, ocean warming and acidification, extended periods of drought and extreme temperatures, and more frequent large-scale wildfires. Resilience is the ability to prepare for, recover from, and adapt to these impacts. Senate Bill 379 requires that cities and counties in California assess their climate change vulnerabilities and develop adaptation and resilience measures. 2022 CAAP strategies provide significant opportunities to address key climate change hazards in the county: extreme heat, drought, and wildfire.
6. **Staff Engagement –** Climate action is realized across a wide range of technical areas of responsibility. Climate action also requires interdisciplinary solutions and the work conducted on the part of the 2022 CAAP will be carried out by staff across multiple County departments. The overall effort should be balanced across all departments and one of the goals of the 2022 CAAP is to build upon existing process improvement efforts to provide opportunities to form new ways of working across departments to solve cross-cutting problems. The number of strategies and objectives reflect the capacity of staff and stakeholders to engage collaboratively.
7. **Programmatic Approach –** Carbon neutrality and increased resilience will require working across departmental and organizational silos, necessitating more integration and new tools. The 2022 CAAP implementation plan will include collaboration across sectors, stakeholders and the community, including the cities and the region. The strategies, and objectives that support them, reflect a programmatic approach that facilitates long-term progress and adaptive management, including the ability to:

- *Understand*: Invest in metrics related to climate change indicators, statistical changes in weather patterns, extremes, and develop metrics for tracking changes over time
- *Plan*: Invest climate awareness into new and existing planning efforts, develop tools for planners, and assess previous planning efforts for better including of climate information
- *Engage*: Employ a coalition-based approach recognizing where initiatives are best placed, who should be involved in different efforts, and how communications occur.
- *Implement*: Act when opportunities arise. Be prepared to pilot solutions that have opportunities to scale. Implement foundational changes that create bigger opportunities for the future.
- *Sustain*: Use information to scale up what works and make adjustments when they are needed. Maintain progress and continue to seek out climate champions and partners.

Strategies

Climate change can appear to be an elusive and nebulous problem because it is seemingly detached from individual control. However, the causes of climate change are clear and that allows us to develop achievable solutions. The 2022 CAAP sets forth mitigation and adaptation strategies that address climate change through government operations and local policy.

The 29 strategies are organized into seven primary sectors that influence climate change either through mitigating the causes or adapting to climate hazards. Sixteen (16) are mitigation strategies, nine are adaptation strategies and four address both mitigation and adaptation through government operations. Table 2. Strategy Framework below includes the seven strategy sectors, whether they mitigate or adapt to climate change and the primary reason for including them as a sector.

Table 2. Strategy Framework

Sector	Primarily Mitigating or Adapting to Climate Change	Primary Reason for Including
Energy	Mitigating	Major source of GHG emissions
Transportation	Mitigating	Major source of GHG emissions
Water	Adapting	Water supply addresses address one of the three primary climate hazards, drought.
Waste	Mitigating	Source of GHG emissions
Natural and Working Lands	Adapting	Healthy natural lands address one of the primary climate hazards, heat, and hold carbon from the air.
Wildfire Prevention	Adapting	Healthy, well-maintained forests address one of the primary climate hazards, wildfire.
Government Operations	Adapting and Mitigating	Significant system changes will need to be made through legislation, local policy and support of community choice energy.

Table 3. List of CAAP Strategies by Strategy Type below includes all 29 strategies, organized by sector. A more complete list of the strategies and the corresponding objectives can be found on page 36.

Table 3. List of CAAP Strategies by Strategy Type

No.	Strategy Type	Strategy
1	Energy	Eliminate fossil fuel use in new buildings.
2	Energy	Eliminate fossil fuel use in new and existing County facilities with efficient electric equipment.
3	Energy	Eliminate fossil fuel use in existing residential buildings.
4	Energy	Eliminate fossil fuel use in existing commercial buildings.
5	Energy	By 2030, achieve 100% clean energy provided by Central Coast Community Energy (CCCE).
6	Energy	Build the microgrid of the future.
7	Transportation	Reduce vehicle miles traveled (VMT) through higher density zoning for housing development along transit corridors and optimize use of remote work.
8	Transportation	Eliminate fossil fuel use from the County vehicle fleet.
9	Transportation	Eliminate fossil fuel use from passenger and commercial vehicles.
10	Transportation	By 2040, increase use of public transportation, walking, or bicycling for commute trips by 15%.
11	Transportation	Increase internet connectivity access.

No.	Strategy Type	Strategy
12	Water	Protect and manage local county aquifers.
13	Water	Increase the use of reclaimed wastewater and stormwater for irrigation and general use.
14	Waste	Reduce carbon footprint of landfill.
15	Waste	Reduce, reuse, repair, and recovery of goods and materials for packaging.
16	Waste	Increase the demand for organic waste products by developing a reuse solution.
17	Natural/Working Lands	Enhance carbon sequestration strategies through conservation and restoration of natural habitats, sustainable farming practices, and carbon capture technologies.
18	Natural/Working Lands	Increase the urban canopy.
19	Wildfire Prevention & Mitigation Strategies	Protect at-risk communities from wildfire risk through improved forest health management.
20	Wildfire Prevention & Mitigation Strategies	Reduce wildfire risk to structures in at-risk communities
21	Government Operations	Establish all-hazard disaster-resiliency community centers across the county.
22	Government Operations	Build and rehabilitate County infrastructure to accommodate extreme weather.
23	Government Operations	Support climate-impacted communities at risk of natural disasters.
24	Government Operations	Provide housing during a disaster for communities in need.
25	Government Operations	Adapt to community needs and legislative requirements though effective monitoring and evaluation.
26	Government Operations	Create regional mitigation and resilience programs supported through collective funding opportunities.
27	Government Operations	Youth and families engage effectively with community climate change efforts.
28	Government Operations	Reduce the carbon footprint of the food system by reducing waste, promoting climate friendly diets, and getting excess food to communities in need.

No.	Strategy Type	Strategy
29	Government Operations	Engage in State and federal legislation to achieve climate goals.

Prioritized Mitigation Strategies

Greenhouse gases are the major contributor to climate change and the 2019 GHG inventory reveals that in Santa Cruz County the majority of our emissions are coming from transportation, specifically, Passenger Vehicles (51.2%), Commercial Vehicles (13.6%), Off-road Equipment (4.6%) and a slight amount from Public Transit (1.0%). The category with the second highest rate of emissions is the building sector, with residential homes leading at 15.5%, and non-residential buildings at 8.1%.

We know we need to reduce our emissions and State law will require us to do so. To achieve the AB 1279 goal of net zero in 2045, by 2030 the County will need to reduce our emissions by 32% (or 191,111 MT CO2e) from 2019, slightly less than the entire 2019 emissions inventory of the City of Santa Cruz, which was 274,584 MT CO2e. In order to achieve this reduction, the County must be ambitious in its strategies and objectives. The CAAP strategies aim to meet the legislative goals through significant reductions in transportation and building emissions. Another priority goal is to successfully achieve clean and renewable energy production through Central Coast Community Energy (CCCE). This would mean that all the electricity provided by would be free of GHG emissions and sourced through a mix of solar, geothermal wind energy.

The 2022 CAAP includes strategies that will impact County operations and strategies that will impact policy for the county as a whole. This two-pronged approach aims to change how local County government functions and the choices made by community members, with the joint goal of reducing greenhouse gas emissions from our daily activities. Table 4. Priority Mitigation Strategies below includes the mitigation strategies that will have the greatest impact on decreasing our greenhouse gas emissions from vehicles, facilities, residential buildings, commercial buildings and the landfill. Building new housing and retrofitting existing residential and commercial buildings to utilize clean electricity for heat and appliances and foregoing fossil fuel-based equipment will decrease the GHG emissions, along with increased internet connectivity, allowing those who can, to work from home to reduce vehicle miles traveled and use of fossil fuel-based transportation.

Table 4. Priority Mitigation Strategies

Mitigation Strategies- *Priorities*	
County Operations	County Policy
By 2030, achieve 100% clean energy provided by Central Coast Community Energy.	Reduce vehicle miles traveled through higher density zoning for housing development along transit corridors and optimize use of remote work.
Eliminate fossil fuel use from the County vehicle fleet.	Eliminate fossil fuel use from passenger and commercial vehicles.
Eliminate fossil fuel use in new and existing County facilities with efficient electric equipment.	Increase internet connectivity access.
Reduce carbon footprint of landfill.	Eliminate fossil fuel use in new buildings.
Engage in State and federal legislation to achieve climate goals.	Eliminate fossil fuel use in existing residential buildings.
	Eliminate fossil fuel use in existing commercial buildings.

Prioritized Adaptation Strategies

In addition to knowing what causes climate change, we know that it is occurring now and that we will need to adapt to its impacts. The Climate Vulnerability Assessment and Social Vulnerability Index (Appendix C) show that the three major climate change hazards in the unincorporated area will be drought, heat and wildfire, all of which will impact vulnerable populations the most. Vulnerable populations include those with low-income, children, older adults, Black, Indigenous, and People of Color (BIPOC), people with disabilities and those with pre-existing health conditions, such as asthma. Other species and habitats are also vulnerable to climate change and the 2022 CAAP includes adaptation strategies with goals to protect all who are vulnerable to the changes we currently experience and expect to see more of in the future. Adaptation strategies will provide protections for our aquifers, our forests and those most at risk during heat waves and wildfires. All hazard disaster resilience centers will be established in the unincorporated areas with populations most at risk to climate change. Other key strategies involve engaging in legislation in support of adaptation strategies, ensuring that new County buildings are resilient to climate hazards, and that local builders are given priority – when possible - thus reducing VMT during the construction process. Table 5. Priority Adaptation Strategies below includes priority adaptation strategies that will affect County operations and those that will affect county policy, specifically reducing the risk of wildfire.

Table 5. Priority Adaptation Strategies

Adaptation Strategies – *Priorities*	
County Operations	County Policy
Build and rehabilitate County infrastructure to accommodate extreme weather.	Reduce at-risk communities from wildfire risk through improved forest health management.
Adapt to community needs and legislative requirements though effective monitoring and evaluation.	Reduce wildfire risk to structures in at-risk communities.
Establish all-hazard disaster-resiliency community centers across the County.	Protect and manage local county aquifers.
	Increase the use of reclaimed wastewater and stormwater for irrigation and general use.

Objectives

Each strategy includes five categories for incremental steps towards achieving the goal. These steps are called objectives and they will be evaluated every two years for results and equity impacts. If they have been completed, new objectives will be developed; if they haven't been completed, the barriers to completion will be assessed and the objective may be rewritten to address those barriers. Every four years the strategies will be evaluated against State and federal policy, local climate change impacts and the Equity Guardrails. If the policy and environmental landscape has changed such that the strategy needs to be updated, changes will be made to both the strategies and corresponding objectives. Additionally, if the strategy does not align within the Equity Guardrails, it will be adjusted to meet the criteria.

Table 6. Objectives Framework shows the five categories of objective and the purpose. Strategies do not necessarily require each objective type in this first two-year cycle. This is because the initial actions associated with the strategy may not require that particular objective at this time.

Table 6. Objectives Framework

Objective Type	Purpose
Implementation Objective	Preliminary studies or action necessary to support project or program design
Engagement Objective	Engagement and education necessary to implement the project or program.
Code Objective	County policy and regulatory changes necessary for project or program implementation.
Partnerships Objective	County Departments and other agencies/organizations that will support with design, implementation and/or education.
Funding Objective	Financial plan for funding the project or program.

CONCLUSION

The 2022 Climate Action and Adaptation Plan commences a process for setting targets for achieving goals to reduce our greenhouse gas emissions and implement resilient practices that protect all, especially those most vulnerable, from climate hazards. This plan provides goals, strategies and objectives that will bring us forward as a county to address climate change and it is also a plan that, through its design, is adaptive to the changing policy and environmental landscape that is yet to come. The community wide indicators for the goals and the metrics for the objectives that are to be developed will be key part of ensuring accountability and those will be designed at the start of implementation.

2022 CAAP STRATEGIES AND OBJECTIVES

The 2022 CAAP strategies and two-year objectives are includes below, organized by impact on GHG emissions and climate hazards. Those strategies that are expected to result in the most significant decrease to GHG emissions are listed first and the strategies expected to address the known climate hazards with greatest impact are listed afterwards.

Energy

1. Eliminate fossil fuel use in new buildings	
Lead Department: Department of Community Development & Infrastructure (CDI) – Planning **Partners:** Office of Response, Recovery & Resilience (OR3); Chief Building Official/Inspection Team	
Implementation Objective:	Electrification building code adoption. • Year 1 - In the 2022 code adoption cycle, require electrification in new residential builds within the urban services line. • Year 2 - Research feasibility of code expansion into all new residential construction and new commercial construction.
Engagement Objective:	Develop educational materials for residents, local contractors, developers, and service providers to understand the benefits of all new electric construction, upcoming State and local code requirements and potential rebates.
Code Objective:	Develop draft and principals for local ordinance for electrification in new commercial buildings. Steps to be completed to adopt the ordinance(s) are as follows, using a tiered or phased approach: • STEP 1 - Review background information and model ordinances in other jurisdictions • STEP 2 - Coordinate with local stakeholders • STEP 3 - Develop draft outline and principals for local ordinance.
Partnership Objective:	Work with Central Coast Community Energy (CCCE) on education and outreach efforts to the public and construction industry.

2. Eliminate fossil fuel use in new and existing County facilities	
Lead Department: General Service Department (GSD)	
Implementation Objective:	Initiate building and equipment electrification plans for County facilities that analyze cost efficiency and provide a prioritized schedule for updates based on time of replacement and financial feasibility.
Partnership Objective:	Partner with CCCE to explore potential financing options for public sector electrification efforts.
Funding Objective:	Identify and apply for funding opportunities.

3. Eliminate fossil fuel use in existing residential buildings	
Lead Department: CDI – Planning **Partners:** OR3; CCCE; Library System	
Implementation Objective:	• Research the estimated cost impact of a "time of sale" ordinance requiring electrification upgrades when real estate changes hands. • Evaluate scale of major remodels and HVAC replacement permits issued county-wide that could be threshold for electrification requirements.
Engagement Objective:	Engage the real estate community on the benefits and value (including incentives) of building electrification and obtain feedback from stakeholders.
Code Objective:	Develop draft outline and principals for a local ordinance(s) for time of sale, major remodel, and time of replacement options.
Partnership Objective:	Partner with CCCE to educate community and construction community. Partner with Library system on cooking with induction education and outreach programs.

4. Eliminate fossil fuel use in existing commercial buildings	
Lead Department: CDI- Planning **Partners:** OR3, Workforce Development Board, Chamber of Commerce, County Administrative Office (CAO) – Economic Development, and Santa Cruz Small Business Development Center, Ecology Action, CCCE	
Implementation Objective:	• Investigate the feasibility of a local target setting ordinance. • Potentially include energy assessments or retro commissioning improvements to encourage water and energy conservation and reduce greenhouse gas emissions.
Engagement Objective:	Engage the commercial and real estate communities on the benefits and cost-effectiveness of building electrification, incentives and funding options, and contractors available for electrification transition.
Code Objective:	Develop draft outline and principals for local ordinance for existing commercial buildings.

5. By 2030, achieve 100% clean energy provided by CCCE.	
Lead Department: CAO, OR3 **Partners:** Board of Supervisors (BOS), CCCE	
Implementation Objective:	Support annual analysis and reporting program by CAO and the BOS to keep CCCE moving toward decarbonation target of 2030.
Engagement Plan:	If opt-out levels exceed 2%, engage local communities and collect information for the purpose of identifying reasons for increased opt-out.
Partnership Plan:	Maintain robust participation on Operations Board and Policy Board of CCCE to ensure the organization sustains trajectory toward 100% clean energy by 2030.

6. Build the microgrid of the future.	
Lead Department: OR3 **Partners:** GSD; CDI	
Implementation Objective:	Improve electrical grid reliability in the rural areas due to their use of the Emergency Power Safety Shutoff (EPSS) system and settings. Provide a plan for microgrid development that includes potential siting, cost estimate, improved granularity of EPSS circuits, and resilience of the transmission system to reduce frequent EPSS outages.
Engagement Objective:	Work with PG&E on outreach and education for EPSS resilience efforts for the community to reduce impacts.
Partnership Objective:	Expand distributed grids into surrounding areas in collaboration with CCCE based on Housing Element designated sites.
Funding Objective:	Identify and secure funding from PG&E and/or other sources for backup power to vulnerable populations or medical health devices for residents subject to frequent outages.

Transportation

7. Reduce vehicle miles traveled through higher density zoning for housing development along transit corridors and optimize use of remote work.	
Lead Department: CDI– Sustainability and Advanced Planning **Partners:** OR3	
Implementation Objective:	• Update land use and transportation planning in the urban mid-county area through the implementation of the Sustainability Update Project and the VMT Mitigation Bank. • Update the Housing Element (HE) to optimize the Regional Housing Needs Allocation (RHNA) re-zone of identified sites within the urban area for maximum development and construction potential. • Develop a prioritization matrix for HE rezone sites indicating those that have the lowest County-required development costs (outside permits) and utility improvement costs.

Engagement Objective:	• Engage stakeholders, technical committees, and the public as part of the Housing Element update & the VMT Mitigation Bank Program. • Regularly update the Housing Element Update project website with information and opportunities for engagement.
Code Adoption Objective:	• Adopt the code amendments necessary to implement the sustainable transportation and land use policies that will result in a reduction of vehicle miles traveled and increase housing density and affordability. • Approve the HE and rezone of properties to meet the RHNA requirements.
Partnership Objective:	Collaborate with the Santa Cruz County Regional Transportation Commission and the City of Watsonville on VMT Mitigation Bank program development and ensure the program is available to all jurisdictions in the county.
Funding Objective:	The Sustainability Update and the Housing Element Update are funded through a combination of CDI budget (General Fund) and grants. The VMT Mitigation Bank Development Program is funded through a Sustainable Communities Grant from Caltrans.

8. Eliminate fossil fuel use from the County vehicle fleet	
Lead Department: GSD **Partners:** CCCE, County Departments	
Implementation Objective:	• Prioritize transition to electric vehicles using a standardized vehicle replacement schedule. • Provide an evaluation of the cost difference between different types of electric vehicles and available charging stations. • Identify opportunities for local contractor employment to install charging stations. • Create and implement a surplus program for under-invested community members to purchase fuel-efficient vehicles from retired County fleet. • Promote alternate modes of transportation to attend off-site meetings, inspections, and other forms of work-related engagement with the community. Concepts and ideas could be expansion of bike loan program and Gem Vehicle drop-in and use program.

Engagement Objective:	Educate and engage County staff in the pilot program for use of alternate transportation methods for work related activities.
Code Objective:	Amend county administrative procedures to direct replacement of vehicles using a phased approach by vehicle type: passenger fleet, light and medium duty fleet.
Funding Objective:	Develop Funding Plan and pursue grants for charging infrastructure and submit Low Carbon Fuel Standard application for building out charging infrastructure.

9. Eliminate fossil fuel use from passenger and commercial vehicles	
Lead Department: GSD **Partners:** CDI; Parks; OR3	
Implementation Objective:	Install new electric vehicle charging infrastructure at select County-owned properties for use by the public. Explore feasibility of a Partnership Plan with affordable electric vehicle charging companies to install chargers on select county properties.
Engagement Objective:	Create a County recognition program for local employers who significantly reduce employee commute fossil fuel use.
Code Objective:	• Install electric vehicle charging infrastructure for public use at select County facilities. • Explore feasibility of ordinance to require existing commercial centers to install electric vehicle charging infrastructure.
Partnership Objective:	Design and implement a commuter car share program to support decreased VMT.
Funding Objective:	• Support cost recovery system for electric vehicle charging stations on County facilities during normal work week, moving to market rate charge structure only during evenings and weekends. • Pursue state and federal grant funding to support low-income residents purchasing Electric vehicles.

10. By 2040, increase use of public transportation, walking, or bicycling for commute trips by 15%	
Lead Department: CDI- Department of Public Works Transportation **Partners:** OR3; Regional Transportation Commission, Santa Cruz Metro Transit District	
Implementation Objective:	• Implement County of Santa Cruz Active Transportation Plan (finalized in 2022) in support of active transportation mode share (use of public transportation, walking, or bicycling for commute trips). • Launch County bike share program in collaboration with the City of Santa Cruz and Capitola.
Code Objective:	• Define and evaluate Opportunity Areas as areas for transit-oriented development (including, per SB 375, for California Environmental Quality Act streamlining benefits). 3 • Adopt electric powered personal mobility device ordinance for use on sidewalks to ensure safe mobility for pedestrians.
Partnership Objective:	• Partner with County Office of Education, Ecology Action, and Bike Santa Cruz County in addition to other community-based organizations in the active transportation space to educate, collaborate and identify barriers. • Work with Association of Monterey Bay Area Governments (AMBAG)
Funding Objective:	Prioritize grant opportunities for corridor investment projects along high-quality transit corridors that serve multiple modes of travel.

[3] SB 375 directs the California Air Resources Board to set regional targets for reducing greenhouse gas emissions. The new law establishes a "bottom up" approach to ensure that cities and counties are involved in the development of regional plans to achieve those targets. SB 375 builds on the existing framework of regional planning to tie together the regional allocation of housing needs and regional transportation planning in an effort to reduce greenhouse gas (GHG) emissions from motor vehicle trips.

11. Increase internet connectivity access	
Lead Department: ISD **Partners:** Internet Service Providers in the County	
Implementation Objective:	• Conduct a broadband access analysis to identify gaps in broadband availability across the county. • Analyze opportunities to develop a broadband district through the establishment of an income tax. • Explore the feasibility of options that facilitate an increase in the number of county residents who can work remotely. • Conduct cable internet access analysis to identify gaps in cable internet in the rural portions of the County. •
Partnership Plan:	• Partner with broadband providers to highlight equity and resilience concerns associated with broadband access and identify a strategy to fill in broadband access gaps. • Partner with cable internet providers to expand coverage in the rural areas.

Water

12. Protect and manage local county aquifers	
Lead Department: Health Services Agency (HSA) - Environmental Health **Partners:** Santa Margarita Groundwater Agency, Santa Cruz Mid-County Groundwater Agency, Pajaro Valley Water Management Agency	
Implementation Objective:	• Identify parcels owned or managed by the County that can be used for recharge projects. 4 • Explore feasibility of developing storm water solutions for select existing public and private sites with high amounts of impervious surface.

[4] Recharge is a water management tool that allows renewable surface water to be stored underground for later recovery during periods of reduced water supply.

Engagement Plan:	Educate county departments on groundwater sustainability. Explore voluntary private well monitoring program to expand our data and knowledge of groundwater levels in impacted basins.
Partnership Plan:	Partner with local water agencies and Groundwater Management Areas (GMAs) on ways to expand resilience with recycled water or other means for recharge.
Funding Plan:	Seek grant funds for recharge projects and stormwater solutions.

13. Increase the use of recycled wastewater and stormwater for irrigation and general use	
Lead Department: CDI- Public Works **Partners:** OR3, CAO, HSA – Environmental Health	
Implementation Objective:	• Continue evaluation of Boulder Creek Water Quality and Recovery Project expansion and Local Agency Formation Commission (LAFCo) expansion process. • Develop list of additional potential storm water projects.
Engagement Objective:	Engage with Boulder Creek and CSA-75 expansion area community members on the importance of the project and provide education on the resilience factors, water quality importance, economic issues, and the recovery benefits.
Partnership Objective:	Partner with community-based organizations to understand community barriers to the use of recycled water.
Funding Objective:	Identify a funding plan and apply for grants to support the use of recycled wastewater and stormwater.

Waste

14. Reduce carbon footprint of landfill
Lead Department: CDI- Recycling Solid Waste Section

[5] County Service Area-7, Boulder Creek Sanitation

Implementation Objective:	• Evaluate energy efficiency technologies for County waste handling facilities for cost effectiveness and carbon footprint reduction rates. • Evaluate electric vehicle charging or other alternative-energy solutions for onsite County vehicles at Ben Lomond Transfer Station and incorporate into plans for the proposed Buena Vista Landfill project. • Explore waste to energy technologies, e.g., pyrolysis and gasification, to support processing of organic materials, including green and food waste.
Partnership Objective:	Explore regional green waste processing solutions in partnership with City of Santa Cruz, Watsonville, Santa Cruz County Regional Conservation District (SCCRCD), and larger Monterey Bay region.
Funding Objective:	Explore potential for applying costs to the Existing Recycling and Solid Waste Section Budget including Recycling and Solid Waste Infrastructure Charge implemented in 2022.

15. Reduce, reuse, repair, and recovery of goods and materials for packaging	
Lead Department: CDI- Recycling Solid Waste Section **Partners:** GSD; Grey Bears	
Implementation Objective:	• Evaluate opportunities to reduce the use of non-reusable/single-use products in County facilities and commercial and institutional sectors. • Support the creation of and participate in regional a "Recycling Market Development Zone" Program provided in support by CalRecycle.
Engagement Objective:	• Provide information for the community on existing services and businesses that support reuse. • Conduct community clinics that educate the community on the repair and reuse of durable goods.
Partnership Objective:	Identify partners whose objectives align with County policy.
Funding Objective:	Develop funding plan for single-use cup tax revenue to support key County efforts towards sustainability, resilience, and reduced carbon footprint initiatives.

16. Increase the demand for organic waste products by developing a reuse solution	
Lead Department: CDI- Recycling Solid Waste Section **Partners:** Agricultural Commissioner, OR3	
Implementation Objective:	Assess the opportunities and barriers for the community, institutional, agricultural and commercial use of biochar, compost, mulch and biofuels through community outreach. Explore decentralized pyrolysis processing plant solutions for hazardous fuel reduction green waste generated in our Wildland Urban Interface (WUI) and high fire severity zones.
Partnership Objective:	Work with local organizations to increase the use of compost across the county. Partner with the community to increase capacity to distribute products as necessary.
Funding Objective:	Use County procurement requirements to support the use of compost and other qualifying organic waste products.

Natural/Working Lands

17. Enhance carbon sequestration strategies through conservation and restoration of natural habitats, sustainable farming practices, and carbon capture technologies.	
Lead Department: OR3 **Partners:** AMBAG, HSA – Environmental Health, OR3, Land Trust, Private Landowners, Agricultural Commissioner/ Extension, Farm Bureau, Resource Conservation District	
Feasibility Plan:	• Explore feasibility of implementing key findings of the 2023 Monterey Bay Natural and Working Lands Climate Mitigation and Resilience grant-funded study being commissioned by AMBAG (AMBAG). • Estimate annual residential quantity biomass and CZU Lightening Complex Fire standing dead trees biomass available for processing via pyrolysis or other technologies to create and use biochar. • Identify pyrolysis or similar technology production equipment needed. Identify capacity of existing disposal sites and identify new sites to receive, store, dry, and process woody biomass.

	• Assess options for waste to energy opportunities such as: gasification, pyrolysis, combustion/turbine generators, grid tie, non-grid-tied batteries for charging stations and other technology for converting biomass to usable energy. • Explore options for delivering energy to consumers or reducing energy consumption at County facilities.
Engagement Objective:	• Engage commercial producers of woody biomass to understand dumping costs and other issues related to wood chips, cut brush, and non-timber log disposal. • Outreach to farmers to inform them of biochar use in crop fields and gather feedback. • Outreach to garden centers to educate about biochar as a garden amendment. • Create outreach campaign to encourage use of biochar by the public in landscape/gardens.
Partnership Objective:	• Establish partnership plan with agriculture organizations to include growers in the discussions on appropriate and achievable sustainability strategies and data sourcing improvements. • Develop agreements with commercial tree services operating in the county, PG&E, CAL FIRE, Fire Safe Council, Resource Conservation District, timberland owners, and others to deliver biomass for processing and energy/carbon capture.
Funding Objective:	Estimate costs for disposal sites versus waste to energy equipment, and personnel, determine market value of energy/biochar generated, evaluate net program costs, seek funding through grants from CAL FIRE or others to support the program.

18. Increase the urban tree canopy.	
Lead Department: OR3 **Partners:** CDI- Road Maintenance, Environmental Planning & Code Compliance; OR3; Parks	
Feasibility Plan:	• Conduct an urban tree canopy assessment identifying areas of inequity in urban forest. • Identify climate appropriate and resilient tree species, required vegetative management practices and opportunities for implementation. • Update the 1992 Urban Forest Management Plan6.
Code Objective:	Update Significant Trees Protection Ordinance, 16.34, to establish an in-leu fee to mitigate for trees lost through violations or because of development where on-site replacement of trees is not an option.
Partnership Objective:	Work with Parks Department, Community groups and volunteers to identify opportunities for tree planting and maintenance on public and private property.
Funding Objective:	• Establishment of an in-leu fee requiring payment into a fund by utilities such as PG&E, the Regional Transportation Commission (RTC) and developers who remove trees with no place onsite to re-plant, as well as tree removal without permits. • Explore modifications to the CSA 9-E assessment and scope to generate sustaining maintenance funding to supplement general fund money. • Apply for grant opportunities that would fund the increased growth of the urban canopy.

[6] Most recent update to the Urban Forest Management Plan was in 1997.

Wildfire

19. Reduce at-risk communities from wildfire risk through improved forest health management.	
Lead Department: OR3 **Partners:** Agricultural Commissioner	
Implementation Objective:	• Develop a Santa Cruz County Community Wildfire Prevention Plan (CWPP). • Identify and prioritize target locations for large-scale fuel reduction projects such as shaded fuel breaks along with critical evacuation routes and vegetation management standards. • Determine process for developing hazardous fuel reduction plans at the Firewise community and rural neighborhood scale. • Establish countywide goals for development of local Community Risk Assessments and Risk Reduction Plans scaled for Firewise communities and neighborhoods. • Improve carbon sequestering ability of forests by reforesting with more drought-adapted trees able to thrive with expected current and future climate and weather patterns.
Code Objective:	• Adopt a Wildland Urban Interface ordinance including best practices in wildfire prevention to be listed as a "Wildfire Risk Reduction Community" per the CA Board of Forestry. • Explore adoption of a hazardous fuel (HF) reduction ordinance to address HF on private property that poses a threat to neighbors and communities.
Partnership Objective:	Partner with CAL FIRE, County Fire, Central Fire, other fire agencies and partners such as the Resource Conservation District and Fire Safe Council of Santa Cruz County.
Funding Objective:	Apply for grants to fund the creation of Community Wildfire Prevention Plans and fire prevention/forest health grants for hazardous fuel reduction projects.

20. Reduce wildfire risk to structures in at-risk communities	
Lead Department: OR3 **Partners:** County Fire, Fire Districts, Sheriff, Fire Safe Council of SCC	
Implementation Objective:	Develop water infrastructure improvement plan with expanded water storage and delivery for structure fire and wildland firefighting purposes in the Wildland-Urban Interface.
Engagement Objective:	Develop Wildfire Risk Reduction and Mitigation Engagement/Education for Landowners and Residents of the Wildland-Urban Interface (WUI).
Partnership Objective:	• Partner with Fire Safe Council and local water districts serving Wildland-Urban Interface (WUI) residents of Santa Cruz County to deliver programs to communities at risk. • Ensure agencies having jurisdiction complete defensible space inspections. • Partner with the Fire Safe Council to develop a plan to improve effectiveness, visibility, and awareness of Fire Safe Council role in support of community education and preparedness efforts around the home ignition zone (HIZ).
Funding Objective:	• Secure on-going funding source for education programs related to wildfire risk reduction, structural hardening, and water system improvements. • Apply for the FEMA Building Resilient Infrastructure and Communities Grant to support home hardening and defensible space funding for private property owners.

Government Operations

21. Establish all-hazard resiliency community centers across the County	
Lead Department: OR3 **Partners:** Library Joint Powers Authority; OR3; Real Property (inventory of cooling centers)	
Implementation Objective:	• Complete feasibility plan for County libraries to function as all-hazard community resiliency centers, ensuring that locations are in proximity to disadvantaged communities and that the identified sites provide consistent coverage across the county. • Conduct a resource study of library facility buildings to determine the infrastructure necessary for all-hazard resiliency centers, including, but not limited to air filtration, HVAC (air conditioning), and back-up power.
Engagement Objective:	Develop an outreach and engagement plan to inform the community of these resources during extreme heat, poor air quality, public safety power shutoffs (PSPS) and other climate/hazard conditions.
Funding Objective:	Identify and apply for grant funding to install all-hazard equipment.

22. Build and rehabilitate County infrastructure to accommodate extreme weather.	
Lead Department: GSD	
Implementation Objective:	• Develop scoring criteria for construction projects that identify resilience features such as low carbon input materials, e.g., wood and brick, improved insultation, water and energy efficiency, internal courtyards for maximum daylight, multi-use buildings, use of local materials to cut transportation costs and construction plans that maximize manual labor, minimize oil-fueled machines and decrease the carbon footprint in alignment with recent law California Assembly Bill 2446.7 • Analyze cooling requirements for existing large County facilities exposed to significant solar exposure and explore shading solutions to reduce cooling requirements.
Funding Plan:	Identify costs for new construction projects which utilize less greenhouse gas intensive materials and apply for grant funding.

23. Support climate-impacted communities at risk of natural disasters	
Lead Department: OR3	
Implementation Objective:	• Prepare criteria and minimum requirements for the replacement of critical infrastructure and reforestation following a disaster event. • Identify areas where local businesses and service providers can be employed in recovery efforts. • Develop Community Organizations Assisting in Disaster (COAD) support network of local NGOs to support the community during natural or climate disasters.

[7] AB 2446 requires the State Air Resources Board, by July 1, 2025, to develop a framework for measuring and then reducing the average carbon intensity of the materials used in the construction of new buildings, including those for residential uses. The bill would require the state's building sector to achieve a 40% net reduction in greenhouse gas emissions of building materials by December 31, 2035, with an interim target of 20% net reduction by December 31, 2030.

Engagement Objective:	• Ensure that all Emergency Operations staff, at all levels have minimum Incident Commander/Incident Command System training for the role they fill during an emergency. • Conduct annual mock tabletop training sessions to maintain skill set, take inventory of resources, capabilities, engage partner organizations, and keep information current.
Code Adoption Objective:	Develop Disaster Recovery Code package to support rebuilding and temporary housing efforts after an event with significant loss of homes.
Partnership Objective:	Partner with utility providers to have disaster recovery plans that include more resilient infrastructure.
Funding Objective:	Work with the California Department of Housing and Community Development to develop a program to readily access U.S. Department of Housing and Urban Development funds for disaster recovery to cover increased cost of rebuilding more resilient infrastructure.

24. Provide temporary shelter support during a disaster for communities in need	
Lead Department: OR3 **Partners:** Human Services Department	
Feasibility Plan:	• Develop required Memorandum of Understanding (MOU) agreements with existing identified shelter locations and expand capacity of facilities that can support RVs/vans during evacuations. • Develop shelter and evacuation management plans for those impacted during a disaster with specific focus on access and functional needs populations.
Engagement Objective:	Perform tabletop and functional training exercises with County Disaster Service Worker staff on shelter stand-up and operations.
Funding Objective:	Pursue Federal Emergency Management Agency and U.S. Department of Housing and Urban Development funding to pay for program development and implementation.

25. Adapt to community needs and legislative requirements though effective monitoring and evaluation	
Lead Department: OR3 **Partners:** CAO	
Implementation Objective:	Identify resource needs for climate action and adaptation program including administration, evaluation, monitoring, outreach and engagement, local job creation and determine required staffing levels.
Engagement Objective:	Develop a climate action portal to connect stakeholders and the community with actions and programs.
Funding Objective:	Continue to financially support the Climate Policy Internship Program. Identify available funding at next budget cycle to support monitoring and evaluation.

26. Create regional mitigation and resilience programs supported through collective funding opportunities.	
Lead Department: OR3 **Partners:** Regional Climate Project Working Group (RCPWG)	
Implementation Objective:	• Explore aligning County and municipality climate plan cycles and share resources at the regional scale. • Develop RCPWG into functioning JPA or similar governance structure to build regional scale grant funding proposals for climate resilience, mitigation, and adaptation projects.
Funding Objective:	Apply for electrification grants with current RCPWG partners and allocated funding. Pursue joint funding opportunities with local jurisdictions.

27. Youth and families engage effectively with community climate change efforts	
Lead Department: OR3 **Partners:** County Office of Education, HSA	
Implementation Objective:	• Determine if existing targeted programs and resources are being implemented (e.g., resilient neighborhoods program, etc.) and if not, identify and address barriers to implementation. • Develop youth climate intern programs across jurisdictions, partner agencies, and community-based organizations.
Engagement Objective:	• Develop sustaining community education and outreach efforts, focusing on students from under-resourced communities to foster community engagement and provide opportunities to get involved in government and community climate action activities as well as green job opportunities. • Develop plan for community outreach to inform the community of the curriculum's availability and provide opportunities to get involved.
Partnership Objective:	Partner with community-based organizations, non-profits and educators to develop and implement climate action and equity curricula.
Funding Objective:	Work with partners to help secure funding for supporting programs and identify communities with greatest funding needs for participation in resilient community education programs.

28. Reduce the carbon footprint of the food system by reducing waste, promoting climate friendly diets, and diverting excess food to food-insecure communities	
Lead Department: CDI- Recycling and Solid Waste Section **Partners:** Sheriff; HSA, Second Harvest Food Bank of Santa Cruz County	
Implementation Objective:	Assess the sustainability of existing food recovery organizations to divert food from the waste stream and deliver it to people in need.
	The Sheriff's Department will assess ability for jail system meal plan to reduce carbon footprint of food provided. Introduction of meatless Monday's or similar programming.

Engagement Plan:	Develop an education program highlighting how food waste reduction benefits the community, what to do with excess edible food, and how to improve food recovery and food waste recycling.
Code Adoption:	Recycling and Solid Waste Services will work with HSA inspectors to ensure compliance with County Code section 7.20.370.
Partnership Plan:	Develop plan to create closer relationships between CalRecycle-identified mandatory food donors and local food recovery organizations. Plan will address partnerships to facilitate the rapid placement of prepared foods.
Funding Plan:	Continue to participate in the community-wide solid waste task force to pursue additional funding for organic waste infrastructure to help achieve an organic waste diversion target.

29. Engage in State and Federal legislation to achieve climate goals.	
Lead Department: OR3 **Partners:** CAO, BOS	
Engagement Plan:	Engage and lobby with State agencies for criteria and legislation that support the County's climate mitigation and adaptation initiatives.
Partnership Plan:	Leverage efforts by Regional Climate Policy Working Group (RCPWG) to advocate for increased regional funding for climate-based programming.
Funding Plan:	Proactively engage with State climate action and adaptation program administrators to develop successful grant applications.

Appendices

Appendix A - Santa Cruz County Greenhouse Gas Analysis, Forecast and Targets
Appendix B - AMBAG Unincorporated Santa Cruz County 2020 GHG Inventory
Appendix C - Santa Cruz County Climate Vulnerability Technical Compendium
Appendix D - 2022 CAAP Equity Guardrails
Appendix E - 2022 CAAP Strategies - Equity Matrix
Appendix F - Drought Response Outreach Plan