October 26, 2023
Project No: 23-14836
To: Gabriel Elliott Calaveras County
891 Mountain Ranch Road San Andreas, California 95249

RECEIVED
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Calaveras County Planning Department

From: Rincon Consultants, Inc.
4825 J Street, Suite 200
Sacramento, California 95819
916-706-1374

Via email: gelliott@co.calaveras.ca.us

Dear Mr. Elliott:

The following memorandum presents a summary of 1) the greenhouse gas (GHG) emission inventory, forecast, and reference year that provide the basis for the Calaveras County (County) Greenhouse Gas Reduction Plan (GHGRP) 2) the GHG emission reduction measures, including quantification, that are proposed to be included in the County GHGRP and comparison to GHG emissions reduction targets. This document summarizes the results of the joint work effort led by the Sierra Business Council and supported by Harris and Associates and Rincon Consultants, Inc. The results of the County 2018 GHG emissions inventory, 2030 and 2045 forecast, and 1990 reference year are summarized below. GHG emissions reduction measures were developed and quantified based on these GHG emissions metrics. Measures and their associated GHG emissions reduction impact for target years 2030 and 2045 are included below for the energy, transportation, agriculture, solid waste, water, wastewater, and carbon sequestration sectors.[1] The respective GHG emissions reduction impacts are summarized by sector and then aggregated for comparison to the GHG emissions reduction targets for each target year. Full implementation of the presented measures would allow the County to reach the 2030 GHG emission reduction target and make substantial progress towards achieving the 2045 GHG emission reduction target. Future GHGRP measure updates will be required to allow the County to reach the 2045 GHG emission reduction target.

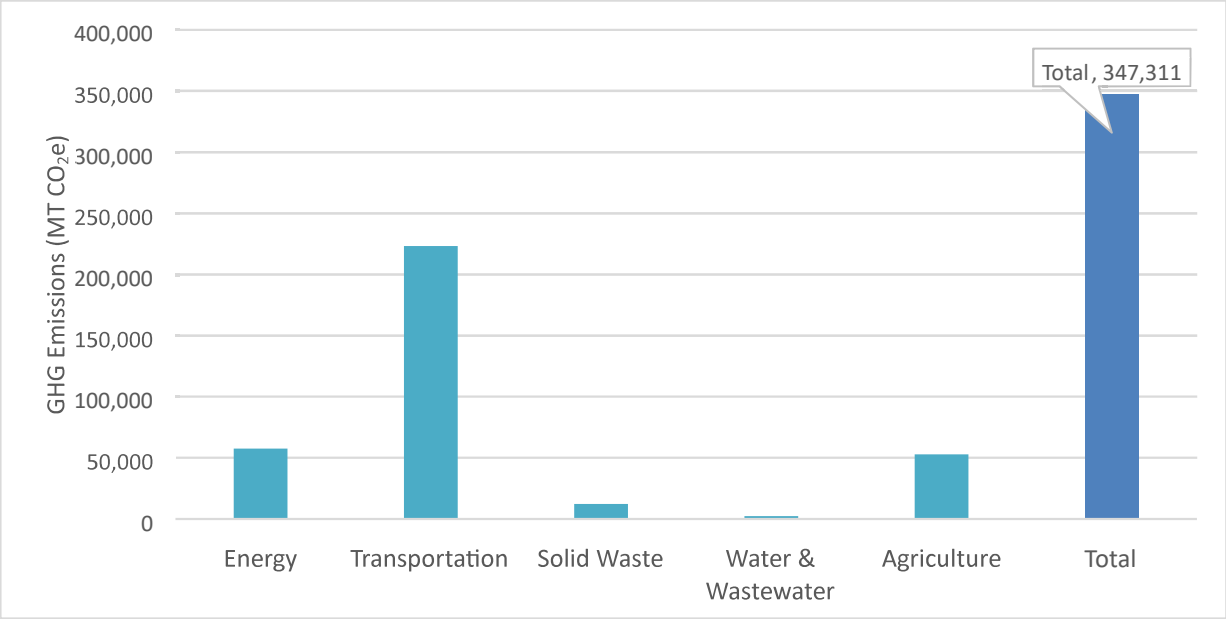
[1] Carbon sequestration refers to the process of capturing, removing, and storing atmosphere carbon dioxide.

2018 GHG Emissions Inventory

The County 2018 GHG emission inventory includes GHG emissions associated with activities that were estimated to occur within the County jurisdictional boundaries during 2018.[2] The inventory reported GHG emissions by source sector, including energy, transportation, agriculture, solid waste, and water/ wastewater. The results indicate that the County emitted 347,311 metric tons of carbon dioxide equivalent (MT C02e) in 2018. Figure 1 presents the results by source sector.

2 A GHG emissions inventory is not a census of emissions but rather an estimated calculation of emissions based on activity units during the identified timeframe and relevant emission factors by sector.

Figure 1 2018 GHG Emissions by Source Sector

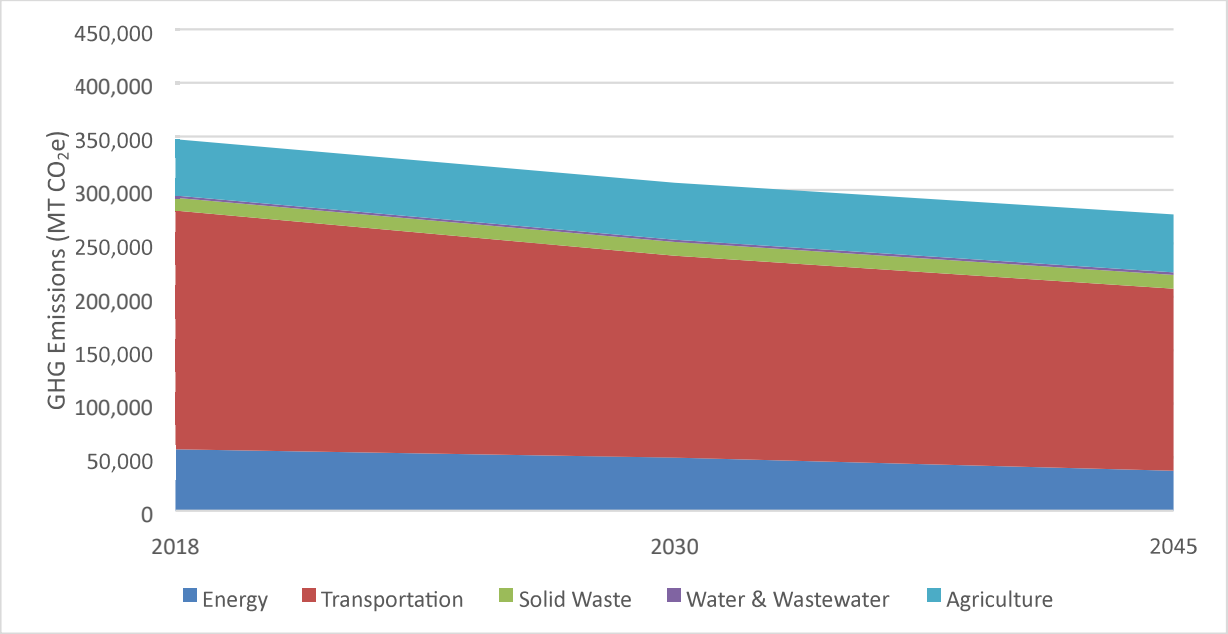


GHG Emissions Forecast between 2018 and 2045

A GHG emissions forecast through 2045 was also developed. The forecast provides a projection of how GHG emissions are expected to change for the County based on two scenarios. The business-as- usual scenario forecasts GHG emissions based on changes in population, employment, and other growth indicators, with all other potential changes (e.g., emission factors, fuel efficiencies) held constant. The adjusted scenario forecasts GHG emissions based on the same growth indicators as the business-as-usual forecast and also adjusts the GHG emissions to take into account assumed implementation of adopted State and federal legislation aimed at reducing GHG emissions through 2045. The adjusted forecast for 2030 totals 306,545 MT C02e and for 2045 totals 276,780 MT C02e. Figure 2 details the trajectory of County GHG emissions by sector through 2045 and represents the adjusted GHG emission forecast.

GHGRP Measures Summary

Figure 2 Adjusted GHG Emissions Forecast



1990 GHG Emissions Reference Year

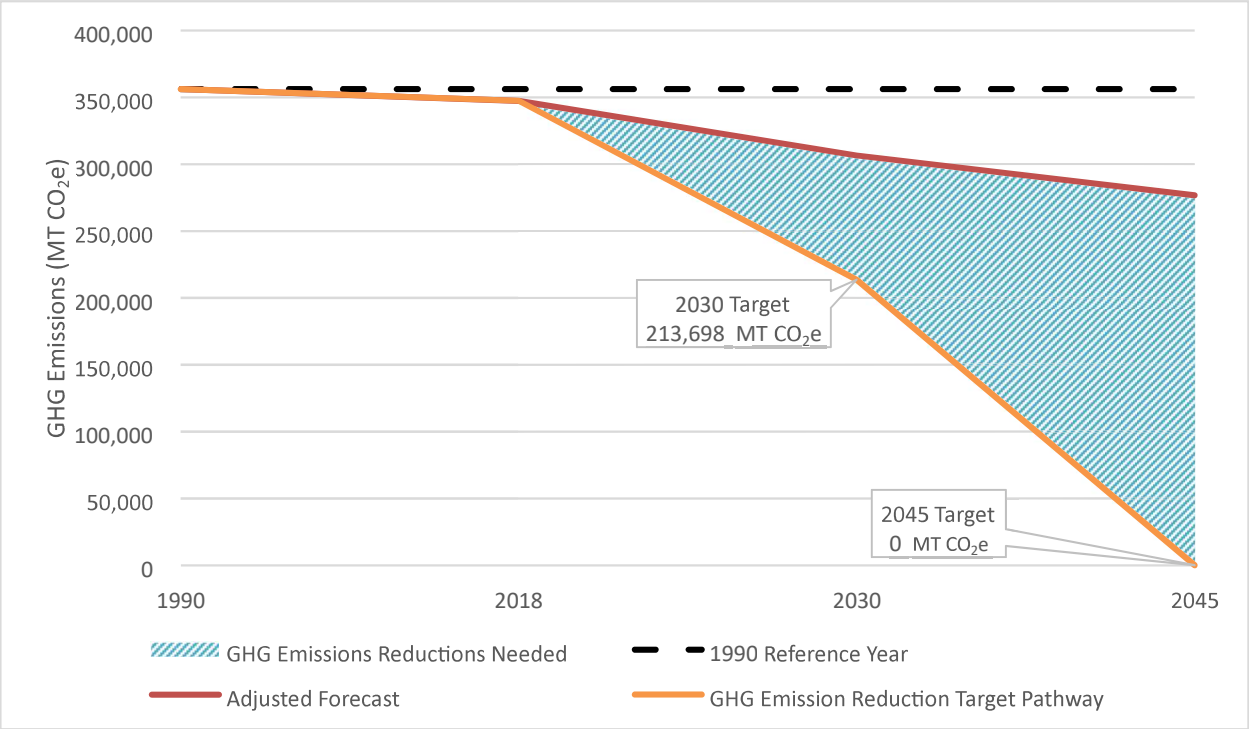
Applicable State legislation refers to GHG emission reduction targets compared to 1990 as a reference year for comparison against which to reduce GHG emissions.[3] There is not a County-specific 1990 GHG emissions inventory that can be used as a reference year from which County GHG emissions can be compared to the State goals. Therefore, County 1990 GHG emissions were estimated using the County 2018 GHG emissions inventory as compared to the known magnitude change in statewide GHG emissions between 2018 and 1990. The County's 1990 reference year GHG emissions were calculated using this methodology and are estimated to total 356,163 MT C02e.

GHG Emissions Reduction Pathway Goal

Based on the County 1990 GHG emission estimate, GHG emission reduction targets consistent with State goals established in Senate Bill (SB) 32 and Assembly Bill (AB) 1279 were developed for the County. Specifically, as part of the County GHGRP, the County will aim to reduce GHG emissions 40 percent below 1990 levels by 2030 and show substantial progress toward achieving carbon neutrality by 2045, consistent with State goals. These reduction pathway targets translate to a GHG emissions reduction target of 213,698 MT C02e by 2030 and net zero MT C02e by 2045. Figure 3 presents the GHG emissions reduction targets relative to the 1990 reference year and adjusted forecast through 2045. The gap between the reduction pathway goal line and adjusted forecast line represents the remaining amount of GHG emissions that the County would need to reduce through local measures to achieve the targets.

[3] Applicable state legislation refers to Senate Bill (SB) 32 and Assembly Bill (AB) 1279, both of which establish GHG targets in comparison to 1990 emissions levels.

Figure 3 GHG Emissions Reduction Pathway Goal Compared to Adjusted Forecast



GHG Emissions Reduction Measures

GHG emissions reduction measures have been developed to allow the County to meet the 2030 GHG emissions target and make substantial progress toward the 2045 GHG emissions target. The following subsections present the measures and their associated GHG emission reduction impact for target years 2030 and 2045. Measures are included for energy, transportation, agriculture, solid waste, water, wastewater, and carbon sequestration. In each sector, measures are either quantitative or supportive defined as:

- **Quantitative:** Quantitative measures result in direct GHG emissions reductions that can be quantified and summed to show how the County will make progress towards and meet its GHG emission reduction targets when implemented.
- **Supportive:** Supportive measures provide support so that the quantitative measures will be successfully implemented. Though these measures could be quantifiable, they are not quantified

  for one of several factors-including a low GHG emission reduction impact, indirect GHG emission reductions, or potential for double-counting-and do not contribute directly to the GHG emission reduction targets.

The last subsection presents the overall GHG emission reduction impact of the measures summarized by sector.

Energy GHG Emission Reduction Measures[4]

Measure RE-1: Increase Community Energy

Convert 14% of existing residential grid electricity and 18% of existing commercial grid electricity to renewable electricity by 2030.

Increase the use of renewable energy in the community and support efforts to increase renewable and carbon-free energy generation, including wind, solar, hydro, and biomass, and to ensure customer access to this renewable energy. Encourage on-site renewable energy generation and storage systems for residents and businesses. Pursue funding to develop a robust renewable energy program that provides outreach, financing opportunities, and technical assistance to residents and businesses. Pursue community renewable energy projects. Work with large energy users to transition towards renewable and zero net energy projects. Pursue distributed energy resources (DERs), microgrids, energy storage opportunities, and grid optimization projects.

Measure RE-1 Greenhouse Gas Reduction Impact (MT CO2e/Year)[5]

	2030	2045
Total	1,418	0

Measure RE-2: Promote On-Site Renewable Energy Generation (Government Operations)

Support efforts on available government-owned land or buildings to increase renewable and carbon-free energy generation, including, wind, solar, hydro, biomass, and others. Promote on-site renewable energy generation and energy storage. Evaluate the renewable energy potential and assess barriers to increased renewable energy generation.

Measure RE-2 Not Quantified[6]

(Supportive of Measure RE-1)

Measure RE-3: Incentives for Alternative Energy

Consistent with Implementation Measures COS-5E and PF-3F of the County's General Plan, pursue funding to provide incentives to facilitate alternative energy projects. Modify the County's development standards and zoning ordinance to provide incentives for providing alternative energy producing facilities compatible with surrounding uses, such as solar arrays in parking lots that serve to provide shade and energy production. Cooperate with and support state and federal programs that assist landowners in energy conservation and production. Support programs that provide incentives for property owners to install alternative energy facilities such as solar arrays, small windmills, and other energy systems.

[4] In consultants' 717/23 draft, County GHG reduction measures and respective quantification was prepared in 2023 by Sierra Business Council. In the current draft, to be presented to the Board of Supervisors, many reduction measures have been amended by the Calaveras Planning Commission; the 7/17/23 quantifications of reduction amounts have not been amended, pending recalculation by the consultants..

[5] Quantification accounts for the impacts of EB-4, EB-3, EB-1, and EO-1, in order of operations. Measures RE-2, RE-3, and RE-4 are supportive of RE-1, and while they could not be quantified separately, they support the reductions associated with RE-1. RE-1 does not contribute to 2045 emissions reductions due to California's Renewable Portfolio Standard, which requires that all of the State's electricity will come from carbon-free sources by 2045.

[6] Measure not quantified because the county government emissions of Measure RE-2 are a subset of community emissions in Measure RE-1.

Measure RE-3 Not Quantified

(Supportive of Measure RE-1)

Measure RE-4: Codes and Standards for Alternative Energy

Consistent with Implementation Measures PF-3A, RP-5A, and RP-2A of the County's General Plan, amend codes to facilitate alternative energy projects. Amend the zoning code to encourage the incorporation of solar, wind, and other alternative energy infrastructure in project design to establish standards for locating and permitting solar farms, wind farms, and other alternative energy facilities to ensure land use compatibility; addressing the potential visual impacts of alternative energy infrastructure to the extent permitted by law. Amend the Calaveras County Code to recognize the development of geothermal resources and their related land uses and refer proposals involving or affecting geothermal resources to the California Department of Conservation Division of Oil, Gas and Geothermal Resources. Amend the County Code to incorporate required findings and procedures for implementing state legislation and Department of Conservation requirements relative to solar-use easements and installations affecting Williamson Act Contracts.

Measure RE-4 Not Quantified

(Supportive of Measure RE-1)

Measure E0-1: Conduct Energy Conservation Outreach and Education

Reduce existing and new residential and commercial energy use (all sources) by 12% in 2030 and 2045 through robust energy conservation outreach and education.

Pursue funding and add staff to conduct energy conservation and efficiency education and outreach to residents and businesses. Support and promote programs for lower-income and disadvantaged populations. Increase awareness of resources and financing opportunities for homes and businesses to (1) replace old appliances with energy-efficient models, (2) conduct retrofits to HVAC systems and building envelope, (3) upgrade to efficient lighting, (4) replace old and inefficient wood- and propane-burning heaters, and (5) add smart controls and sensors. This includes property owners (primary, vacation, and second homeowners), property management groups, and landlords. Through education and outreach, increase participation in voluntary residential and commercial energy efficiency programs. Educate citizens about low- income home weatherization programs (DOE Weatherization Assistance Program, California's Low- Income Weatherization Program, utility-offered Energy Savings Assistance Program, local program). Educate about existing housing rehabilitation loan programs. Partner with the local utilities (PG&E and Calaveras Public Power Agency) to promote existing energy programs for residents and businesses.

Measure E0-1 Greenhouse Gas Reduction Impact (MT C02e/Year)[7]

	2030	2045
Total	4,147	911

[7] The E0-1 quantification accounts for the impacts of EB-4 and EB-3 on existing energy use, and NC-4, NC-1, and NC-2 on new energy use, in order of operations.

Measure EB-1: Establish a Green Business Program

Achieve participation of 5% of businesses in 2030 and 2045 within a Green Business Program. Reduce existing and new commercial energy use (all sources) by 10% in 2030 and 2045.

Establish a green business program that certifies businesses based on criteria such as energy efficiency, employee wellness, water and waste reduction, etc. Benefits to employee wellness could include active transportation, cleaner air, etc.

Measure EB-1 Greenhouse Gas Reduction Impact (MT C02e/Year)[8]

	2030	2045
Total	23	6

Measure EB-2: Improve Building Energy Efficiency of Government Operations

Pursue grants to improve the energy efficiency of existing county buildings and infrastructure whenever a project is undertaken to improve or maintain them. This includes replacement, maintenance or improvement of both interior and exterior lighting systems (streetlight, parking lot lighting, traffic signals, and other outdoor area lighting *and controls*), HVAC and water heating systems (equipment, controls, sensors, etc.), building envelope components (insulation, roofing, glazing, etc.) and other energy improvements. In accordance with General Plan Implementation Measure COS-5M, new and renovated County facilities shall be designed to exceed the requirements of the currently adopted California State Energy and Green Building Codes at the time of project approval. Buildings shall be a minimum of 5% more efficient than required and shall eliminate the use of fossil fuels to the extent feasible.

Measure EB-2 Not Quantified

(Supportive of Measure EB-3)

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[8] The EB-1 quantification accounts for the impacts of EB-4 and EB-3 on existing energy use, and NC-1 and NC-2 on new energy use, in order of operations.

Measure EB-3: Facilitate Energy Efficiency Retrofits

Reduce existing residential and commercial energy use (all sources) by 10% and 15%, respectively, in 2030 and 25% and 30% in 2045, respectively, through energy efficiency retrofits.

The County will pursue funding to help facilitate (i.e., incentivize) energy-efficient upgrades for homes and businesses. Energy efficiency retrofits can include upgrades to lighting, heating, ventilation and air conditioning, appliances, water efficiency, and building envelope (insulation, windows). Consistent with COS-5G of the County's General Plan, cooperate with the CCAPCD to implement emissions reductions programs such as the Carl Moyer Program, and to find methods of incentivizing the replacement or retrofit of small emissions sources throughout the County, such as the replacement of existing wood stoves.

Measure EB-3 Greenhouse Gas Reduction Impact (MT CO2e/Year)[9]

	2030	2045
Total	3,868	1,727

Measure EB-4: Implement an Equipment Time-of-Replacement Ordinance

By 2025, adopt an ordinance that requires residential and commercial fossil fuel-powered space and water heating appliances be replaced with electric alternatives at time of replacement, with exceptions for equipment (1) installed at elevations above 5500 feet, (2) installed in projects permitted under the Limited Density Owner Built Rural Dwelling permit program, or (3) where the electrical service is not available. Review and update ordinance every three years (at time of building code updates) as improved equipment becomes available.

At equipment end of life, replace 45% of existing residential and commercial natural gas and propane water heaters with electric alternatives by 2030 and 90% by 2045 (based on 10-year life and 10% non-compliance). At equipment end of life, replace 23% of natural gas, propane, and wood space heating equipment with electric alternatives by 2030 and 90% by 2045 (based on 20-year life and 10% non-compliance).

Measure EB-4 Greenhouse Gas Reduction Impact (MT CO2e/Year)

	2030	2045
Total	9,748	27,531

Measure NC-1: Incentivize Highly Efficient New Development

Pursue funding to provide incentives (e.g., easing permitting requirements) to new residential and nonresidential development projects for going beyond Title 24 compliance.

Through incentives, achieve participation from 10% of new residential buildings starting from 2025 through 2045. Reduce new residential energy use (all sources) by 53%. Achieve participation from 10% of new commercial buildings between 2025 and 2045. Reduce new commercial energy use (all sources) by 30%.

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[9] The EB-3 quantification accounts for the impact of EB-4, in order of operations.

Measure NC-1 Greenhouse Gas Reduction Impact (MT C02e/Year)[10]

	2030	2045
Total	58	98

Measure NC-2: Incentivize Zero Net Energy New Construction

Incentivize new residential and nonresidential buildings to be built all-electric and highly energy efficient and install renewable energy generation and energy storage systems that can fully offset energy needs.

Achieve participation by 10% of new residential and commercial buildings from 2025 through 2045.

Measure NC-2 Greenhouse Gas Reduction Impact (MT C02ejYear)[11]

	2030	2045
Total	81	192

Measure NC-3: Reduce Criteria Air Pollutants and Emissions from New Development

Consistent with Implementation Measures COS-5F and COS-5H of the County's General Plan, reduce criteria air pollutants, including GHG emissions, from new developments. Evaluate proposed discretionary developments subject to CEQA evaluation to determine whether they will emit criteria air pollutants, including greenhouse gases, exceeding CCAPCD's standards. Should proposed developments within the County be anticipated to result in significant impacts related to the emission of criteria air pollutants, the County shall require the applicable mitigation measures provided in the CCAPCD's Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects.

Measure NC-3 Not Quantified

(Supportive of Measures NC-1 and NC-2)

Measure NC-4: Increase Clean Wood-Burning Appliances

By 2025, adopt an ordinance in alignment with Implementation Measure COS-5N of the County's General Plan that requires all newly installed wood-burning appliances, including stoves and factory-built fireplaces, installed in residential and commercial projects be EPA certified to the most current EPA standards (EPA-Phase 2 certified stoves currently produce no more than 4.5 grams per hour), with an exception for projects permitted under the Limited Density Owner Built Rural Dwelling permit program, listed historic structures or as may otherwise be stated in the most currently adopted Housing Element.

The ordinance shall also require that at end of life or when being replaced, all wood-burning stoves and factory-built fireplaces installed in residential and commercial projects be EPA certified to the most current EPA standards, with an exception for projects permitted under the Limited Density Owner Built Rural Dwelling permit program or as may otherwise be stated in the most currently adopted Housing Element.

[10] The NC-1 quantification accounts for the impact of NC-4, in order of operations.

[11] The NC-2 quantification accounts for the impacts of NC-4 and NC-1, in order of operations.

Measure NC-4 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	28	62

Transportation GHG Emission Reduction Measures[12]

Measure TR-1: Increase EV/ZEV Adoption

By planning, incentives, and pursuit of public and private funding, accelerate growth in numbers of ZEVs (Zero Emissions Vehicles), including EVs (Electric Vehicles), in the unincorporated areas of Calaveras County. As new non-fossil-fuel vehicle technologies develop, provide for refueling/recharging alternatives in addition to battery chargers.

1. Develop and maintain a Calaveras County "grant team" staff to pursue significant funding from public and private sources, including those covered in Measures TR-6 through TR-10, to upgrade the EV charging and alternative fueling infrastructure, including staffing to support it, to facilitate a robust ZEV network in the County and to assist in and accelerate acquisition of ZEVs.
2. As funding is secured, install 99 new publicly accessible plug-in electric vehicle (PEV) charging ports, including at least five DC fast chargers, by the end of 2025 to support the resident and visitor demand projected in the Central Sierra Zero Emission Vehicle Readiness plan (CSZEVRP).
3. Pursue funding to develop and carry out a Zero Emissions Vehicle Infrastructure Implementation Plan to determine the number and location of additional publicly available Level 2 (240V) EV chargers and DC Fast chargers, as well as private EV chargers, which, combined with the chargers provided in TR-1.2, will be sufficient, by 2030, to serve 15,000 ZEV vehicles on an ongoing basis in unincorporated areas of Calaveras County. In developing that plan, consider the EV charging locations recommended in the CSZEVRP, including EV charging infrastructure for visitors at the recommended resorts/lodging locations, DC fast chargers at the recommended highway corridor locations, and EV charging stations (EVCS) at other recommended locations.
4. Amend the Calaveras County Zoning Code to provide ZEV incentives to encourage adoption and use of ZEVs. PF-3B. Keep incentives up to date to accommodate new developments of non-fossil-fuel vehicle alternatives to EVs.
5. Develop and adopt an EV charging infrastructure reach code applicable to new or remodeled commercial development with a total of ten or more parking spaces; under the reach code, require a percentage of all parking spaces to have EV chargers available: at least 30% if Level 2 chargers; at least 5% if DC fast chargers.
6. Consistent with the Calaveras Streamlined Permitting Guidebook of the CSZEVRP, develop and maintain an expedited, streamlined permitting process for electric vehicle charging stations in accordance with AB 1236 and employ the example Plug-in EV Infrastructure Permitting Checklist in the Guidebook to assess installation projects for expedited review.
7. Engage the local business community to site EV infrastructure (especially businesses that rely on tourism and business travelers) and to develop and implement a plan for County- supported accelerated business fleet electrification in partnership with the PG&E EV Fleet program.
8. Support and partner with ZEV car share companies in coming to the County.
9. As part of the Zero Emissions Vehicle Infrastructure Implementation Plan (see TR-1.3), support the regional transportation planning agency in creating a Regional Zero Emissions Vehicle Infrastructure Collaborative. Participate in the program to collaborate on infrastructure deployment and to increase buying/negotiation power.
10. Coordinate with County communities-based organizations, agencies, and nonprofits to conduct zero-emission vehicle (ZEV) education events for residents and business owners and all county employees to promote benefits and programs such as the Clean Vehicle Rebate Program.

[12] In consultants' 7/17/23 draft, county GHGRP transportation GHG reduction measures and respective quantification was prepared in 2023 by Rincon. In this draft presented to the Board of Supervisors, considerable reordering and redrafting has been done by the Planning Commission; no adjustment to the quantification of GHG reductions has yet been made, pending consideration by the consultants.

11. Work with the CCAPCD to pursue funding to develop a passenger clean vehicle and charger acquisition program for all residents, with emphasis on low-income residents, of the unincorporated areas of Calaveras County to assist in purchasing ZEVs and installing chargers. Also work with the CCAPD to pursue funding to assist businesses and organizations in installing publicly available chargers.

Measure TR-1Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Passenger EV/ZEV	25,403	45,546
Commercial EV/ZEV	14,097	13,058
Total	39,500	58,604

Measure TR-2: Decarbonize the County Municipal Fleet and Employee Commute

Lead by example by pursuing funding todecarbonize the Calaveras County municipal fleet and related commuter vehicles to achieve a 40% ZEV fleet by 2030.

1. Adopt a County requirement that requires that new and replacement County municipal fleet vehicle purchases are EVs or ZEVs where feasible.
2. Conduct a study to determine total turnover time frame of County municipal fleet vehicles to EVs or ZEVs.
3. Secure funding from programs such as the California Air Resources Board's Clean Vehicle Rebate Project, Clean Cars 4 All Program, and the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Program to increase procurement of EV or ZEV cars, trucks, and other vehicles and installation of EV/ZEV charging/fueling infrastructure at County facilities.
4. Allow eligible County employees to telecommute, with a target rate of 25% of eligible staff time telecommuting by 2030.

Measure TR-2 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Municipal Fleet	790	1,974
Employee Commute	696	1,770
Total	1,486	3,744

Measure TR-3: Increase Public Transit Mode Share

Pursue funding to develop a robust public transportation network consistent with Pitkin County's (CO) Roaring Fork Transportation Authority that employs ZEV buses, demand-responsive transport options, and ZEV ridesharing to increase Calaveras County public transit mode share to 6% by 2030.

1. Conduct a study to identify specific and systematic gaps and barriers to mobility and access in the current public transit system. Include direct outreach to members of disadvantaged communities, commuters, tourist destinations, and other underserved groups.
2. Establish a regional transportation system that uses Pitkin County's Roaring Fork Transportation Authority's services as a model to serve all Calaveras County residents and visitors through a connected network of express and local fixed-route bus services, regional commuter services, public tourist shuttles, on-demand shuttles/microtransit, consistent active transportation connections (e.g., bike racks) and coordinated first-last mile commuting options that may include micromobility options.
3. Establish an EV rideshare program (similar to "Green Raiteros") that allows for people with limited mobility options to rent a vehicle or request a ride in an electric vehicle for low cost.
4. In accordance with Calaveras County General Plan Implementation Measure C-3A, establish Park and Ride facilities at locations convenient for commuters, residents, and visitors to transfer from a single occupancy vehicle to a transit buses, commuter services, shuttles, or EV rideshare vehicles. Incorporate planned Park and Ride facilities into the Zero Emissions Vehicle Infrastructure Implementation Plan (see TR-1.3 above) to outfit the facilities with sufficient EV/alternate fueling infrastructure.
5. Rely on significant funding from Measures TR-6 through TR-10 to fund a regional transportation system that is consistent with Pitkin County's RFTA services and build an EV charging infrastructure network to support the EV rideshare program.
6. Expand the Calaveras Transit Agency to plan for, develop and operate the regional transportation system. Employ technical assistance from the National Rural Transit Assistance Program and create a public transportation working group to provide the County expertise and community input.
7. Identify partners such as CCOG to develop, oversee, and manage the transit and EV rideshare program.
8. Implement a promotion and education campaign to inform the community of the availability of the EV rideshare program and available transit routes and options. This may include but is not limited to: tabling at community events, bilingual mailers, social media posts, direct engagement with employers, and partnerships with Google Transit or a mobile application developer to bring real-time maps and schedules to residents and visitors.
9. Prioritize EV rideshare program implementation in low-income communities and develop pricing plans that make the public transportation system and EV rideshare program affordable for low-income residents.

Measure TR-3 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	11,376	26,769

Measure TR-4: Increase Active Transportation Mode Share

Increase active transportation mode share within Calaveras County by 1%, to a total of 4%, by 2030.

1. In accordance with Calaveras County General Plan Implementation Measure COS-7E, support and participate in efforts (such as an annual collision review) to update the bicycle and pedestrian master plan for biking, walking, riding, hiking/non-motorized and motorized transportation. The updated plan(s) shall identify existing and proposed facilities to assist in integrating future development into regional trail networks, tie trail systems to commercial centers and tourist destinations, identify locations for new trailheads and trail access points, and connect trail heads with public transportation systems.
2. In accordance with Calaveras County General Plan Implementation Measure C-5A, implement priority projects of the updated bicycle and pedestrian master plan as funding allows and prioritize the development of projects in disadvantaged communities within the County.
3. Pursue additional funding to construct bikeway and pedestrian system connections within Calaveras County and connecting to City of Angels Camp, nearby counties, state, and federal infrastructure through integration of bicycle facilities as part of other roadway construction projects.
4. In accordance with Calaveras County General Plan Implementation Measure COS-7*B*, establish standards for when and how new residential subdivisions shall provide bicycle and pedestrian facilities and amend the Calaveras County Code accordingly. In accordance with Calaveras County General Plan Implementation Measure COS-5M, (a) where residential subdivisions are located within walking distance of facilities such as schools, parks, banks, grocery stores and restaurants, they shall be designed to include pedestrian access to such facilities to the extent practicable; (b) where feasible, residential subdivisions shall be designed to encourage alternate forms of transportation, including but not limited to sidewalks, trail systems, bike paths, and other measures connecting to existing development.
5. Rely on funding from Measures TR-6 through TR-10 to implement projects from the updated bicycle and pedestrian master plan.
6. Work and collaborate with local organizations and agencies, such as CCOG and City of Angels Camp, to promote bicycle and pedestrian travel as well as the updated bicycle and pedestrian master plan.
7. Coordinate with County community-based organizations, agencies, and nonprofits to conduct bicycle and pedestrian education events for residents and business owners.
8. Establish a Calaveras County Green Streets Program to improve the walkability of streets by providing increased shade cover and increased carbon sequestration potential.
9. In accordance with Calaveras County General Plan Implementation Measure C-18, favorably consider projects which minimize greenhouse gas impacts and are appropriate to the rural nature of the County, including transit programs, ridesharing programs, and bicycle and pedestrian improvements.
10. In accordance with Calaveras County General Plan Implementation Measure C-1C, consider transit capital improvements and non-auto travel improvements necessary to serve new development in impact fee programs to fund public transportation infrastructure, park-and-ride lots, and bicycle and pedestrian facilities associated with the new development.

Measure TR-4 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	187	428

Measure TR-5: Decarbonize Off-Road Equipment and Vehicles

Pursue funding for decarboniz*ation* (i.e. electrification or conversion to biofuel) *of* sufficient off-road equipment and vehicles in the unincorporated areas of Calaveras County to reduce their combined carbon fuel use by 30% by 2030. As new non-fossil-fuel technologies develop, provide for any new clean alternatives to off-road fossil-fuel vehicles and equipment.

1. Create a phased ordinance by the end of 2024 to reduce in stages to zero the local operation of gasoline and diesel- powered off-road equipment by type; also provide in the ordinance that, when sufficient funding is obtained to fund effective incentives (such as payments for equipment turned into the County upon proof of purchase of non-fossil fueled replacement equipment), local operation of small off-road engines (SORE)[13] that are of the types subject to regulation by the California Air Resources Board shall be phased out by 2030. For those off-road diesel vehicle and diesel equipment types that cannot be decarbonized (i.e., electrified or converted to biofuel) in the short-term, include a requirement for the use of renewable diesel (e.g., RD99, which is a drop-in renewable fuel and readily available on West Coast).
2. Pursue funding to establish and carry out an enforcement and implementation program to track transition of off-road equipment across the unincorporated areas of the County.
3. Pursue funding to conduct an assessment of off-road equipment and vehicles in the unincorporated areas of the County to determine feasible phases for the ordinance, identify fleets with high decarbonization potential and operators that will require targeted support to decarbonize, and identify available electric/biofuel options for each type. The assessment shall include direct outreach to such operators, including those with recreational boats and agricultural/forestry equipment and vehicles.
4. Pursue funding to create an Off-road Equipment Replacement Program to work directly with operators identified in Action TR-5.3 to decarbonize their off-road equipment and vehicles. The program shall include but not be limited to free consultations with fleet operators to identify equivalent alternatives to fossil-fueled off-road equipment, direct support to obtain rebates and incentives, and connect them with qualified local repair services to maintain the replacement equipment.
5. In accordance with Calaveras County General Plan Implementation Measure COS-5G, work with the CCAPCD to pursue funding from the Carl Moyer Program and rely on funding from Measures TR-6 through TR-10 to support off-road decarbonization efforts via transition to all-electric and/or bio-fuel off-road equipment and vehicles.
6. Pursue funding to work with the CCAPCD to develop and conduct a rebate and incentive program for upgrading off-road equipment and vehicles and switching to electric or biofuels. Develop the program with a focus on procedural equity and prioritize funding distribution to members of disadvantaged communities.

[13] Small off-road engines ("SORE") are spark-ignition engines with rated power at or below 19 kilowatts (25 horsepower), including the specific equipment types listed as regulated in the Air Resources Board's "SORE Applicability Fact Sheet." Under current state regulations, as of 2024 most newly manufactured SORE engines cannot have any GHG emissions. See "CARB approves updated regulations requiring most new small off-road engines to be zero emission by 2024."

7. Develop a multi-lingual Off-road Equipment Replacement Outreach Campaign that educates fleet operators on the public health and safety benefits of alternative equipment technology and connects them with the Off-road Equipment Replacement Program.

8. Work with electric off-road equipment manufacturers (such as Solectrac and Monarch) to host workforce development workshops to train local agricultural equipment repair shops to service electric off-road equipment and off-road equipment utilizing biofuels and renewable diesel.

9. Partner with the CCAPCD to establish the enforcement and implementation program, create the Off-road Equipment Replacement Program, pursue funding, and develop the rebate and incentive program.

Measure TR-5 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	7,787	17,362

Measure TR-6: Create a Tourism Economy

Work to develop a tourism economy within Calaveras County to help fund the decarbonization of the transportation sector.

1. Reallocate the tourism/hotel tax with revenue earmarked for the decarbonization of transportation within Calaveras County.

2. Develop a plan to help brand and market Calaveras County as a sustainable tourist destination and conduct a study to determine the price options and applicability for the tax.

3. Secure funding from the Visit California's Rural Marketing Program to market Calaveras County as a sustainable tourist destination.

4. Partner with the Calaveras Visitors Bureau to secure funding from Visit California's Rural Marketing Program and partner with both the Calaveras Visitors Bureau and existing members of the County tourism industry to develop the plan, develop the tax, and implement the marketing efforts.

5. Work with partners and businesses to implement the plan/marketing campaigns to market Calaveras County and appropriate local businesses as sustainable tourist destinations.

6. Directly engage members of disadvantaged communities in the development of the plan and tax to understand and plan for equity concerns.

Measure TR-6 Not Quantified

(Supportive of Measures TR-1 through TR-5)

Measure TR-7: Establish Calaveras County as a Pilot Program

Partner with the Rural County Representatives of California (RCRC) to establish Calaveras County as a pilot program for the decarbonization of the transportation sector in rural communities.

1. Establish a regional community foundation with neighboring rural communities to fund the decarbonization of the transportation sector in rural California.

2. Develop a vision and strategy for the regional community foundation to serve as a first-mover/pilot in the State in the decarbonization of America's rural transportation systems.

3. As a first-mover in rural America, pursue funding from large philanthropy such as the Bezos Earth Fund, Rockefeller Foundation, Bill & Melinda Gates Foundation, etc. to fund the development of a Calaveras County decarbonized rural transportation system.

4. Advocate for and promote the regional community foundation as a first-mover in the decarbonization of America's rural transportation systems to the Federal Government and state and regional governments and philanthropic organizations.

5. Directly engage members of disadvantaged communities in the development of the vision and strategy to convey a clear vision that aims to benefit all members of rural communities.

6. Partner with the Rural County Representatives of California (RCRC) and/or other regional organizations to develop the foundation, advocate for the foundation, lobby state and federal agencies for funding, and establish a network of private and public partners/members.

Measure TR-7 Not Quantified

(Supportive of Measures TR-1 through TR-5)

Measure TR-8: Develop a Biofuel Industry

Partner with local utilities and state agencies to develop a biofuel industry throughout Calaveras County to fund decarbonization of the transportation sector.

1. Establish a memorandum of understanding with PG&E, CARB, CAL FIRE, the California Department of Agriculture, forest owners, and waste management companies to establish a plan to manage biomass and organic waste through the development of biofuel infrastructure in the County to position Calaveras County as a first mover in active forest management to support a carbon-free future for California.

2. Identify or create zoning designations whose definitions allow biofuel generation facilities; identify specific properties throughout the County for development of biofuel generation facilities.

3. Partner with PG&E and state agencies to develop a green bond to help fund the development of biofuel infrastructure in Calaveras County and explore revenue options through the Low Carbon Fuel Standard.

4. Work with local utilities and state agencies to pursue grants earmarked for biofuel infrastructure from the Inflation Reduction Act.

5. Establish partnerships with organic waste haulers to collect biomass from forests and biowaste from residential and agricultural sources, and partnerships with forest service businesses/property owners to sustainably clear fuel from forests.

6. Establish a campaign to educate the forestry services, waste haulers, and the community on the economic and wildfire risk benefits of active forest management for bioenergy and establish a working group/committee to involve local community members and businesses in the planning process.

7. Pursue funding to create workforce development programs to train the County local workforce for biofuel jobs. Specifically target training towards members of disadvantaged communities and establish criteria in the planning process that prioritizes/requires the employment of County residents and businesses in the industry.

Measure TR-8 Not Quantified

(Supportive of Measures TR-1 through TR-5)

Measure TR-9: Pursue State Funding

Establish Calaveras County as a pilot program for a rural carbon-free transportation system through state investment and grants such as California Climate Investments.

1. Develop a report highlighting the unique opportunity for Calaveras County to become a pilot for the decarbonization of rural transportation systems in California.
2. Pursue funding from California Climate Investments (CCI) and develop an investment program with private partners, including local utilities and local employers, to secure local match funding for the grants.
3. Partner with local agencies such as the Calaveras County Air Pollution Control District (CCAPCD) and Calaveras Connect to plan for, secure, and implement CCI grant funding.
4. Directly engage members of disadvantaged communities to analyze and convey transportation barriers in the report development.

Measure TR-9 Not Quantified

(Supportive of Measures TR-1 through TR5)

Measure TR-1O: Pursue Federal Funding

Pursue federal funding from federal programs, such as the Charging and Fueling Infrastructure Discretionary Grant Program, to decarbonize the transportation sector.

1. With such funding, develop the Zero Emissions Vehicle Infrastructure Implementation Plan *(see TR-1.3 above)* with a focus on expanding access to EV infrastructure disadvantaged communities, and in low- and moderate-income neighborhoods.
2. Secure significant funding from the Charging and Fueling Infrastructure Discretionary Grant Program community grants by leveraging the Zero Emissions Vehicle Infrastructure Implementation Plan and County ability to expand access to EV infrastructure within rural areas and low- and moderate-income neighborhoods~~.~~
3. Partner with the Federal Highway Administration (FHWA) California Division, California Local Technical Assistance Program (CA LTAP), and/or the Governor's Office of Planning and Research (OPR) to obtain technical support and train staff to develop a successful federal grant application.
4. Develop an Equity First Program to provide early funding opportunities for members of disadvantaged communities~~,~~ and low- and moderate-income neighborhoods.

Measure TR-10 Not Quantified

(Supportive of Measures TR-1 through TR-5)

Agriculture GHG Emission Reduction Measures[14]

Measure AG-1: Increase Crop Production Efficiency and Soil Health

Pursue funding to increase crop production efficiency and soil health to reduce associated GHG emissions 30% by 2030.

1. Improve fertilizer efficiency (increase in harvest yield per unit of nutrient supplied by fertilizer and liming material) across the County and monitor via soil test and soil pH reporting to understand which County crop fields are the most productive.
2. Adopt grazing best management practices, as set forward by the University of California Cooperative Extension, that enhance soil nutrition and increase carbon sequestration.
3. Stop or limit the loss of nutrients from the planted areas during top watering in an open system, including by containing irrigation effluent.

[14] In consultants' 7/17/23 draft, County GHGRP agriculture GHG reduction measures and respective quantification was prepared in 2023 by Rincon. In this draft presented to the Board of Supervisors, some redrafting has been done by the Calaveras Planning Commission; no adjustment to the quantification of GHG reductions has yet been made, pending recalculations by the consultants. Quantification of the reduction resulting from the addition of AG-1.9 has been requested.

4. Conduct a study regarding which agroforestry methods (riparian forested buffers, silvopasture [planting of shrubs and trees in conjunction with crops and grazing], oak woodland establishment) would work best for County farmers in terms of climate mitigation practices.

5. Work with the California Air Resources Board (GARB) regarding its proposed crop-based carbon offset protocol to allow County farmers to earn additional revenue for reducing GHG emissions associated with cultivation.

6. Partner with the University of California Cooperative Extension (UCCE) Central Sierra and the Calaveras County Agricultural Commissioner to work directly with farmers to educate and encourage regarding best practices in fertilizer efficiency and pest management detailed in the University of California Agriculture and Natural Resources (UC ANR) Nutrient Management Resources and Knowledge Sharing Tools for the California Agricultural Community.

7. Develop an educational campaign to share the most recent research and best practices with County farmers regarding most efficient fertilizers and technologies and how to match fertilizer application with plant nutrient needs as the plant grows.

8. In coordination with UCCE (see AG-1.6 above) and the County Agricultural Commissioner, provide assistance to smaller farmers for developing applications to soil and fertilizer grant programs such as the California Department of Agriculture Healthy Soils Program Incentive Program.

9. Partner with farming groups, academic institutions and the Calaveras County Resource Conservation District, to review and implement suggestions in the State's Healthy Soils Initiative, which facilitates the management of farms and ranches specifically for carbon sequestration and other benefits such as increased water holding capacity and soil fertility, including the Healthy Soils Program of the State's Sustainable Agricultural Lands Conservation Program.

Measure AG-1 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	2,483	5,444

Measure AG-2: Implement Livestock Manure Management Strategies

Pursue funding to implement livestock manure management strategies to reduce associated GHG emissions by 10% by 2030.

1. Conduct a detailed countywide inventory of livestock and manure management practices to better understand and track GHG emissions from livestock and manure management practices.

2. Develop and implement a program for local farmers to purchase composted poultry manure and used bedding for use in fertilizing pasture and crops.

3. Pursue available state and federal energy efficiency grants to develop a revolving low-interest loan program that will provide funding for the construction of methane digesters where feasible.

4. Investigate and pursue funding sources, such as California Department of Food and Agriculture's Healthy Soils Initiative, to increase the application of livestock manure compost on rangelands, which in turn will increase carbon capture and storage in soil.

5. Provide assistance to Calaveras County farmers regarding how to apply for financial assistance through the Alternative Manure Management Program (AMMP) from the California Department of Food and Agriculture (CDFA), which provides funding to farmers

implementing non-digest manure management techniques.

6. Utilizing CDFA guidance, develop education and outreach materials around grazing practices that sequester carbon.

7. Partner with the University of California Cooperative Extension Central Sierra and the Calaveras County Agricultural Commissioner to work directly with farmers on understanding and implementing manure management best practices and reduction of the associated GHG emissions as detailed in the EPA's AgSTAR Practices to Reduce Methane Emissions from Livestock Manure Management.

8. Create an ordinance applying GHG reduction measures to any new feed lot, dairy farm or similar operation.

Measure AG-2 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	629	2,514

Measure AG-3: Reduce Methane Emissions from Livestock

~~R~~eduction of methane emissions from livestock enteric fermentation 20% by 2030, for Calaveras grazing.

~~R~~educ~~e~~ methane emissions from livestock enteric fermentation 20% by 2030~~.~~

1. Investigate and promulgate grassland management strategies to improve feed digestibility and feed quality appropriate to Calaveras grazing operations and conditions.

2. Work with the University of California Cooperative Extension to conduct a study regarding balancing and fine-tuning livestock feed rations within the County, which in turn leads to less livestock enteric fermentation.

3. Annually conduct research on any upcoming grant funding opportunities to reduce enteric fermentation emissions.

4. Provide information and resources on the County Agricultural Commissioner website to inform farmers on optimizing feed digestibility/availability and pasture management practices, and how that translates into less livestock enteric fermentation emissions.

5. Partner with the University of California Cooperative Extension Central Sierra and the Calaveras County Agricultural Commissioner to work directly with farmers to understand

the beneficial nature of food additives on enteric fermentation and help implement food additive techniques to reduce enteric fermentation emissions.

Measure AG-3 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	7,721	13,512

Solid Waste GHG Emission Reduction Measures[15]

Measure SW-1: Organic Waste Diversion

In accordance with General Plan Conservation and Open Space Element Air Quality/Greenhouse Gases Measures COS-5D and COS-5E, the County will implement waste management practices to support organics diversion. Programs will include: (1) providing green waste collection programs at County operated landfill and transfer stations when feasible (COS-5D); (2) utilizing public/private partnerships to utilize green waste in alternative uses and waste to energy facilities (COS-5D); and (3) including a review of the zoning ordinance and Air Pollution Control District regulations and amendment as necessary to facilitate the development of green waste to energy projects and other projects that convert green waste to products (COS-2E). Programs may also include investigating and incentivizing community composting hosted by individuals and organizations. In addition, the County will coordinate with individuals, community groups, and publicly funded and privately managed recycling and composting providers to educate the public about the benefits of composting. Through a combination of these programs, the County will divert 75 percent of food and green yard waste from landfills to home & community-based composting facilities, bio-mass plants, & other local facilities to reduce short-lived climate pollutants and minimize transportation-related emissions compared to existing conditions.

Measure SW-1 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	2,924	3,007

Measure SW-2: Diversions to Rock Creek Landfill

The County will divert an additional 5 percent of total Calaveras County solid waste disposal from other landfills to Rock Creek Landfill, to the extent Rock Creek Landfill has the capacity to receive this diverted material.

Measure SW-2 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	7	8

[15] In consultants' 7/17/23 draft, county GHGRP solid waste GHG reduction measures and respective quantification was prepared in 2023 by Harris and Associates. This draft, prepared for the Board of Supervisors, contains revisions by the Calaveras Planning Commission; no adjustments have yet been made to the quantifications of GHG reductions.

Measure SW-3: Methane Capture

The County will continue to manage Rock Creek Landfill to limit methane release and pursue funding to identify and implement measures sufficient to achieve an average increase in methane capture of 1 percent for all waste types by 2030.

Measure SW-3 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	67	69

Water and Wastewater GHG Emission Reduction Measures[16]

Measure W-1: Use of Reclaimed (Non-Potable) Water

In accordance with General Plan Public Facilities and Services Element Water and Wastewater Measures PF-2G, PF-2H and PF-2I, the County will (1) work with local water and wastewater agencies and provide land use or other data in the County's possession where such data will provide information necessary to prepare and update water and wastewater master plans, agency master plans and similar water and wastewater planning documents, including strategies for increasing energy efficiency (PF-2G); (2) amend the County Code to recognize appropriate uses for reclaimed water as an alternative for various land uses and keep apprised of the latest developments in the use of reclaimed water and revise the County's landscaping standards and incorporate those standards as conditions of project approval to facilitate the use of gray water and reclaimed water systems for landscape irrigation (PF-2H); and (3) work with wastewater service providers to expand the use of recycled wastewater for agricultural uses (PF-2I). Pursue funding for the County *to* work with local and regional agencies to create incentives and rebates for greywater systems, composting toilets, or other residential retrofits. Through a combination of efforts, the County will achieve a 10 percent reduction in total potable water use.

Measure W-1 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	92	97

Measure W-2: Increase Efficiency of Plumbing Systems in New Construction

Research, identify, and quantify measures to be included in a new ordinance to be adopted by 2025 that will reduce potable water usage in new residential and commercial projects by 5% over code minimum designs in alignment with Implementation Measure PF-2G of the County's General Plan. Such measures may include compact plumbing design requirements, alternate pipe sizing methods and materials, gray water systems, additional landscape irrigation controls, and lower flow plumbing fixtures if commercially and readily available at the time of drafting of the ordinance.

Measure W-2 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	67	68

[16] In consultants' 7/17/23 draft, county GHGRP water and wastewater GHG reduction measures and respective quantification was prepared in 2023 by Harris and Associates. This draft, prepared for the Board of Supervisors, contains revisions by the Calaveras Planning Commission; no adjustments have yet been made to the quantifications of GHG reductions.

Carbon Sequestration GHG Emission Reduction Measures[17]

Measure CS-1: Conserve and Preserve Natural and Working Lands

Pursue funding to Increase carbon sequestration within the unincorporated areas of the County and continue to conserve and preserve natural and working lands. Such funding to support the following measures:

1. Collaborate with the Calaveras County Resource Conservation District and local property owners (such as the California Rangeland Trust, State of California and U.S. Forest Service) to identify and achieve carbon farming, forest management, and rangeland management opportunities to sequester carbon within the County.
2. Reduce by 20 percent the rate of conversion into developed properties of undeveloped land and land used for agricultural purposes.
3. Actively promote carbon sequestration techniques, as outlined in the Sustainable Agricultural Lands Conservation Program under the California Department of Conservation.
4. Track development at the state level pertaining to sequestration of natural and working lands, including through the California Air Resources Board's (CARB's) Natural and Working Lands GHG Inventory and the multi-agency California 2030 Natural and Working Lands Climate Change Implementation Plan.
5. Examine and implement the key recommendations for successful implementation outlined in the California 2030 Natural and Working Lands Climate Change Implementation Plan, including working with multiple partners; augmenting state funding and resources; coordinating cross-agency implementation; prioritizing capacity building, technical assistance, and collaborative planning; recognizing restoration and building workforce capacity; investing in education and outreach; leveraging cross-sector interactions; supporting ongoing research; and considering and measuring non-carbon co-benefits.
6. Explore and apply innovative techniques to increase carbon sequestration on agricultural land, including but not limited to montane meadow restoration, oak woodland restoration, chaparral and shrubland restoration and management, agroforestry, grazing land, grassland and cropland management, crop covering, mulching, reduced or no-till practices and planting of windbreaks.
7. Form a committee, similar in nature to the Agricultural Advisory Committee, or use an existing committee, to work with CARB and other participating agencies to identify and implement actions to maximize the use of the County's natural and working lands, including exploration of funding opportunities such as green loans, mitigation and carbon banking or pursuit of grant funding.
8. Work with regional partners such as Calaveras Foothills Fire Safe Council to explore reuse opportunities for cleared forest residue.
9. Implement forest management activities from the California 2030 Natural and Working Lands Climate Change Implementation Plan, including avoiding forest conversion to other uses with less sequestration; clearing understory; vegetation management; fuel breaks; prescribed burns; partial cutting and/or thinning; enhanced biomass utilization; expansion of reforested areas; restoration of all habitats; urban forest expansion; silvopasture; and prescribed grazing, among others outlined in the plan.

[17] In consultants' 7/17/23 draft, county GHGRP carbon sequestration GHG reduction measures and respective quantification was prepared in 2023 by Rincon. This draft, prepared for the Board of Supervisors, contains considerable revisions by the Calaveras Planning Commission, many adapted from Butte County's Climate Action Plan, wherein reductions were quantified. No revisions have yet been made to the quantifications of GHG reductions; the Planning Commission has asked the consultants to quantify the reductions that would result from revised measure CS-1.

10. In accordance with Calaveras County General Plan Implementation Measure RP-1F, establish mitigation program guidelines for the impacts caused by conversion of land designated Resource Production on the General Plan Land Use Map to another non-resource production land use. The guidelines shall include, at a minimum, the following alternatives:

    - Acquisition of a conservation easement located within Calaveras County at a 1:1 ratio
    - Purchase of banked mitigation credits for use by a land bank operating in Calaveras County for use within the county
    - Payment into a fund to restore, enhance and improve Resource Production designated land. The fund would be managed by the committee designated under subparagraph 7 above. Use of the fund would be determined by the Board of Supervisors with input from said committee, the Calaveras County Resource Conservation District, the University of California Cooperative Extension Office, the Agricultural Advisory Committee, and local landowners.
    - On-site mitigation
    - Other mitigation measures developed and/or approved by the County.

11. In accordance with Calaveras County General Plan Implementation Measure RP-2F, continue to maintain an Agricultural Advisory Committee to review and recommend action to the Board of Supervisors concerning California Land Conservation Contracts (Williamson Act) and to promote a compatible relationship between agricultural and non-agricultural activities and to ensure that appropriate provisions are incorporated as necessary into new land use proposals to preserve ongoing agricultural operations.

12. In accordance with Calaveras County General Plan Implementation Measure COS-5-M, apply the following measures to residential projects requiring discretionary approval and subject to CEQA review:

    - Where feasible, residential subdivisions shall include parks and open space with landscaping and/or native vegetation capable of carbon sequestration.

13. In accordance with Calaveras County General Plan Implementation Measure RP-2C, update the County Code relative to Agricultural Preserves for consistency with County needs and state Williamson Act requirements and include provisions for open space and recreational use contracts.

14. Apply for grants from the California Strategic Growth Council and others for a planning grant regarding agricultural land strategy plans and other mechanisms that promote GHG reductions and carbon sequestration through preservation of such assets as grasslands and oak woodlands.

15. In accordance with Calaveras County General Plan Implementation Measure COS-4D, with regard to oak woodlands, develop local mitigation measures pursuant to Public Resources Code section 21803.4(b)(4), in addition to the mitigation measures provided in PRC section 21803.4(b)(1-3), to facilitate the environmental review process relative to mitigating significant direct and cumulative impacts to oak woodlands, in conjunction with discretionary project approval and address pre-development removal of oaks. In the interim, require development that is subject to a discretionary entitlement and subject to CEQA review to enlist the services of a qualified professional (meaning a qualified biologist, botanist, arborist, or Registered Professional Forester) to survey the property in question for oak woodlands and to recommend options for avoidance and/or mitigation consistent with the provisions of PRC 21083.4 if potentially significant impacts to oak woodlands are identified. If so, the following shall apply:

- The oak woodland on the project site shall be mapped, and the extent of woodland canopy proposed to be removed as a result of the proposed project shall be identified.
  - If avoidance is utilized for all or part of the mitigation, the oak woodland to be avoided by the project shall be protected by identifying the dripline of the oak woodland canopy to be preserved on all construction plans and by implementation of best management practices or other measures recommended by the qualified professional to prevent damage to the woodland to be preserved.
  - Mitigation consistent with the provisions of PRC 21083.4, other than avoidance, shall be applied at a ratio of 1:1 to 2:1. The ratio and the type(s) of mitigation chosen shall be informed by the recommendations of the qualified professional with respect to providing similar habitat functions and values as the woodland habitat removed as part of the project.
  - If mitigation consisting of replacement planting, transplanting and/or identification of off-site mitigation through acquisition of a conservation easement is utilized, it shall be applied based on the recommendations of the qualified professional that the replacement habitat will provide similar habitat functions and values as the woodland habitat removed as part of the project. Mitigation shall take place in Calaveras County.

16. Conduct a carbon sequestration status study ~~by~~ *in* 2030 to identify further natural and working lands opportunities and emergent technology for carbon sequestration within the County.

Measure CS-1Not Quantified

Measure CS-2: Apply Compost

Meet S81383 compost or organics procurement targets by applying *3,754* tons of compost to land areas throughout the County by 2030.

1. Pursue funding to support requiring County agencies to procure and apply compost generated from County government organic waste to the exterior of suitable facilities as part of their operations.
2. Build partnerships with local growers, rangelands, and public use green spaces to distribute compost and procure at scale, allowing for reduced procurement costs.
3. Pursue funds to conduct a study to determine areas in the County with the highest carbon sequestration potential for compost application.
4. Work with local organizations and academic institutions to conduct ongoing outreach to users of compost to monitor soil carbon sequestration.
5. Explore partnerships with accredited carbon credit verifiers and technology providers who can quantify and monetize compost application credits.

Measure CS-2 Greenhouse Gas Reduction Impact (MT C02e/Year)

	2030	2045
Total	863	888

Overall GHGRP Measures Summary

Table 1 below presents the GHG emission reduction impact of each quantitative measure and the GHG emission reduction impacts aggregated by sector for each target year.

Table 1 GHG Emission Reduction Impact of Quantitative Measures

Sector or Measure ID	2030 GHG Emission Reduction Impact (MT CO_2e)	2045 GHG Emission Reduction Impact (MT CO_2e)
Energy		
RE-1: Community Energy	1,418	0
EO-1: Energy Conservation Outreach and Education	4,147	911
EB-1: Green Business Program	23	6
EB-3: Energy Efficiency Retrofits	3,868	1,727
EB-4: Time-of-Replacement Ordinance	9,748	27,531

NC-1: Highly Efficient New Development	58	98
NC-2: Zero Net Energy New Construction	81	192
NC-4: Clean Wood-Burning Appliances	28	62
Energy Sector Total:	***19,372***	***30,528***
Sector or Measure ID	2030 GHG Emission Reduction Impact (MT CO_2e)	2045 GHG Emission Reduction Impact (MT CO_2e)
Transportation		
TR-1: EV/ZEV Adoption	39,500	58,604
TR-2: County Fleet Decarbonization*	1,486	3,744
TR-3: Public Transit Mode Share	11,376	26,769
TR-4: Active Transportation Mode Share	187	428
TR-5: Off-road Equipment and Vehicles	7,787	17,362
Transportation Sector Total:	***58,850***	***103,162***
Agriculture		
AG-1: Crop Production Efficiency	2,483	5,444
AG-2: Livestock Manure Management	629	2,514
AG-3: Livestock Methane Emissions	7,721	13,512
Agriculture Sector Total:	***10,833***	***21,471***
Solid Waste		
SW-1: Organic Waste Diversion	2,924	3,007
SW-2: Divert Waste to Rock Creek Landfill	7	8
SW-3: Methane Capture	67	69
Solid Waste Sector Total:	***2,982***	***3,007***
Water and Wastewater		
W-1: Reclaimed Water	92	97
W-2: Low-Flow Water Use Fixtures	67	68
Water and Wastewater Sector Total:	***159***	***166***
Carbon Sequestration		
CS-2: Compost Application	863	888
Carbon Sequestration Sector Total:	***863***	***888***
Total Reductions	**93,059**	**159,221**

*Not included in sector or overall total.

Meeting GHG Emission Reduction Targets

As shown in Table 2 and Figure 4, full implementation of the County GHG reduction measures would allow the County to reach the County and State 2030 GHG emission reduction target. Full implementation of these measures would also allow the County to make substantial progress towards meeting the State 2045 GHG emission reduction target, but currently a projected gap of 117,558 MT CO_2e (i.e., approximately 33 percent) remains in 2045. Therefore, future GHGRP updates will be required for the County to establish a complete pathway for reaching the 2045 State GHG emissions target.

Table 2 GHG Emission Reduction Measures Analysis

Sector or Measure ID	2030 GHG Emissions (MT CO_2e)	2045 GHG Emissions (MT CO_2e)
Adjusted Forecast	306,545	276,780
GHG Emission Reduction Targets	213,698	0
GHG Emissions After Measure Implementation	213,485	117,558
GHG Emissions Gap	-212	117,558
Target Met?	Yes	No

Figure 4 GHG Emissions Levels After GHGRP Measures Implementation