



## Executive Summary

### Overview

Tehama County is committed to playing a leadership role in facilitating and coordinating the preparation of this Climate Action Plan (CAP). The CAP will include all of the unincorporated areas within Tehama County. The CAP recommends strategies that support individuals, businesses and County government in their endeavor to reduce greenhouse gas (GHG) emissions within the framework of the County's General Plan which was adopted in 2009. The General Plan guides the County's future buildout through its goals, policies, and implementation measures. This framework may be used to reduce greenhouse gas (GHG) emissions, address climate change, and improve the quality of life in the County. The CAP is necessary because of several legislative actions that have been signed into law over the past few years. While some view these laws as intrusive and unnecessary, the reality is that climate change may have a significant effect in Tehama County and the guiding policies within the Tehama County General Plan support's statewide laws such as Assembly Bill (AB) 32 and various Senate Bills (SB). The CAP and its nexus with offsetting environmental effects will allow the Qualified GHG Reduction Strategies to be incorporated as performance based Greenhouse Gas impact calculation standards under the California Environmental Quality Act (CEQA) §15064.4(a). The performance based GHG impact calculation standards (Qualified GHG Reduction Strategies) will simplify development review and clarify Tehama County's expectations regarding the calculation and impact of Greenhouse Gas's new projects that are consistent with the CAP. Ultimately, the County undertook development of this CAP to carry-out policies and fulfill implementation measures identified in the General Plan to address climate change and protect the local quality of life.

### Community Resources

The County has a history of engaging and collaborating with its communities, local residences and industries of which agricultural practices dominate the environmental setting. The CAP reveals the environmental benefits of Tehama County's agricultural industry and orchards in particular as the trees absorb greenhouse gases (GHG) through respiration and photosynthesis. However, while some agricultural practices as indicated below emit GHG, their sectors impacts are minimal at 8% of the Countywide GHG inventory (2008 baseline). The CAP is a document that inventoried GHG emissions Countywide for the baseline year of 2008 and then projects future emissions with and without Business As Usual scenarios through 2020 to 2028. Therefore, the benefits of this document can be explored at the local and broader community levels to understand the sources and magnitude of local GHG emissions, establish goals to reduce GHG emissions, and prioritize steps to achieve emissions targets. Mechanisms contained within this CAP build on existing County goals within the General Plan to reduce GHG emissions. This approach allows the County to stay within the General Plans guidance while developing the CAP. As eluded to above Tehama County's agricultural sector plays a major role in reducing GHG emissions. Farmers and their large land holdings may provide Tehama County with alternative sources of energy that can be used on site as well as off. More efficient business practices for all sectors of the County Inventory may lead to profitable and beneficial partnerships within the community.

## Process

General Plan Policy OS-2.7 directs the County to “prepare a Climate Action Plan”. County staff’s efforts included the work of the Tehama County Planning Department and the Tehama County Air Pollution Control District (TCAPCD). Work on the plan started with the retention of Pacific Municipal Consultants to develop a methodology and analysis of GHG emissions and their unincorporated Countywide inventory. The Planning Department and TCAPCD collaborated with PMC to prepare the content of the CAP document before you today. Various steps and components of the documents development revolved around industry operations, analysis, and coordination between County staff and the public at large.

Working within this framework yielded CAP goals, strategies, policies, practices and actions in key industry categories and sectors within Tehama County. There are two categories with several sectors in each that are addressed by the CAP. Please see below for details:

### Category 1- Tehama County’s Community Emissions Sectors:

Residential Built Environment (includes energy uses), Nonresidential built environment (includes energy uses), Transportation, Off-road equipment, Solid waste, Water and wastewater, Agriculture, and other stationary sources (not included in CAP Monitoring Program).

### Category 2- Tehama County’s Government Operations Emissions Sectors:

Facilities, Public Lighting, Fleet, Solid waste, Landfill, Commute and Travel.

Note. The plan also provides a means to track the goals, targets, measures, and actions, the CAP Monitoring Program will help County staff by providing a framework to oversee and validate the various stages of progress.

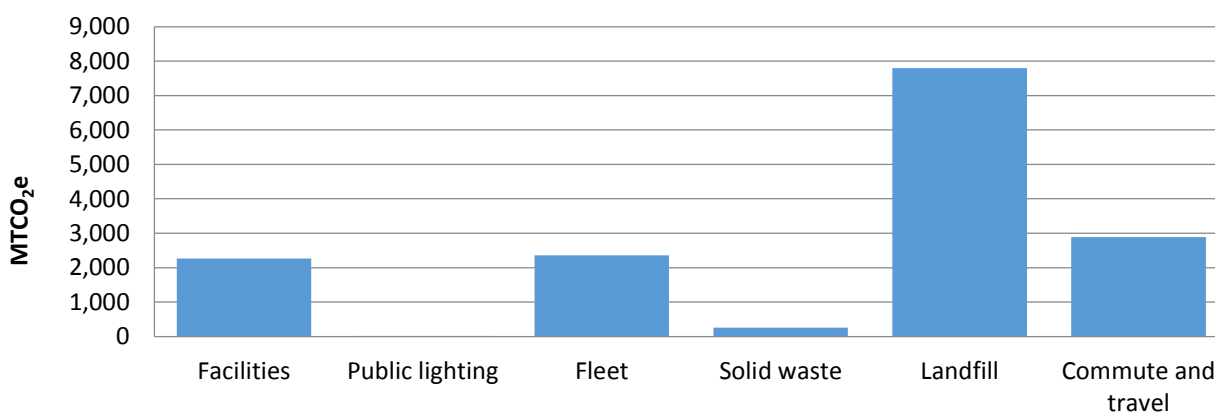
## CAP Products

Tehama County’s Climate Action Plan will implement the County’s General Plan by carrying out various Goals, Policies and Implementation Measures. It will also create a GHG emissions inventory of various industry categories, which will include Community and Government Operation and their sectors. These Inventories will be used to create a 2008 baseline of emissions in which the Board of Supervisors has used to set a minimum reduction goal of 5% for the 2020 target year along with another 5% for a total of 10% by the 2028 target year. Since the Board of Supervisors provided direction to staff, the CAP analyses indicates that the State’s legislative acts, local achievement and reduction strategies combined account for a 15.3% below 2008 baseline GHG reduction in 2020 and an 25% reduction below baseline levels by 2028. Therefore, it is clear that through the CAP analyses that the various factors employed and accounted for in the CAP exceed the Board of Supervisors goals and thus legitimize the use of strategies as CEQA performance standards regarding GHG calculations and impacts. Please see **Chapter 4** for more information on CEQA.

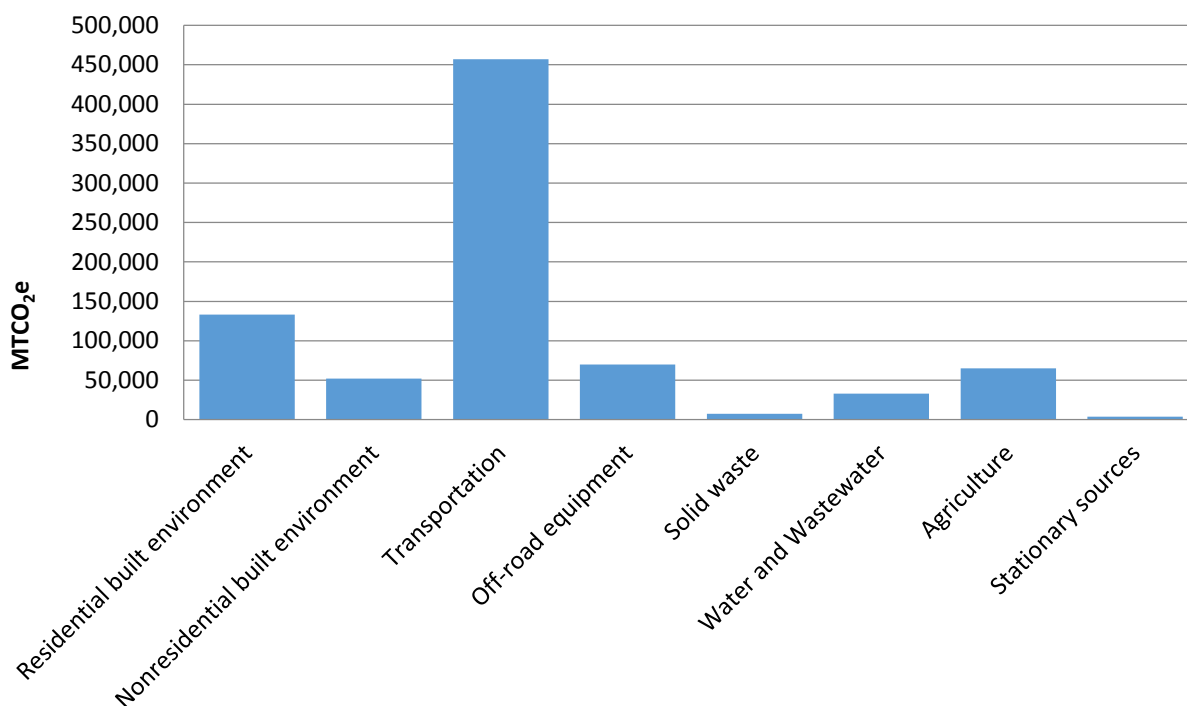
## Unincorporated Countywide Area Emissions By Category And Sector

The Inventories identify the sources and amount of GHG emissions within the unincorporated areas of Tehama County (hereafter referred to as Tehama County or Countywide). The Inventory also includes forecast of future activities and resulting GHG emissions in the years of 2020 and 2028. The Countywide inventory includes the Community and Government Operation categories along with their individual sectors and subsectors. The creation of the Inventories is based on emissions factors and methods in an evolving field of science. Over the past several years, organizations in California and throughout the United States have established protocols to assist and guide local agencies in assessing GHG emissions from government operations and community activities. The protocols include the use of a common unit, in this case metric tons of carbon dioxide equivalents or MTCO<sub>2</sub>e will be used, along with emission factors such as vehicle trips, kilowatt-hours (kWh) of electricity and therms of natural gas. While these protocols are not regulatory, they identify relevant sources or activities, recommend methods to estimate and analyze Government Operation sources and several community sources within the unincorporated areas of Tehama County for the 2008 baseline year. The 2008 Inventory of Government operations is presented in **Figure 1**, while the 2008 Inventory of Community emissions are provided on the next page as **Figure 2**.

**Figure 1: 2008 Government Operations Emissions and Sector Explanations**



**Figure 2: 2008 Community Emissions and Sector Explanations**



As indicated above Transportation is the largest sector in the Community or Government Operations inventory's creating 457,260 MTCO<sub>2</sub>e of the Countywide emissions within the 2008 GHG baseline. While the Community emissions inventory category is analyzed and reported separately from the Government Operations Category it is still important to point out that the Transportation sector alone makes up 56% of all emission reported and inventoried within Tehama County. It should be noted that this is consistent with most other Community inventories within California and does provide some validity to the Inventory methodology as explained later within the CAP. To put this in perspective, the Community category inventoried emissions total 821,570 MTCO<sub>2</sub>e with over half resulted from just one sector, which was Transportation at 56% (457,260 MTCO<sub>2</sub>e). While Residential (133,110 MTCO<sub>2</sub>e) and Off-road equipment (69,800 MTCO<sub>2</sub>e) were a distant second and third with 16% and 8% of the Total Countywide Community category. As far as the Government Operations category, the total emissions inventoried for the 2008 GHG Baseline year were only 15,600 MTCO<sub>2</sub>e. The top three emitters for this category were the Landfill at 7,800 MTCO<sub>2</sub>e (50%), Commute and travel at 2,890 MTCO<sub>2</sub>e (19%), and Fleet VMT converted to 2,360 MTCO<sub>2</sub>e (15%).

Agriculture is a major industry in Tehama County, almost all of which is located in the unincorporated areas. Agricultural production in the County historically is valued at around \$300 million a year. In 2008, certain agricultural practices emitted 65,010 MTCO<sub>2</sub>e or 8% of the Total Community category inventory. These emissions were primarily related to Fertilizer use (8,130 MTCO<sub>2</sub>e), Dairy Cattle (24,860 MTCO<sub>2</sub>e), Feedlot Cattle (2,240 MTCO<sub>2</sub>e), and

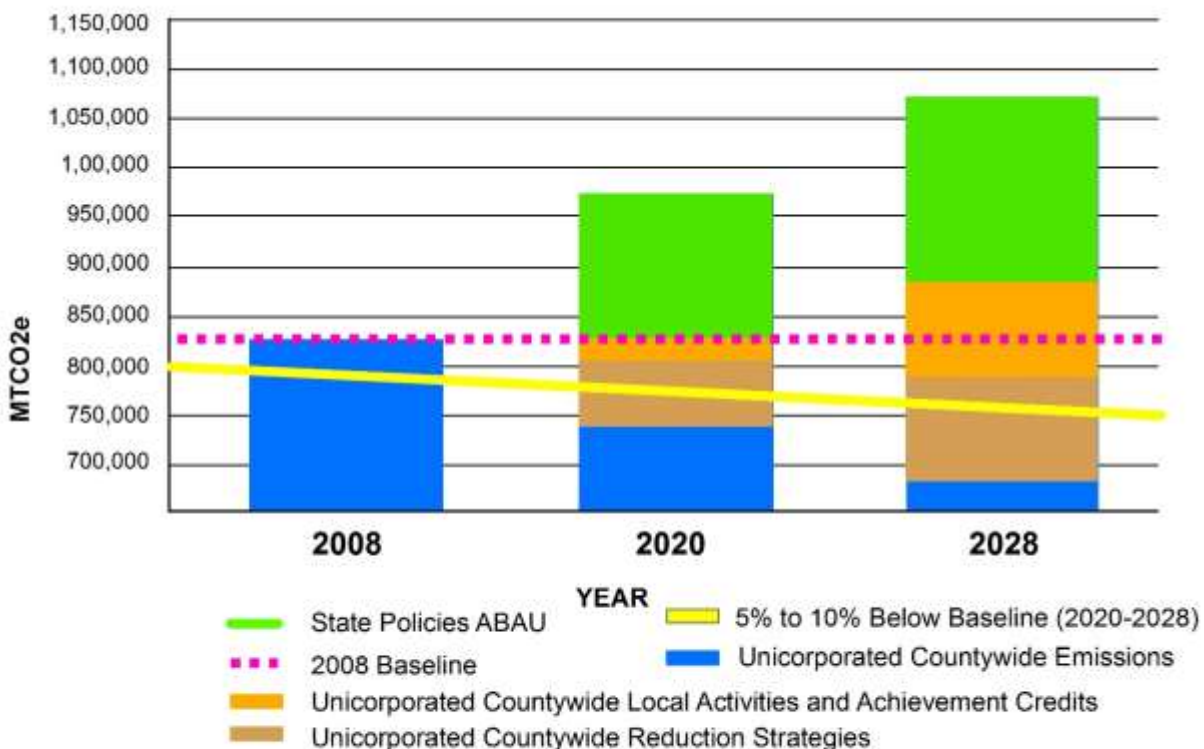
Other Cattle (29,780 MTCO<sub>2e</sub>; weaned and live primarily on pasture/rangeland). In comparison, when looking at all other agricultural activities that include tree canopy's such as tree farming and orchards, which provide a carbon offset or credit, agricultural activities within Tehama County as a whole along with tree planting and canopy preservation are considered to be part of the carbon reduction strategies within this CAP document and are quantified in the local Achievements and trend section of the report. For example, one mature 20 year old Walnut tree will offset/credit approximately 132.5 lbs. of carbon dioxide in a year as the sequestration value (Sequestration through photosynthesis is the rate at which plants and trees remove and store carbon dioxide); the cumulative stored carbon dioxide value of the 20 year old tree would be approximately 1,512.2 lbs. For this reason a tree canopy analysis within the valley floor has been performed for the 2008 base line year, which will adjust the total overall Co<sub>2e</sub> emissions and specifically address transportation related impacts as the vegetation will offset mobile source Co<sub>2e</sub> emissions through Storage and/or Carbon Dioxide sequestration.

## Conclusion

The 2015 CAP demonstrates to the County businesses and residents that the County acknowledges the existing and potential impacts of a changing climate and is committed to keeping it in the forefront of decision making. Successful implementation of the CAP will: 1) Prepare for anticipated climate change impacts in the coming decades, 2) Help the State of California achieve its reduction target by contributing the County's fair share of GHG reductions, and 3) Have a positive impact on the local residence and business.

The Board of Supervisors has chosen to reduce emissions below the 2008 baseline by 5% for the 2020 target and another 5% for a total of 10% for the 2028 target, which would equate to a community-wide target emission level of 795,311 MTCO<sub>2e</sub> by 2020 and 753,453 MTCO<sub>2e</sub> by 2028. While the effects of State Legislation and Local Achievement Credits have already reduced the Unincorporated Countywide emissions by 3.4% below the 2008 baseline for the 2020 target and a reduction of 6.7% for the 2028 target year, the CAP reduction strategies in **Chapter 4** reduce the emissions further. In fact, as shown in **Figure 3** on the next page the reduction strategies incorporated in **Chapter 4** and their associated assumptions outlined in appendix B reduce the Unincorporated Countywide Emissions by another 100,062 MTCO<sub>2e</sub> for 2020 and 153,860 MTCO<sub>2e</sub> for 2028 resulting in a 15.3% reduction below the 2008 baseline for 2020 and an 25% reduction below the 2008 baseline for 2028. These estimates are assumptions based on the best available accounting and reporting standards, methodologies and practices. The largest share of these reductions comes from energy efficiency and renewable energy strategies, although reduction strategies and credits in all sectors including state acts, and local achievements are needed to meet and exceed the 2020 and 2028 goals. However, it is clear that Tehama County will be doing its part to combat climate change.

**Figure 3: 2008-2028 Unincorporated Countywide Emissions & All Reduction Credits**



## Climate Action Plan Review

The CAP provides a platform to analyze, synthesis and estimate the Unincorporated Countywide Emissions, credits, strategies, policies, practices and actions related to climate change and Greenhouse Gases, while simplifying the review process for new development. Strategies and actions in the CAP not only provide the benefits of combating climate change by reducing GHG emission but also allows the CAP to serve as the County's resource for GHG analysis, as well as establish performance based GHG impact calculation standards under the California Environmental Quality Act (CEQA) §15064.4(a).

Quantifying the benefits of state legislation and progress within the County toward CAP goals helps the community better understand the anticipated GHG emissions from the activities of residents, employees, businesses, and government. The County's General Plan Goals, Policies and Implementation Measures not only coincide with state legislation but also protect, encourage and enhance various self-sustaining industries within the unincorporated area of the County. The CAP Monitoring Program within **Chapter 6** of the Climate Action Plan outlines the roles and responsibilities of the County and its various departments. However, the County can only achieve the goals established in this CAP through community support.

Predicting climate change is a challenging task, the CAP's Preparation/Prevention Practices and Monitoring Program will help prioritizes the County's actions, which will help protect both man-made and natural resources in the event that climate change escalates.

## Chapter 1 Introduction

### Overview

The Tehama County Board of Supervisors believes it is necessary to analyze, and if necessary address greenhouse gas (GHG) emissions within the unincorporated areas of the County. Therefore, the County is using the Climate Action Plan format to pursue its General Plan Goals, Policies and Implementation Measures. As indicated in General Plan Policy OS-2.7, the Board of Supervisors have directed the County to “prepare a Climate Action Plan”. At least two categories of emission will be inventoried and analyzed 1) Community, and 2) Government Operations.

The CAP provides a platform to analyze, synthesis and estimate the Unincorporated Countywide Emissions, credits, strategies, policies, practices and actions related to climate change and Greenhouse Gases, while simplifying the review process for new development. This platform or framework may be used to reduce greenhouse gas (GHG) emissions, address climate change, and improve the quality of life in the County. The CAP is necessary because of several legislative actions that have been signed into law over the past few years. While some view these laws as intrusive and unnecessary, the reality is that climate change may have a significant effect in Tehama County and the guiding policies within the Tehama County General Plan that supports statewide laws such as Assembly Bill (AB) 32 and Senate Bills (SB). Since the reduction trends within the CAP indicate that the credits, strategies and actions within the CAP document will not only exceed the Board of Supervisors goals of 5% for 2020 and 10% for 2028 along with the States suggested Goal of 15%, the Climate Action Plan will streamline environmental review and analysis of all discretionary projects within the unincorporated areas of the County. The strategies and actions established in the CAP will provide tangible performance based GHG impact calculation standards regarding projects subject to CEQA (CEQA Guidelines §15064.4(a)) simplify development review. The plan will also highlight and identify the benefits and GHG offset credits of agricultural practices, promote sustainability, renewable energy programs; and set a Monitoring program for the County to achieve adopted General Plan goals and policies related to climate change.

The County has a history of engaging and collaborating with its communities, local residences and industries of which agricultural practices dominate the environmental setting. The CAP reveals the environmental benefits of Tehama County’s agricultural industry and orchards in particular as the trees absorb greenhouse gases (GHG) through respiration and photosynthesis. While the CAP will outline the methods in which the County will inventory its emissions and set its reduction goals, it also provides emission reduction strategies that include quantify the sequestration values of the valleys orchards canopy, which result in GHG offsets.

### Tehama County Abstract

Tehama County’s location in the upper Sacramento Valley is largely rural in nature, with isolated pockets of population primarily concentrated along the valley’s major transportation corridors. As the County extends westward and eastward from these populated areas and into



the County's margins, large ranches and government land holdings dominate the terrain. The existing land use pattern within Tehama County consists primarily of a combination of upland agricultural, exclusive agricultural, and public lands. As stated previously, the major incorporated and unincorporated developed areas within Tehama County are located in or adjacent to major County or State transportation corridors, the majority of which are located near Interstate 5 and Highway 99 E & W.

Additionally, commercial land uses for the most part occur along these major State and County roadways, most of which are located in Red Bluff, Corning, and Los Molinos. Residential land uses within the developed portions of the County often tend to be located behind or beyond the commercial and service uses that are directly adjacent to the major street network. The structures within the County generally predate the International Building Code and California's energy-efficient Green Code in 2010, which is a subset of the Title 24 building code, as the older code was based on the Uniform Building Code.

As of January 2008, the County boasted a population of approximately 62,419 people, as estimated by the California Department of Finance (DOF), ranking it 41<sup>st</sup> among the 58 counties in California. While, in 2000, the DOF estimated the County's population to be approximately 55,918. Since 2000, the population of Tehama County has grown by approximately 6,501 people, resulting in an average annual increase 928.7 people (1.48 percent).

Agriculture has long been the backbone of Tehama County's economy. The favorable growing season, arid climate, fertile soils, and abundance of water contribute to making Tehama County an agricultural cornucopia in the northern Sacramento Valley. The areas that surround the Sacramento River are prime agricultural lands for irrigated crops. The foothills provide valuable grazing land and land for the production of dry-land hay and grain. The mountains provide timber and rangeland forage for summer grazing. All of these factors have contributed to shape the agricultural evolution of the County. Total acreage in farms steadily increased between the 1880's and the mid 1970's. During that time, total acreage peaked at nearly 1.3 million acres. From 1970 to the late 1980's, total acreage exhibited a slight decline. By 2002, it was reported by the National Agricultural Statistics Service (NASS) that total acreage had dropped from 1,103,584 acres to 862,440 acres.

## County Departments and The CAP

The Planning Department serves as the land use information centre for the County. The Department along with the Tehama County Air Pollution Control District (TCAPCD) have been the driving force in the development of the CAP. While the two departments serve in a professional manner and role to the Board of Supervisors and the Planning Commission, they will also be responsible for the coordination and implementation of the CAP, its role with the General Plan and the associated Monitoring Programs. The Department will use many tools to carry out the Goals, strategies, policies, practices and actions within the CAP including the maintenance and implementation of the County General Plan, the County Zone Plan, and implementation of the California Environmental Quality Act (CEQA). The Departments will be charged with disseminating the CAP message and its information to the public, and any potential residential, commercial or industrial development projects.

## CAP Boundaries

In order to completely analyze the GHG emissions for the CAP, one first has to identify the parameters of the study area. In this instance the GHG inventory of emissions and reduction goals, states legislative act influences, local achievements and reduction strategies will be limited to the Unincorporated areas of Tehama County and Government Operations within incorporated and unincorporated land. The CAP excludes any State or Federal Lands and the Cities of Red Bluff, Corning and City of Tehama or where they have Jurisdictions. **Figure 4** below delineates the boundaries of the study, which coincide with the jurisdictional boundaries of Tehama County.

**Figure 4: Unincorporated Tehama County**



## Addressing Climate Adaptation

Some degree of climate change will occur regardless of the County's effort to reduce and mitigate GHG emissions. As a result, the County will need to adapt to these changes within the context of the community's environmental and socioeconomic system. The County of Tehama has developed a chapter (Ch. 5) within the CAP to help prepare for climate adaptation when necessary. **Chapter 5's** Preparation Practices will integrate, and build upon the strategies and actions in the CAP.

The CAP will provide a road map for the County to collaborate with communities in assessing vulnerability to future climate change, developing overarching adaptation strategies and implementing policies and practices to enhance resilience. The Climate Adaptation section of this report describes the initial stages of this assessment.

## Tehama County's Focus

The Tehama County General Plan is a comprehensive document that provides policies and guidelines for the future expansion and development of the community. The General Plan helps express how the citizens of Tehama County wish to see development in their community occur, and it serves as a planning guidebook to decision-makers, staff, and citizens. The General Plan serves as the foundation for various planning documents that help support and implement the General Plan including: the Tehama County Zoning Ordinance; the Tehama County Land Development and Engineering Design Standards; area plans including the CAP; and other planning documents.

It is the intent of this document that agriculture remains one of the primary uses of land in Tehama County. This General Plan, as did the plans before it, emphasizes agriculture as a way of life and the foundation of the quality of life in Tehama County. Perhaps more than any other land use, agriculture depends on the land upon which it sits, and relies on policies in documents such as this General Plan to protect it from incompatible land uses. Urban uses are encouraged in this plan, but only in areas with existing services, or where services can be provided efficiently. CAP strategies, policies, practices and actions reduce GHG emissions, but can also help the County sustain natural resources and grow efficiently, while highlighting the benefit of agricultural operations such as orchard expansion and Timber Production Zones to the community. This is achieved for regional stakeholders by documenting the orchards carbon sequestration offset benefits, which will improve the long-term resiliency to changing environmental and economic conditions.

The CAP will focus on the community and government operation inventories, as well as, carbon credits to the baseline and future forecasts from 2008 through 2020 to 2028. These sections will also offer further direction and provide cost-effective options to reduce GHG emissions and improve the quality of life in Tehama County by implementing various state legislation and policies within the General Plan. Implementation of the General Plan through the CAP will promote agriculture by highlighting the expansion of orchards through the benefits of the County's tree canopy, which have been analyzed for carbon sequestration and Co2 offsets. The CAP also focuses on how the County will further GHG reductions while supporting business and farmers success.

## State Legislative Acts And Laws

The passage of Assembly Bill 32, the California Global Warming Solutions Act of 2006, marked a watershed moment in California's history. By requiring in law a sharp reduction of greenhouse gas (GHG) emissions, California set the stage for its transition to a sustainable, low-carbon future. AB 32 was the first program in the country to take a comprehensive, long-term approach to addressing climate change, and does so in a way that aims to improve the environment and natural resources while maintaining a robust economy. One of the most common ways local governments are supporting AB 32 at the local level is by preparing a Climate Action Plan or Environmental Analyses. Other State Legislative Acts necessitating the need for local action are identified on the next page:

- **Clean Car and Low Carbon Fuel Standards:** Assembly Bill 1493 requires a reduction in tailpipe GHG emissions from new vehicles produced from 2009 to 2020. The state implements AB 1493 through the Clean Car Standards (also referred to as the Pavley Standards). In 2007, then-Governor Schwarzenegger signed Executive Order S-01-07, requiring that the carbon intensity for all transportation fuels be reduced by 10% by 2020. This measure, known as the Low Carbon Fuel Standard (LCFS), was integrated into the AB 32 Scoping Plan and adopted in 2009. Together, these two policies reduce GHG emissions from on-road vehicles.
- **Renewables Portfolio Standard:** The Renewables Portfolio Standard (RPS) was created by Senate Bill (SB) X 1-2, signed into law in 2011. It requires that 33% of California's electricity is generated from renewable sources by 2020 excluding hydroelectric operations. This policy reduces emissions from electricity use, including electricity used to distribute and process water and wastewater.
- **Title 24 Green Building Code And Energy Efficiency Standards:** Title 24 is California's energy efficiency standards for new buildings, applied at the local level through the project review process. The most recent update to Title 24 occurred in 2010 now carried forward in the 2014 Code. This policy will reduce electricity and natural gas use in new homes and nonresidential buildings up to 15% as indicated above. According to SB 32 the State of California endeavors to reduce energy consumption whether it is from natural gas, electricity and/or fossil fuels. A number of energy efficient products and building/developments/Land Use components have been created, which if implemented will reduce energy needs by 15% for the Land Use Building/Energy sector/subsector of this CAP. These energy reducing practices and components have been placed and incorporated in to the California Green Building Standards Code, where if adopted and implemented the practices and components will result in a "green building". The State documents the purpose of this CalGreen Code in Section 101.2 of **Chapter 1** Administration as "The Purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: 1)Planning and Design, 2) Energy efficiency, 3) Water efficiency and conservation; translates to energy efficiency, 4) Material conservation and resource efficiency, 5) Environmental quality.

## Five Simple Steps For A CAP

The planning process for this Plan relied on five simple steps as noted below:

1. **Inventory Emissions**
2. **Establish a Reduction Target**
3. **Adopt Strategies to Achieve Target**
4. **Implement Reduction Strategies & Acclimation Practices**
5. **Evaluate Progress**

The first step utilized industry accepted protocols to calculate the Community and Government Operations Categories along with the associated sectors.

The second step relied upon the information gathered from the first step, which allowed the Board of Supervisors in a public meeting to set a reduction goal of 5% for the 2020 target year with another 5% making a total of 10% for the 2028 target year. The public meeting is the emphasis here, as it allowed public participation that engage residents, business owners, and other stakeholders in the identification and refinement of the goals, policies, implementation measures, practices and actions; it should be noted most of the public input took place early in the process at the 2009 General Plan update. Public input and vetting will be part of the process as the final draft moves through the adoption process as well.

The third step relied upon common practices, and products within the industry to formulate and propose acceptable strategies, the sources used are referenced in Appendix B.

The fourth step can only be achieved after the CAP is fully vetted and adopted (this has not occurred yet). However, based on the assumptions within the document the CAP process results exceeded the Board of Supervisors goals and State guidance of 15% below baseline levels.

Obviously the fifth step has not occurred, but after adoption the process will begin.

## County Resources and CAP Preparation

County staff's efforts include the work of the Tehama County Planning Department and TCAPCD. Work on the plan started with the retention of Pacific Municipal Consultants to develop a methodology and analyses of GHG emissions and their unincorporated Countywide inventory. The Planning Department and TCAPCD worked and collaborated with PMC to prepare the CAP document before you today. Various steps and components of the documents development revolved around industry operations, analysis, and coordination between County staff and the public at large. Staff's time and coordination resulted in steps to reduce emissions, while implementing General Plan Goals, Policies and Implementation Measures that encourage and enhance the Agricultural Industries to expand within Tehama County. This is important as the Orchards provide carbon sequestration offset benefits to the County's GHG emissions inventoried within the Community and Government Operations categories of the CAP.

## Public Assembly

The County invited public comment and participation in a number of ways that included ADHOC committees, workshops, assemblies for stakeholders, meetings and public hearings for the conceptual and framework phase of the CAP as included within the Tehama County General Plan.

As a result of these community interactive engagements the Board of Supervisors adopted a CAP framework that included its composition and target years. The General Plan incorporated the Goals, Policies and Implementation Measures that are the framework and bedrock of this CAP (Please see the below for a detailed list). It should be noted aside from the workshops and stakeholder meetings below, the CAP adoption process will include Planning Commission meeting(s) that will hold the documents comment period open for at least 60 days along with agenzized Board of Supervisors meeting(s).

- Beginning on September 6, 2007 the Tehama County Planning Commission held a series of six (6) public hearings for the purpose of taking public input from County residents and interested parties on the Public Draft General Plan document. Due to the importance of agriculture both to the County's economy and local emissions reduction strategies, the County held two focused meetings with Tehama County Farm Bureau representatives and the Agriculture Commission office to identify opportunities, review data, and prioritize proposed strategies and actions.
- During the August 1, 2007 Scoping meeting at the Community Center, participants were invited to review the open house displays. The Tehama County Air Pollution Control District along with County staff and consultants gave presentations about the project. After the presentations, attendees provided both written and verbal comments.



Several themes emerged included strong support for renewable energy generation in the County, along with the desire to strongly enhance, protect and encourage the agricultural industry within Tehama County. However, the most important result from the scoping meeting and public hearings was the General Plan incorporation of the Goals, Policies and Implementation Measures that are the framework and bedrock of this CAP. Those Goals, Policies and Implementation Measures are identified on the next page.

## **GOAL OS-2**

**To maintain, protect, and improve the air quality in Tehama County at acceptable levels as defined by state and federal standards.**

### **Policy OS-2.6**

The County shall promote improved air quality benefits through energy conservation measures for new and existing development.

#### **Implementation Measure OS-2.6a**

Require energy-conserving features in the design and construction of new development. Many options exist for reducing pollution from energy-producing systems, including the following:

- Requiring the use of the best available technologies to reduce air pollution standards.
- Using building materials and methods that reduce emissions.
- Requiring that development projects be located and designed in a way that minimizes direct and indirect emission of air contaminants.
- Installing efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces, and boiler units.
- Utilizing automated time clocks or occupant sensors to control heating systems.

#### **Implementation Measure OS-2.6b**

Encourage the use of cost-effective and innovative emission-reduction technologies in building components and design. Such technologies may include the use of solar equipment, LED and compact florescent lighting, and the use of external electric outlets to allow for the use of non-gasoline powered lawn equipment.

#### **Implementation Measure OS-2.6c**

Support the use of building materials and methods that increase efficiency beyond State Title 24 standards.

#### **Implementation Measure OS-2.6d**

Encourage the use of “EPA Energy Star”-certified appliances.

## Goals, Policies and Implementation Measures Continued-

### **Implementation Measure OS-2.6e**

Promote the implementation of sustainable design strategies for “cool communities,” such as installing solar equipment, light-colored paving, the use in increased amounts of insulation, dual-pane windows, and the planting of shade trees along south and west building exposures.

### **Implementation Measure OS-2.6f**

Promote the incorporation of energy-conserving design and construction techniques in all facilities.

### **Implementation Measure OS-2.6g**

Support vehicle improvements and the use of clean vehicles that reduce emissions and improve air quality.

### **Implementation Measure OS-2.6h**

Replace the County’s fleet vehicles with new vehicles that utilize the lowest emission technology available, whenever economically feasible.

### **Implementation Measure OS-2.6i**

To the extent permitted by law, adopt a policy that provides a preferential treatment to contractors using reduced emission equipment for County construction projects and for County contracts for services (e.g., garbage collection).

### **Implementation Measure OS-2.6j**

Encourage lowest emission technology buses and vehicles in public transit fleets.

### **Implementation Measure OS-2.6l**

Upon tree removal, the County shall encourage the replanting of an equal or greater number of trees. The placement of new trees shall be located on the site so that they provide shade to south-facing windows in order to minimize heat gain.

## **Policy OS-2.7**

Tehama County shall work with the Tehama County Air Pollution Control District, California Air Resources Board and/or other agencies to prepare a Climate Action Plan. The Climate Action Plan shall include at a minimum:

- An inventory of current (2008) GHG emissions within the Tehama County Air Pollution Control District consistent with methodologies developed by the International Environmental Agency for Local Governments (ICLEI) and California Air Resources Board (ARB).



## Goals, Policies and Implementation Measures Continued-

- An inventory 1990 GHG emission levels within the Tehama County Air Pollution Control District consistent with methodologies developed by ICLEI and ARB (Other direction has been provide by the Board of Supervisors).
- Estimated inventory of 2020 GHG emission levels within the Tehama County Air Pollution Control District consistent with methodologies developed by ICLEI and ARB (Other direction by the Board of Supervisors extending the estimated inventories to 2028 have been provided).
- Specific targets for reductions of the current and projected 2020 GHG emissions inventory from those sources reasonably attributable to the County’s discretionary land use decisions and the County’s internal government operations (Other direction by the Board of Supervisors extending the estimated inventories to 2028 have been provided).
- Specific and general tools and strategies to reduce the current and projected 2020 GHG inventories and to meet the Plan’s target’s for GHG reductions by 2020 (Other direction by the Board of Supervisors extending the estimated inventories to 2028 have been provided).

The County shall seek funding from the State and/or other sources, including development impact fees, in order to fund the Plan.

## CAP Implementation

If the CAP is adopted in this form or another, it will act as an extension and implementation mechanism of the General Plan regarding air quality and climate change subjects. The CAP should be considered a living document that will be revisited and reviewed from time to time. Currently the Monitoring program indicates that the CAP strategies and acclimation policies and practices will be reviewed at each target year for potential updates. Since the CAP outlines CEQA GHG Impact Calculation Performance Standards in **Chapter 4**, project review for new discretionary projects subject to Title 24 and CAP will be measurable, thus saving staff and applicants time during the permit process, which will reduce GHG emission through energy efficient designs and energy star appliance instillation.

## CAP Applications

The Climate Action Plan will be used by County staff, as an extension of the General Plan to mold future plans, projects and actions in a way that will reduce GHG emission within the County. As indicated above, one of the ways to regulate GHG Emissions is to streamline CEQA projects for interested partners and stakeholders. The CAP has a nexus with mitigating environmental effects, which will allow many of the Qualified GHG Reduction Strategies to be incorporated as performance based GHG impact calculation standards under the California Environmental Quality Act (CEQA) §15064.4(a). The

performance based GHG impact calculation standards (Qualified GHG Reduction Strategies) will simplify the development review process and clarify Tehama County's Greenhouse gas thresholds of significance for new projects that are consistent with the CAP.

The Plan provides a mechanism for the County to monitor and reduce GHG emissions. However, and more importantly it provides simple measurable standards and thresholds of significance for Greenhouse Gas emissions related to projects.

All new discretionary projects must undergo a CEQA review process to analyze and disclose potential environmental impacts. New projects that the County considers to be consistent with the CAP may be able to streamline evaluation of climate change impacts, although these projects may still be required to analyze other potential environmental impacts in a negative declaration, mitigated negative declaration, or environmental impact report. By identifying a menu of strategies in this CAP, the County is providing applicants with a recommended list of ways to reduce GHG emissions, reducing the workload for project applicants. Applicants can incorporate CAP strategies within proposed projects, knowing that they meet the County's performance based thresholds of significance as incorporated herein (See GHG reduction strategies section and County General Plan).

The Tehama County CAP will provide these benefits based on consistency with State CEQA Guidelines Section §15064.4(a). County staff will use a project checklist to analyze the consistency of new projects subject to CEQA with applicable CAP strategies.

## Chapter 2 CAP Inventory

### Overview

State, regional and local laws, along with agencies tasked with local regulatory oversight, have influenced how and why GHG Inventories are completed in California. The Inventory identifies the sources of GHG emissions in the unincorporated areas of the County (community inventory) and from government operations (the government operations inventory) for the year 2008. The Inventory is the foundation of the Plan. However, the Inventory produced by PMC also includes forecasts of future activities and resulting GHG emissions in the years 2020 and 2028. These Inventories use calendar year 2008 data from everyday activities such as the electricity used in homes, miles traveled in vehicles, and natural gas used in government facilities to estimate GHG emissions, which are summarized below, the methodologies and technical data for the Inventory results can be referenced in appendix B or the PMC June 27, 2014 memorandum (Copy in office project file). The 2008 baseline year has been selected for consistency with state guidance and the General Plan.

### Methods And Emissions Sources

This Inventory was prepared using protocols and best practices identified within the Local Government Operations Protocol (LGOP) v. 1.1 and the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions. The Inventory analyzes the community and government operations emissions sources as indicated below:

### Community Emissions

- Agriculture – activities such as fertilizer use, manure management, and enteric fermentation from livestock associated with farming and ranching operations, including dairies and feedlots
- Transportation – on-road vehicle trips that begin and/or end within the unincorporated areas of Tehama County
- Residential built environment – electricity, natural gas, propane, and wood use in residential settings
- Nonresidential built environment – electricity and natural gas used in nonresidential settings (e.g. industrial, commercial)
- Off-road equipment – the use of portable equipment and vehicles that do not travel on roads i.e. timber harvest equipment for logging as well as farm equipment used for agricultural purposes
- Solid waste – material produced by the community that is deposited in landfills which decompose and produce methane

- Water & Wastewater – energy used to treat and pump water used and wastewater created along with emissions from the processing of wastewater.

Note. Subsectors of agricultural emissions were inventoried and generated as indicated above. However, while Crop Residue/Prescribed burning were inventoried and estimated as part of the study, the estimates were not included as part of the Community Emission totals (not required by protocol). Crop Residue/Prescribed burning estimates are 17,160 MTCO<sub>2</sub>e. (2008).

## Government Operations Emissions

- Facilities – energy (electricity and natural gas) used in County government building and facilities
- Public Lighting – electricity used for public lights operated by the County, including streetlights, traffic signals, and other outdoor lighting in public settings
- Water and wastewater – Electricity used to treat and deliver potable water and to transport and treat wastewater
- Vehicle fleet – The use of County-owned vehicles
- Landfill – solid waste, from any source, deposited in a County-owned landfill and emissions from flared methane
- Employee commute and travel – vehicle use resulting from County employees traveling to and from work, and on trips for business purposes

The GHG emissions inventory is based on activity data collected for each sector, such as the kilowatt-hours (kWh) of electricity or therms of natural gas used for the residential, commercial, and industrial energy sectors; VMT for the transportation sector; or gallons of water/waste water converted to indirect source emission utilizing the kilowatt-hours (kWh) of electricity needed to run the well pumps. These activities are converted to GHG emissions using an emissions factor or coefficient supplied by resource providers or emissions modeling software that indicates the GHGs emitted for every kWh produced, mile traveled, or ton of waste disposed. **Appendix B** identifies emissions factors used within the CAP.

The Inventory measures emissions of three primary GHGs—carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). These GHGs are then converted to metric tons of carbon dioxide equivalent emissions (MTCO<sub>2</sub>e) by comparing the global warming potential (GWP) of each gas to CO<sub>2</sub>. For example, CH<sub>4</sub> is 21 times more powerful than CO<sub>2</sub> on a per-weight basis in its capacity to trap heat, while nitrous oxide (N<sub>2</sub>O) is 310 times more powerful than CO<sub>2</sub>. This conversion enables the County to consider different GHGs in comparable terms.

## Community Inventory and Government Operations

The community inventory counts emissions generated by activities occurring in the unincorporated areas of the County. County government operations occur in unincorporated areas, but many facilities are also located in incorporated cities (e.g., the County facilities located in Oroville). Emissions generated by County operations are much smaller than those generated by the community at large, and it is not feasible to accurately identify which government operations emissions occur within the unincorporated area. Therefore, the government operations inventory and the community inventory are treated as separate, non-comparable items.

### Baseline 2008 Inventories

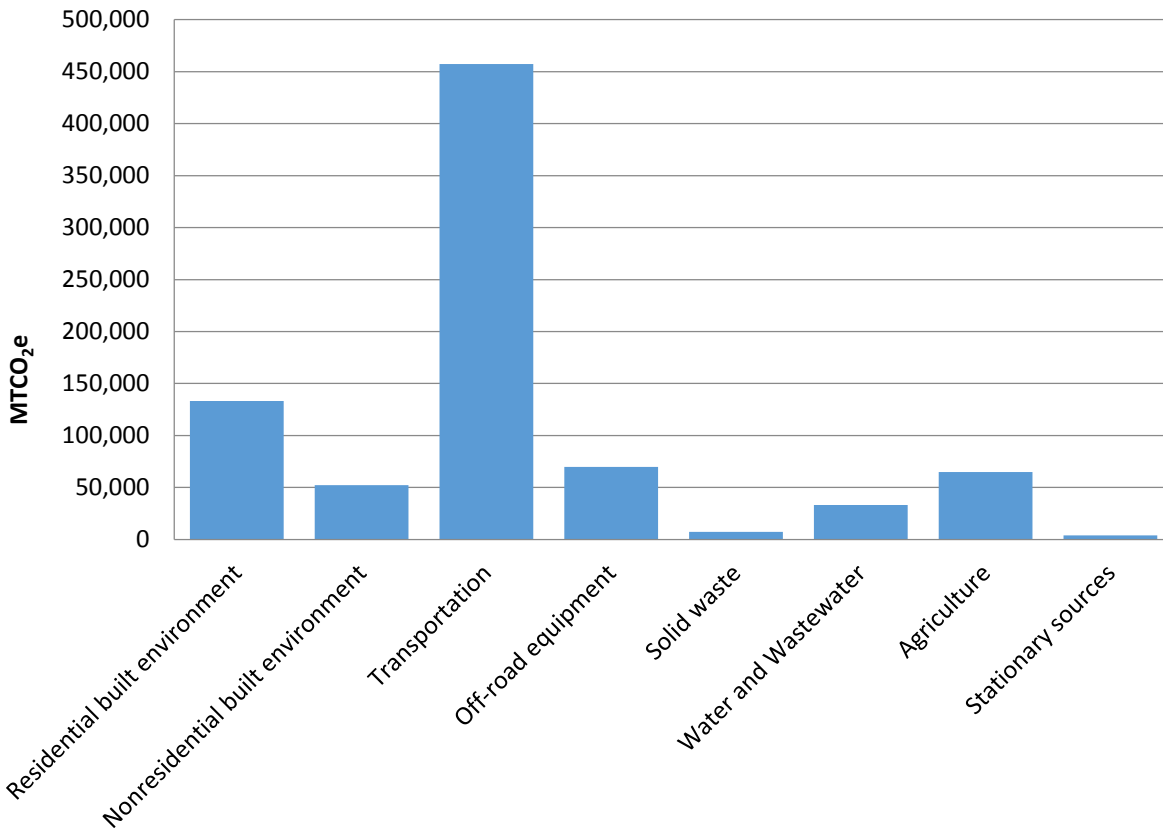
#### Community

To support the CAP, the County created the Tehama County 2008 baseline community GHG emissions inventory through 2020 to 2028 emissions forecasts originally prepared for Tehama County's General Plan 2009-2029. Additional information concerning the review and updates is provided in **Appendix B**, which presents the background data methodologies used to create the 2008 baseline GHG inventory for the unincorporated areas of Tehama County. As illustrated in **Figure 3**, the largest sector, transportation, produced 457,260 MTCO<sub>2e</sub>, or 56% of the total community emissions. The next-largest sector, the residential built environment, was responsible for 133,110 MTCO<sub>2e</sub> (16% of the total), followed by the off-road equipment sector with 69,800 MTCO<sub>2e</sub> (8% of the total). The agriculture sector was the fourth-largest emitter at 65,010 MTCO<sub>2e</sub> (8% of the total), followed by the nonresidential built environment (52,210 MTCO<sub>2e</sub> or 6%) and water and wastewater (33,020 MTCO<sub>2e</sub> or 4%). The solid waste sector emitted 7,260 MTCO<sub>2e</sub> (1%), while the stationary sources sector had the smallest share of emissions (3,900 MTCO<sub>2e</sub>, or less than 1% of the total). Also include in the emissions totals in this CAP (**Table 1** and **Figure 5**), are forestry (logging) and farming equipment emission, which are included in the off-road equipment sector.

**Table 1: 2008 Community Inventory**

Sector	MTCO <sub>2e</sub>	Percentage
Residential built environment	133,110	16%
Nonresidential built environment	52,210	6%
Transportation	457,260	56%
Off-road equipment	69,800	8%
Solid waste	7,260	1%
Water and wastewater	33,020	4%
Agriculture	65,010	8%
Other stationary sources	3,900	<1%
<b>Total</b>	<b>821,570</b>	<b>100%</b>
<i>Note: Due to rounding, totals may not equal the sum of the component parts.</i>		

**Figure 5: 2008 Community Emissions by Sector**



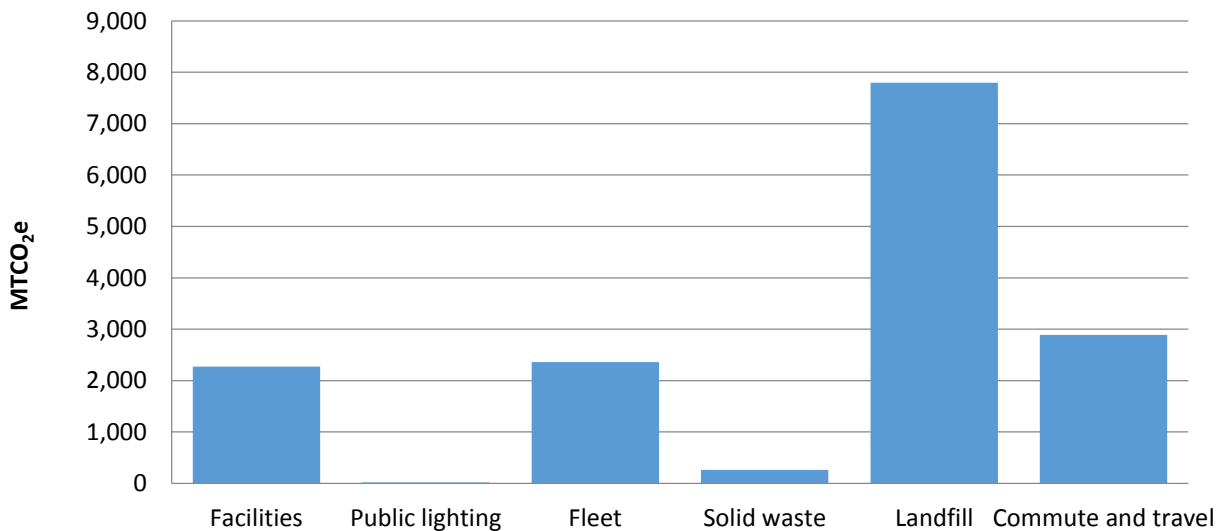
## Government Operations

The Baseline (2008) government operations emissions for Tehama County were calculated using data collected by County staff in a manner consistent with best practices and methods recommended by the LGOP. As illustrated in **Figure 6** and **Table 2**, the Inventoried emissions in 2008 totaled 30,010 MTCO<sub>2</sub>e. The largest sector was the Tehama County/Red Bluff Landfill, which was responsible for 7,800 MTCO<sub>2</sub>e, or 50% of the total government operations emissions. Commute and travel was the next-largest sector, contributing 2,890 MTCO<sub>2</sub>e (19% of the total), followed by the facilities sector with 2,270 MTCO<sub>2</sub>e (15% of the total). The fleet sector came in fourth with 2,360 MTCO<sub>2</sub>e (15%), followed by the solid waste sector (260 MTCO<sub>2</sub>e or 2%). The public lighting sector came in sixth with 20 MTCO<sub>2</sub>e (less than 1%).

**Table 2: 2008 Government Operations Inventory**

Sector	MTCO <sub>2</sub> e	Percentage
Facilities	2,270	15%
Public lighting	20	<1%
Fleet	2,360	15%
Solid waste	260	2%
Landfill	7,800	50%
Commute and travel	2,890	19%
<b>Total</b>	<b>15,600</b>	<b>100%</b>

*Note: Due to rounding, totals may not equal the sum of the component parts.*

**Figure 6: 2008 Government Operations Emissions by Sector (MTCO<sub>2</sub>e)**

## Emissions Forecasts

In order to help ensure consistency with AB 32 and to support the creation of a Qualified GHG Reduction Strategy, the Inventory also includes forecasts of future emissions for both the community and government operations inventories. The forecasts address two years: 2020 and 2028. The 2020 forecasts better align with AB 32 and can be used to create a GHG reduction target that matches the guidance of the AB 32 Scoping Plan. The 2028 forecasts coincide with the buildout year of the existing Tehama County General Plan and help to guide progress toward a long-term reduction goal.

There are two forecasts in the Inventory: 1) a business-as-usual (BAU) forecast and 2) an adjusted business-as-usual (ABAU) forecast. The BAU forecast analyzes future GHG emissions if no action is taken at the federal, state, or local level to reduce them. The BAU forecast assumes that activity data on a per-household or per-person level remains the same as the baseline and that emission factors remain unchanged. The ABAU forecast includes reductions from existing state policies that will reduce activity data and/or emission factors, resulting in fewer GHG emissions. In the case of both forecasts, the projected activity data is combined with applicable growth indicators to estimate future emissions.

## Community Forecast

Under the anticipated growth scenario and Business-as-Usual trend line, community emissions would increase to 959,060 MTCO<sub>2e</sub> by 2020, or 17% above 2008 emissions. These trends would continue on a Business-as-Usual projection and the communities emissions would grow to approximately 1,060,800 **MTCO<sub>2e</sub>** by 2028, or 29% above 2008 emissions (**Table 3** and **Figure 7**).

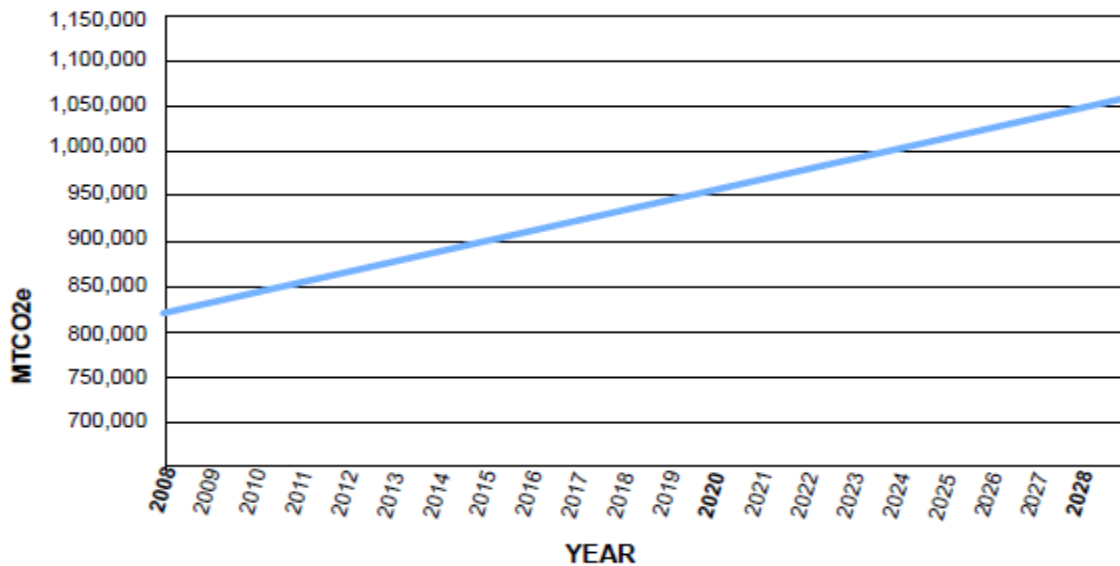
**Table 3: Community Business-as-Usual Emissions Forecasts**

Sector	2008 MTCO <sub>2e</sub>	2020 MTCO <sub>2e</sub>	2028 MTCO <sub>2e</sub>	MTCO <sub>2e</sub> Percentage Change, 2008–2028
Residential built environment	133,110	193,230	230,200	73%
Nonresidential built environment	52,210	58,750	64,650	24%
Transportation	457,260	503,720	552,730	21%
Off-road equipment	69,800	81,520	81,700	17%
Solid waste	7,260	9,310	10,980	51%
Water and wastewater	33,020	42,350	49,940	51%
Agriculture	65,010	66,280	66,700	3%
Other stationary sources	3,900	3,900	3,900	0%
<b>Total</b>	<b>821,570</b>	<b>959,060</b>	<b>1,060,800</b>	<b>29%</b>
<b>Percentage Change from 2008</b>	—	17%	29%	29%

*Note: Due to rounding, totals may not equal the sum of the component parts.*



**Figure 7: Community Business-as-Usual Emissions Forecasts by Sector (MTCO<sub>2</sub>e)**



### Government Operations Forecast

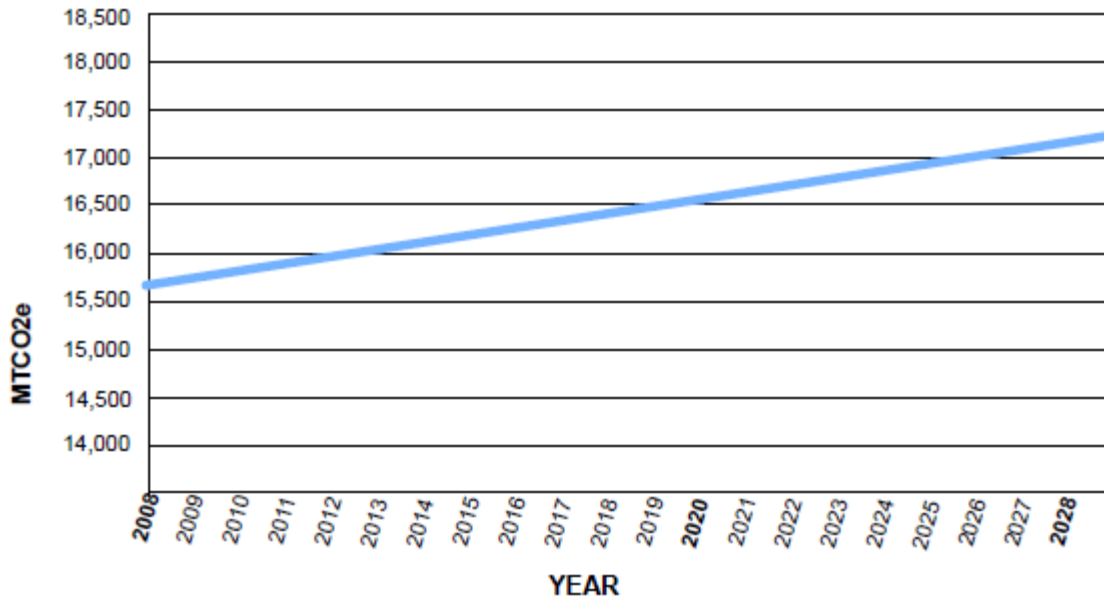
As illustrated on the next page in **Table 4** and **Figure 8**, under the anticipated growth scenario and Business-as-Usual trend line, government operations emissions would increase to 16,610 MTCO<sub>2</sub>e by 2020, or 6% above 2008 emissions. These trends would continue on a Business-as-Usual projection and the government operations emissions would grow to approximately 17,270 **MTCO<sub>2</sub>e** by 2028, or 11% above 2008 emissions. Most of this increase is related to anticipated growth in service population within the unincorporated areas of the County under the General Plan, which would directly increase emissions in the Joint City/County Landfill.

**Table 4: Government Operations Business-as-Usual Emissions Forecasts**

Sector	2008 MTCO <sub>2</sub> e	2020 MTCO <sub>2</sub> e	2028 MTCO <sub>2</sub> e	MTCO <sub>2</sub> e Percentage Change, 2008–2028
Facilities	2,270	2,400	2,400	6%
Public lighting	20	20	20	0%
Fleet	2,360	2,330	2,330	-1%
Solid waste	260	260	260	0%
Landfill	7,800	8,740	9,400	21%
Commute and travel	2,890	2,860	2,860	-1%
<b>Total</b>	<b>15,600</b>	<b>16,610</b>	<b>17,270</b>	<b>11%</b>
<b>Percentage Change from 2008</b>	—	6%	11%	11%

*Note: Due to rounding, totals may not equal the sum of the component parts.*

**Figure 8: Government Operations Business-as-Usual Emissions Forecasts by Sector (MTCO<sub>2</sub>e)**



## Chapter 3 Reduction Goals

### Overview

Now that the GHG inventories have been completed, the next step in the CAP process is to set reduction goals and timelines for the County to meet those goals. The inventories have been used to create a 2008 baseline of emissions in which the Board of Supervisors has used to set a minimum reduction goals of 5% for the 2020 target year along with another 5% for a total of 10% by the 2028 target year. The reduction goals create measurable standards that help the community and County staff determine, if and when they have achieved the CAP's objectives.

### State Guidance

The AB 32 Scoping Plan recommends a goal of 15% below baseline levels by 2020, which is considered to be equal to the statewide reduction target of 1990 levels by 2020 as established by AB 32. Individual air districts can also recommend a reduction goal for communities within their jurisdiction. In fact not only has the TCAPCD recommended GHG reduction goals as incorporated within this document, the TCAPCD has also prepared and updated its CEQA Planning and Permitting Handbook recommending a 900 metric ton per year GHG threshold in order to assist agencies within its jurisdictional boundaries. This threshold is consistent with the "White Paper", CEQA and Climate Change, and can be downloaded from <http://www.capcoa.org>. As part of the Tehama County General Plan Environmental Impact Report certified in 2008, mitigation measure 6.0.1 was identified to minimize the potential impact of buildout and/or plan implementation on the County's contribution to climate change and greenhouse gas emissions. Mitigation measure 6.0.1 directs the preparation of a Climate Action Plan (CAP) in coordination with the Tehama County Air Pollution Control District, CARB etc.

The California Air Resources Board (CARB) adopted the AB 32 Climate Change Scoping Plan (Scoping Plan) on December 11, 2008. There has been at least one officially adopted update since that time (May 22, 2014). However, both documents recommend a reduction goal for local governments to reduce greenhouse gas emissions by approximately 15 percent from current levels by 2020 along with the recommended action to sustain tree sequestration and support other projects that also provide carbon sequestration benefits including increasing carbon sequestration on agricultural lands.

As indicated in the Scoping Plan, Forests are unique in that planting trees today will maximize their sequestration capacity in 20 to 50 years. As a result, near-term investments in activities such as planting trees will help state and local agencies reach the 2020 targets, but will also play a greater role in reaching the states 2050 goals. In fact the CDFA is also supporting projects that address GHG mitigation through its Specialty Crop Block Grant Program (SCBGP). Based on this guidance, air districts and local jurisdictions throughout California have interpreted "existing emissions" as baseline emissions occurring between 2005 and 2008. Therefore, the Board of Supervisors has set minimum reduction goals of 5% for the 2020

target year along with another 5% for a total of 10% by the 2028 target year. In order to maintain consistency with the State and its reduction themes, the CAP will incorporate its orchards annual carbon sequestration rates from 2008 to 2028 utilizing the Center for Urban Forest Research (CUFR) Tree Carbon Calculator, which is the only tool approved by the California Climate Action Registry.

## Realizing The General Plans Air Quality And GHG Goals

In support of the state and its guidance, the County's General Plan identifies support Countywide GHG emissions reductions through the development of a Climate Action Plan that would include a GHG inventory, reduction targets and methods to achieve the adopted reduction targets. The Open Space and Conservation Element Policy OS-2.7 indicates that Tehama County shall work with the Tehama County Air Pollution Control District, California Air Resources Board and/or other agencies to prepare a Climate Action Plan. While the Tehama County General Plan does not identify specific GHG reduction, it is clear that the mandate by the Tehama County Board of Supervisors is to prepare an inventory analyses in which to make an informed decision regarding appropriate target levels for an agricultural base County that clearly has more open space than people. The General Plan also identifies Agricultural and Timber related Goals Policies and Implementation Measures that will help protect, facilitate and foster tree growth of all types within the County. Goals such as OS-9-To protect and enhance resource lands in the County for the continued benefit of agriculture, timber, grazing, recreation, wildlife habitat, and quality of life, and Policies such as AG-2.3-The County shall take an active role in the various timber management improvement and education programs as a means to improve timber yields and protect wildlife habitat and watersheds consistent with Timber Harvest Plans along with Policy ED-6.2-The County shall recognize and promote agricultural based industries, and provide for the expansion of value added industries in an economically viable manner consistent with available resources.

With the benefits of Orchard trees, which are included in the CAP's Local Achievements and Strategies sections, the County's reduction goals are feasible. While the reduction goals are 5% for 2020 and another 5% for a total of 10% for 2028, the CAP analyses indicates that the reduction will be 15.3 in 2020 and 25% in 2028. Since the CAP analyses indicates the reductions will exceed the Board of Supervisors Goals, the County has demonstrated a clear connection with the AB 32 Scoping Plan and validates the CAP's reduction strategies for CEQA as performance based GHG impact calculation standards, because the CAP and its nexus with reducing environmental GHG effects will allow the Qualified GHG Reduction Strategies to be incorporated as performance based GHG calculation and impact standards under the California Environmental Quality Act (CEQA) §15064.4(a). The performance based GHG impact calculation standards (Qualified GHG Reduction Strategies) will simplify development review and clarify Tehama County's Greenhouse gas thresholds of significance for new projects that are consistent with the CAP.

## Attaining The Goals

The County has chosen a reduction goal of 5% for 2020 and another 5% for a total of 10% for 2028 below the 2008 baseline levels, which would equate to a community target emission level of 780,491 MTCO<sub>2e</sub> by 2020 and 739,413 MTCO<sub>2e</sub> by 2028. Therefore, the County needs to reduce community emissions by 22% (178,569 MTCO<sub>2e</sub>) below forecast levels to achieve a 5% reduction below 2008 baseline levels in 2020, and 39% (321,387 MTCO<sub>2e</sub>) below forecast levels to achieve a 10% reduction below 2008 baseline levels in 2028. State policies already in place will provide a reduction of 142,600 MTCO<sub>2e</sub> for the 2020 target and a reduction of 199,420 MTCO<sub>2e</sub> for the 2028 target. Therefore, the County would need to reduce emissions by another 35,969 MTCO<sub>2e</sub> by 2020 and a 121,967 MTCO<sub>2e</sub> by 2028 in order to meet these goals, as illustrated in **Table 5** below.

**Table 5: Community Emissions & Reduction Goals**

Community	2008 MTCO <sub>2e</sub>	2020 MTCO <sub>2e</sub>	2028 MTCO <sub>2e</sub>
2008 Baseline & BAU Forecast	821,570	959,060	1,060,800
Tehama County Reduction Goal for 2020 5%	—	780,491	—
Tehama County Reduction Goal for 2028 10%	—	—	739,413
Total Reduction from ABAU Forecast	—	-142,600	-199,420
Total Reduction need from 2008 & BAU Forecast to meet goal	—	-178,569	-321,387
<b>Remaining Reductions needed to meet goal</b>	—	<b>35,969</b>	<b>121,967</b>

The County has chosen a reduction goal of 5% for 2020 and another 5% for a total of 10% for 2028 below the 2008 baseline levels, which would equate to a government operations target emission level of 14,820 MTCO<sub>2e</sub> by 2020 and 14,040 MTCO<sub>2e</sub> by 2028. Therefore, the County needs to reduce government operation emissions by 11% (1,790 MTCO<sub>2e</sub>) below forecast levels to achieve a 5% reduction below 2008 baseline levels in 2020, and 21% (3,230 MTCO<sub>2e</sub>) below forecast levels to achieve a 10% reduction below 2008 baseline levels in 2028. State policies already in place will provide a reduction of 1,470 MTCO<sub>2e</sub> for the 2020 target and a reduction of 1,820 MTCO<sub>2e</sub> for the 2028 target. Therefore, the County would need to reduce emissions by another 320 MTCO<sub>2e</sub> by 2020 and a 1,410 MTCO<sub>2e</sub> by 2028 in order to meet these goals, as illustrated in **Table 6** on the next page.

Reduction goals for community GHG emissions can also be applied to government operations, which is why the CAP will combine the emissions figures of future forecast from the Community inventory and Government Operation inventory into one Countywide table (See **Table 7** for Totals).

**Table 6: Government Operations Emissions & Reduction Goals**

<b>Government Operations</b>	<b>2008 MTCO<sub>2e</sub></b>	<b>2020 MTCO<sub>2e</sub></b>	<b>2028 MTCO<sub>2e</sub></b>
2008 Baseline & BAU Forecast	15,600	16,610	17,270
Tehama County Reduction Goal for 2020 5%	—	14,820	—
Tehama County Reduction Goal for 2028 10%	—	—	14,040
Total Reduction from ABAU Forecast	—	-1,470	-1,820
Total Reduction need from 2008 & BAU Forecast to meet goal	—	-1,790	-3,230
<b>Remaining Reductions needed to meet goal</b>	—	<b>320</b>	<b>1,410</b>

### Unincorporated Countywide Emissions and Reduction Goals

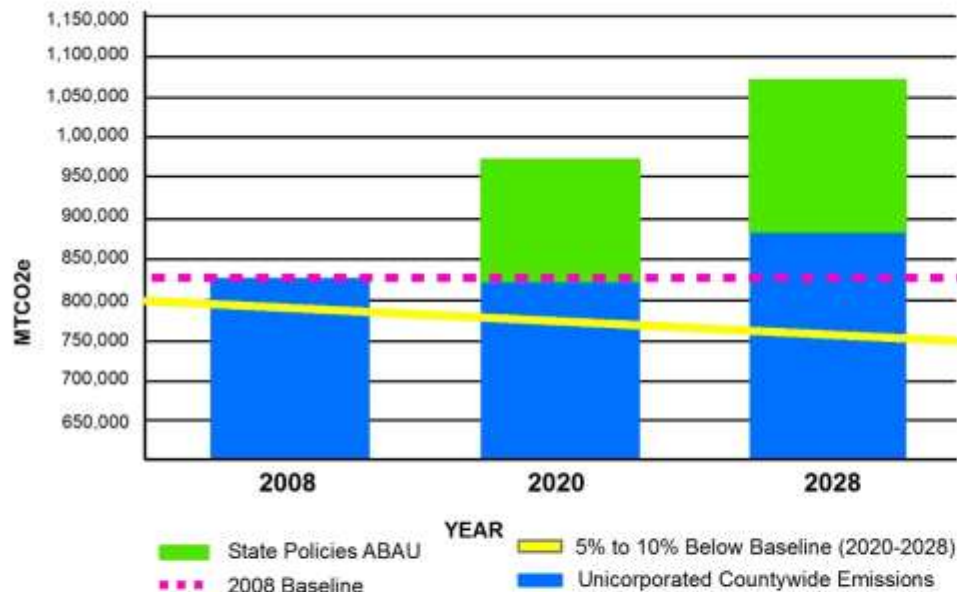
This section combines the total emissions (Baseline and Forecast conditions) for the Community sectors and Government Operation sectors into the Unincorporated Countywide category, which reveals the total for all Emissions and Reduction Goals outside of Cities, and State and Federal Lands. This has been done in order to provide a more complete picture of what is happening Countywide. As indicated above in the Community and Government Operations categories, the goal is to reduce emissions below the 2008 baseline by 5% for the 2020 target and another 5% for a total of 10% for the 2028 target. These categories were necessary to segregate inventory sectors and emission methodologies, of which, those results are now being combined into **Table 7** and are illustrated on the next page as **Figure 7**. Because the reduction strategies are sector specific and not category specific, the combination of the two categories will more clearly convey the County's achievements as a whole. Therefore, while each one of the line items strategy's and their effects will be catalogued for documentation reasons, the overall results will be combined into the Unincorporated Countywide category for reporting purposes.

**Table 7: Unincorporated Countywide Emissions & Reduction Goals**

<b>Unincorporated Countywide</b>	<b>2008 MTCO<sub>2</sub>e</b>	<b>2020 MTCO<sub>2</sub>e</b>	<b>2028 MTCO<sub>2</sub>e</b>
2008 Baseline & BAU Forecast	837,170	975,670	1,078,070
(15%) from Baseline is a Typical Governments Reduction Goal	—	(711,590)	(711,590)
Tehama County Reduction Goal for 2020 5%	—	795,311	—
Tehama County Reduction Goal for 2028 10%	—	—	753,453
Total Reduction from ABAU Forecast	—	-144,070	-201,240
Total Reduction need from 2008 & BAU Forecast to meet goal	—	-180,359	-324,617
<b>Remaining Reductions needed to meet goal</b>	—	<b>36,289</b>	<b>123,377</b>

As shown in **Table 7** above, the County has chosen a to reduce emissions below the 2008 baseline by 5% for the 2020 target and another 5% for a total of 10% for the 2028 target, which would equate to a community-wide target emission level of 795,311 MTCO<sub>2</sub>e by 2020 and 753,453 MTCO<sub>2</sub>e by 2028. Therefore, the County needs to reduce the unincorporated countywide emissions by 23% (180,359 MTCO<sub>2</sub>e) below forecast levels to achieve a 5% reduction below 2008 baseline levels in 2020, and 40% (324,617 MTCO<sub>2</sub>e) below forecast levels to achieve a 10% reduction below 2008 baseline levels in 2028. State policies already in place will provide a reduction of 144,070 MTCO<sub>2</sub>e for the 2020 target and a reduction of 201,240 MTCO<sub>2</sub>e for the 2028 target. Therefore, the County would need to reduce emissions by another 36,289 MTCO<sub>2</sub>e by 2020 and a 123,377 MTCO<sub>2</sub>e by 2028 in order to meet these goals, as shown on the next page on **Figure 9**.

**Figure 9: Unincorporated Countywide Emissions & Reduction Goals**



## Plan Progress

The County has taken numerous steps to prepare for climate change and support the states policies at the County level as demonstrated in the General Plan Update 2009-2029, which was adopted with numerous Air quality, Agriculture and Water Conservation Goals, Policies and Implementation Measure in 2009. The state has also taken action by passing a full range of environmental laws that are actively reducing emissions throughout California. This section identifies activities and requirements implemented at the state, County and local levels since 2008 and their benefits to reducing local emissions. These activities and requirements have already set the County on a path to achieve its reduction goals.

## GHG Laws

Following adoption of Assembly Bill (AB) 32, the California Air Resources Board (CARB) adopted the AB 32 Climate Change Scoping Plan (Scoping Plan), identifying a state-recommended reduction goal for local governments to reduce greenhouse gas emissions by approximately 15 percent from current levels by 2020. Several legislative Acts have been signed into law that support the land mark bill.

State, regional, and local laws, along with agencies tasked to local regulatory oversight, have influenced how and why GHG inventories, emissions and reductions are gauged in California. A brief description of the laws and credits that can be used towards the County's 2020 and 2028 emissions reduction goals is provided on the following page.



### **AB 1493 (2002) Pavley Vehicle Standards**

This Bill regulates and require manufacturers of new passenger vehicles to reduce tailpipe GHG emissions from 2009 to 2020. Benefits from implementation of the Pavley standards are quantified using the CARB EMFAC emissions model. The Low Carbon Fuel Standard (LCFS) calls for a reduction of at least 10% in the carbon intensity of California's transportation fuels by 2020. It should be noted that the LCFS is currently being challenged in the courts, CARB is actively implementing the LCFS, which is why it is included in this analysis. According to the Tehama County's inventory and analyses these standards apply for more efficient vehicles, which would reduce emissions in Tehama County by 110,940 MTCO<sub>2e</sub> in 2020, and 143,710 MTCO<sub>2e</sub> by 2028. Government Operation reductions are effect with 250 MTCO<sub>2e</sub> by 2020 and 350 MTCO<sub>2e</sub> by 2028 for a total reduction of the Unincorporated Countywide emissions by 2020 of 111,190 MTCO<sub>2e</sub> and 144,060 MTCO<sub>2e</sub> by 2028.

### **California Renewables Portfolio Standard**

The Renewables Portfolio Standard (RPS) was created by Senate Bill (SB) X 1-2, signed into law in 2011. It requires that 33% of California's electricity is generated from renewable sources by 2020. This policy reduces emissions from electricity use, including electricity used to distribute and process water and wastewater. As of 2012, PG&E's renewable energy generation made up 19% of the electricity portfolio. In 2020, cleaner energy from RPS would reduce emissions in Tehama County by 22,820 MTCO<sub>2e</sub> and 38,270 MTCO<sub>2e</sub> by 2028. Government Operation reductions are effect with 1,200 MTCO<sub>2e</sub> by 2020 and 1,470 MTCO<sub>2e</sub> by 2028 for a total reduction of the Unincorporated Countywide emissions by 2020 of 24,020 MTCO<sub>2e</sub> and 39,740 MTCO<sub>2e</sub> by 2028.

### **Title 24, Energy Efficiency Standards**

Title 24 is California's energy efficiency standards for new buildings, applied at the local level through the project review process. The most recent update to Title 24 occurred in 2010, with another update set to take effect on July 1, 2014. This policy will reduce electricity and natural gas use in new homes and nonresidential buildings. According to the administrative section of the Building Code (Green Code), the new energy and water efficiency standards should produce a green building which is estimated to reduce energy related consumption by 15%. Since these standards did not exist in 2008 during the baseline year, the GHG reduction benefits can be realized for 2020 and 2028. These standards for new buildings would reduce energy consumption, thus having a benefit by reducing GHG emissions by 8,840 MTCO<sub>2e</sub> in 2020 and 17,440 MTCO<sub>2e</sub> by 2028. Government Operation reductions are effect with 20 MTCO<sub>2e</sub> by 2020 and 20 MTCO<sub>2e</sub> by 2028 for a total reduction of the Unincorporated Countywide emissions by 2020 of 8,860 MTCO<sub>2e</sub> and 17,460 MTCO<sub>2e</sub> by 2028.

## Local Reduction Benefits (Community)

As shown in the Sector Specific Community Emissions Table below, state programs and requirements would reduce emissions by approximately 118,140 MTCO<sub>2e</sub> per year in 2020, and 163,050 MTCO<sub>2e</sub> per year by 2028. The majority of these reductions are due to the Pavley standards and the RPS. Considering the 2020 (17%) and 2028 (29%) above the 2008 baseline emissions levels identified in **Chapter 2**, the local benefit of these state reductions would reduce 2020 emissions in Tehama County to 1% below 2008 level and 2028 emissions to 5% above the baseline level.

**Table 8: Local Reduction Benefits of State Programs and Requirements on Community Emissions**

Sector	2008 MTCO <sub>2e</sub>	2020 MTCO <sub>2e</sub>	2028 MTCO <sub>2e</sub>	MTCO <sub>2e</sub> Percentage Change, 2008–2028
Residential built environment	133,110	173,270	194,330	46%
Nonresidential built environment	52,210	53,330	55,420	6%
Transportation	457,260	392,780	409,020	-11%
Off-road equipment	69,800	81,520	81,700	17%
Solid waste	7,260	9,310	10,980	51%
Water and wastewater	33,020	36,080	39,330	19%
Agriculture	65,010	66,280	66,700	3%
Other stationary sources	3,900	3,900	3,900	0%
<b>Total</b>	821,570	816,470	861,380	5%
<b>Percentage Change from 2008</b>	—	-1%	5%	5%

*Note: Due to rounding, totals may not equal the sum of the component parts.*

## Local Reduction Benefits (Government Operations)

As Shown in the Sector Specific Government Operations Table on the next page, state programs and requirements also affect government operations emissions, which would be reduced by approximately 14,930 MTCO<sub>2e</sub> per year in 2020, and 15,180 MTCO<sub>2e</sub> per year by 2028. Considering the 2020 and 2028 emission forecasts are 6% and 11% above the 2008 baseline emissions levels identified in **Chapter 2**, the local benefit of these state reduction measures would reduce 2020 government operations emissions in Tehama County to about 4% below 2008 levels and 2028 emissions to 3% below the baseline level. The majority of reductions come from the Pavley and LCFS standards, which reduce emissions from employee commutes and the County's fleet, as newer, more fuel- efficient vehicles are purchased by the County and by staff.

**Table 9: Local Reduction Benefits of State Programs and Requirements on Government Operations Emissions**

Sector	2008 MTCO <sub>2</sub> e	2020 MTCO <sub>2</sub> e	2028 MTCO <sub>2</sub> e	MTCO <sub>2</sub> e Percentage Change, 2008–2028
Facilities	2,270	2,140	2,050	-10%
Public lighting	20	20	20	0%
Fleet	2,360	1,730	1,590	-33%
Solid waste	260	260	260	0%
Landfill	7,800	8,740	9,400	21%
Commute and travel	2,890	2,040	1,860	-36%
<b>Total</b>	<b>15,600</b>	<b>14,930</b>	<b>15,180</b>	<b>-3%</b>
<b>Percentage Change from 2008</b>	—	-4%	-3%	-3%

*Note: Due to rounding, totals may not equal the sum of the component parts.*

## Local Achievements

Many of Tehama County's General Plan, Goals, Policies and Implementation measures result in GHG Emissions reductions. The Local Achievements section is a brief snap shot of the benefits of the General Plans Guiding principles and emissions reduction trends to date. It shows and calculates the specific practices and their effects on reducing emissions through 2020 to 2028.

## Analyses of Achievements

The Achievements are a result of General Plan Goals, Policies and Implementation Measure of which have aided in the initiated or completion of said trend that are identified below. Tehama County has aided the reduction of emissions through numerous actions, this section describes achievement and trends throughout Tehama County that can be measured based on generally accepted assumptions and methods.

- **Solar photovoltaic arrays (California Solar Initiative (CSI) and Red Bluff High School).** This accomplishment quantifies GHG reductions that occur from solar photovoltaic (PV) installations. Quantified reductions account for solar arrays installed via the CSI, which provided rebates for solar installations, and over 3,500 panels (250 watt) installed in 2011 at Red Bluff High School (845 Kw).
- **4.4% a Year cumulative Orchard Planting Trend/Conversion to less GHG-intensive crops such as orchards (Sequestration rate credit).** According to the post AB 32

Climate Action Scoping Plan adopted by California in 2008 and the first amended version in 2011 indicates that there are many GHG emission reduction and carbon sequestration opportunities that could be realized in the agriculture sector. Efforts to reduce GHG emissions and enhance carbon sequestration on natural and working lands also have significant economic, social, and environmental co-benefits, and can aid progress on efforts to prepare for climate change. These opportunities may yield benefits to growers such as cost & resource savings.

### Unincorporated Countywide Emission Credits

Now that the State and local credits have been calculated, they are expected to help reduce the 2020 and 2028 community emissions and government operations emission well below the below baseline levels. The benefits of the state and local achievements have been itemized below in **Table 10**.

**Table 10: Local Achievements and CAP Credits**

Activities and Achievements	MTCO <sub>2</sub> e	
	2020	2028
<b>Emissions with state reductions</b>	831,600	876,830
Solar PV arrays (CSI and Red Bluff High School)	-390	-390
4.4% a Year Cumulative Orchard planting trend/conversion to less GHG-intensive crops such as Orchards (Sequestration rate credit)	-22,326	-95,355
<b>Total reductions</b>	<b>-22,716</b>	<b>-95,745</b>
Emissions with state and local reductions	808,884	781,085
<b>Percentage change from 2008</b>	<b>-3.4%</b>	<b>-6.7%</b>
Emissions reduction goal below the 2008 Baseline	-5%	-10%
2020 Target emissions level of 5% for the Countywide Unincorporated Area (Community and Government Operations categories combine)	795,311	—
2028 Target emissions level of 10% for the Countywide Unincorporated Area (Community and Government Operations categories combine)	—	753,453
Remaining reductions needed to achieve goal (MTCO <sub>2</sub> e)	13,573	27,632
Note. 2008 Countywide Baseline emissions are 837,170 MTCO <sub>2</sub> e.		

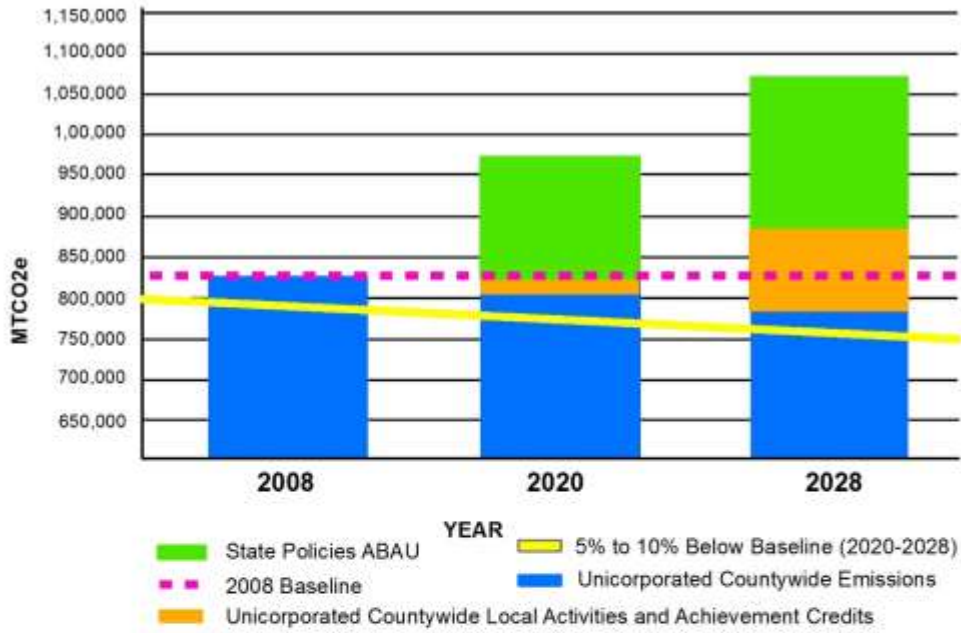
While the Unincorporated Countywide credits noted above in **Table 10** provide a tangible benefit, it should be noted that the County has been implementation change through the Updated 2009-2029 General Plan. The development of this CAP is one of those implementation that will reduce costs and emissions within Tehama County. Most of the policies and practices being carried out through the General Plan cannot be directly tied to a fixed tangible GHG reduction credit, due to limited information. None the less, these policies as indicated below make it clear that Tehama County is doing its part to combat climate change.

- Encourage the use of cost-effective and innovative emission-reduction technologies in building components and design. Such technologies may include the use of solar equipment, LED and compact florescent lighting, and the use of external electric outlets to allow for the use of non-gasoline powered lawn equipment.
- Promote the implementation of sustainable design strategies for “cool communities,” such as energy-conserving design and construction techniques, light-colored paving, the use in increased amounts of insulation, dual-pane windows, and the planting of shade trees along south and west building exposures.
- Encourage the use of “EPA Energy Star”-certified appliances.

## A Brief Synopsis

Quantifying the benefits of state legislation and progress within the County towards the CAP goals, helps the community better understand the anticipated GHG emissions from the activities of residents, employees, businesses, and government. As reported in **Table 10** (above) and **Figure 10** (below), Tehama County has chosen to reduce emissions below the 2008 baseline by 5% for the 2020 target and another 5% for a total of 10% for the 2028 target, which would equate to a community-wide target emission level of 795,311 MTCO<sub>2e</sub> by 2020 and 753,453 MTCO<sub>2e</sub> by 2028 (Yellow Line or Pink dashed-line below). As indicated above, the CAP analyses is starting to reveal a pattern that will lead to not only achieving the 2020 and 2028 reduction goals, but possibly surpassing them as the CAP’s reduction strategy assumptions are incorporated into the study and analyses. The current credits, which add to the reduction goals are due to the County’s General Plan Goals, Policies and Implementation Measures that not only coincide with state legislation but also protect, encourage and enhance various self-sustaining industries within the unincorporated area of the County. In fact, these very practices have help offset the Unincorporated Countywide (Community and Government Operations Categories Combined) 2020 target goal by 22,716 MTCO<sub>2e</sub> and 95,745 MTCO<sub>2e</sub> for the 2028 emissions targets. For more information please see Appendix B and C. The achievement noted above validate the County’s progress towards its goals, and therefore it is evident that Tehama County’s General Plan is being executed including Implementation Measure OS-25b that states “Use the emissions guidelines produced by the California Air Resources Board and TCAPCD to ensure that County facilities and operations comply with mandated measures”, these guidelines include but are not limited to the Air Resources Board’s Climate Change Scoping Plan.

**Figure 10: Unincorporated Countywide Emissions & Reductions**



## Chapter 4 A Means to Reduction

### Overview

To achieve the Countywide GHG reduction goals, the strategies within this chapter will be used as a means in which the CAP and its stakeholders may reduce emissions within the County's public and private sectors. Emissions may be reduced through a number of means, but Tehama County's governing body cannot be the only champion. It will take investment in the private sector to yield result and make the changes necessary for the CAP to realize its goals. The future activities effected may including the miles traveled by vehicles, sources of electricity, and the amount of energy used in homes and businesses. The following sections of this chapter present the County's plan to incentivize additional changes in these activities and, as a result, to reduce GHG emissions. Emission reduction strategies are designed to reduce the County's GHG emissions on a plan level as presented in the CAP, but will also provide project level strategies and standards in order for the County to do its part in combating climate change at an adequate level. Therefore, emission reduction strategies within **Chapter 4** will also act as Tehama County's performance based GHG impact calculation standards as allowed and encouraged under the California Environmental Quality Act (CEQA) §15064.4(a). The CAP and its nexus with offsetting environmental effects allows the qualified GHG reduction strategies to be incorporate as incorporate as performance based GHG calculation and impact standards under the California Environmental Quality Act (CEQA) §15064.4(a), in order to meet the test for performance based standards as outline below, a projects actions as a whole would need to support and be consistent with at least 1 reduction strategy from each applicable topic area.

Tehama County acts as the lead agency within the unincorporated area of Tehama County for all projects that meet its criteria under CEQA Section 15051. Lead agencies will be the agency with general government powers, such as a city or county, rather than an agency with a single purpose or limited scope of regulation. The lead agency is responsible for approving and/or carrying out projects including projects that have the potential to cause adverse and/or significant impacts to air quality/climate change (SB 97 Greenhouse Gas Emissions/ Analyses and findings). Under CEQA statutes and guidelines, lead agencies are encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effect(s) resulting from a discretionary project (CEQA Guideline Sections 15064.7). As indicated in CEQA Guidelines Section 15064.7(a) THRESHOLDS OF SIGNIFICANCE-"A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant." It is within this 2008 Climate Action Plan Study and **Chapter 4** Strategies to Reduce Emissions/Performance Standards that the County will rely on to maintain a framework and GHG calculation parameters regarding GHG impacts for Green House Gas Emissions relating to County discretionary projects that have the potential to affect the Earth's atmosphere and thus the environment. The County of Tehama will use these defined and adopted performance impact calculation standards in its lead agency role for the purposes of determining what type of

Environmental Document, if any will be prepared (CEQA Guideline Sections 15367. LEAD AGENCY).

#### **§15064.4. Determining the Significance of Impacts from Greenhouse Gas Emissions.**

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

(2) Rely on a qualitative analysis or performance based standards.

The County of Tehama has prepared this document to not only combat climate change, but to also identify performance based Greenhouse Gas Emissions impact calculation standards in order to help streamline and simplifying development review through the clarification of Tehama County's Greenhouse gas impact framework and GHG calculation parameters regarding GHG quantification standards for Green House Gas Emissions relating to new projects that are consistent with the CAP.

### **Foreseeable Emissions Reductions**

While the effects of State Legislation and Local Achievement Credits have already reduced the Unincorporated Countywide emissions by 3.4% below the 2008 baseline for the 2020 target and a reduction of 6.7% for the 2028 target year, the reduction strategies included in this chapter identify actions that can be implemented to further reduce emissions. As indicated in the Tehama County General Plan, strategies will continue to focus on agriculture, renewable energy generation, and voluntary energy efficiency upgrades, which will achieve more GHG reductions. **Table 11** summarizes anticipated emissions reductions from 2020 through 2028 with the incorporation of the reduction strategies outlined in **Chapter 4** and analyzed in **Appendix B**.

Tehama County has chosen to reduce emissions below the 2008 baseline by 5% for the 2020 target and another 5% for a total of 10% for the 2028 target, which would equate to a community-wide target emission level of 795,311 MTCO<sub>2</sub>e by 2020 and 753,453 MTCO<sub>2</sub>e by 2028. Implementing the CAP would help reduce community emissions below 2008 levels by 2020 and 2028, allowing Tehama County to surpass its reduction goals. As indicated in **Table 11 and shown in Figure 11**, the CAP strategies (**Chapter 4**) and assumptions (Appendix B) reduce the Unincorporated Countywide Emissions by another 100,062 MTCO<sub>2</sub>e by 2020 and 153,860 MTCO<sub>2</sub>e by 2028 resulting in a 15.3% reduction below the 2008 baseline for 2020

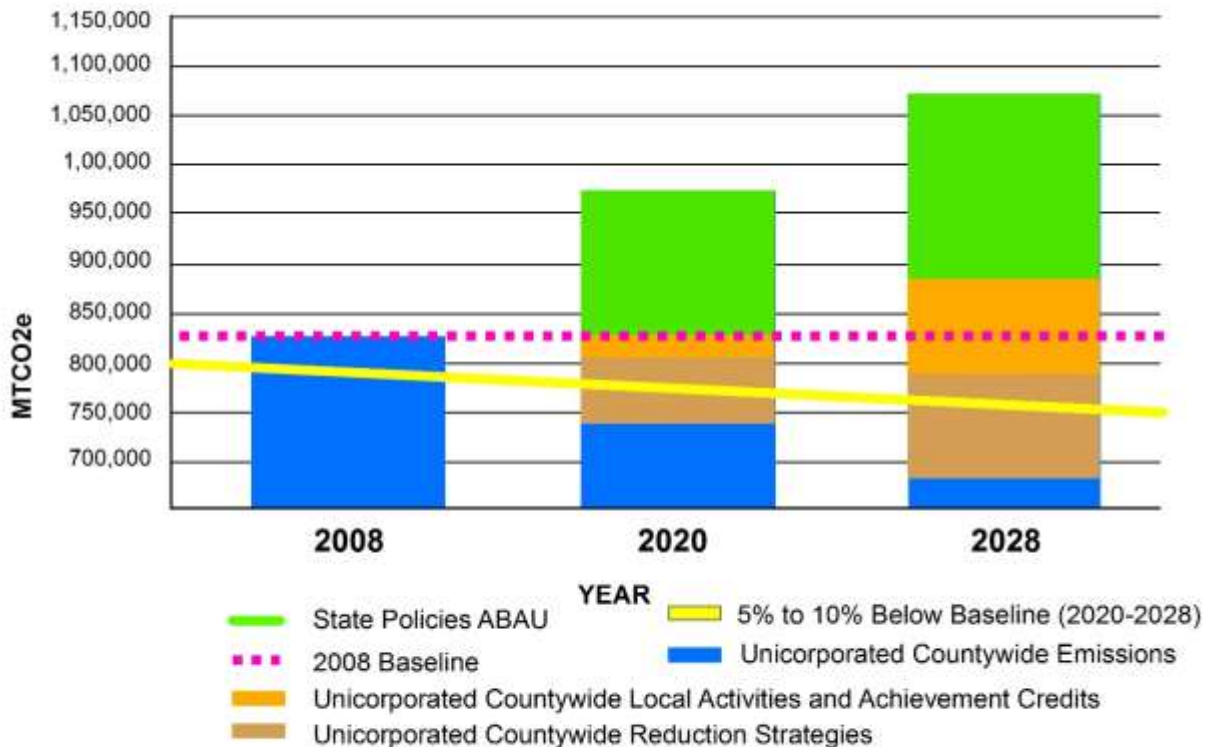


and an 25% reduction below the 2008 baseline for 2028. These estimates are assumptions based on the best available accounting and reporting standards, methodologies and practices. The largest share of these reductions comes from energy efficiency and renewable energy strategies, although reduction strategies and credits in all sectors including state acts, and local achievements are needed to meet and exceed the 2020 and 2028 goals.

**Table 11: Anticipated 2020 and 2028 Emissions Reductions from Climate Action Plan Strategies**

Activities and Accomplishments	MTCO <sub>2</sub> e	
	2020	2028
<b>Emissions with State Reductions</b>	<b>831,600</b>	<b>876,830</b>
<b>Emissions Forecast with State and Local Reductions</b>	<b>808,884</b>	<b>781,085</b>
Energy Efficiency and Renewable Energy Reduction Strategies	-89,868	-141,546
Alternative Fuel Vehicles and Equipment Reduction Strategies	-944	-1,412
Transpiration Reduction Strategies	-2,400	-2,864
Agriculture Reduction Strategies	-1,318	-1,396
Solid Waste Reduction Strategies	-5,232	-5,628
Government Reduction Strategies	-600	-1,014
<b>Total Reduction from CAP Reduction Strategies</b>	<b>-100,062</b>	<b>-153,860</b>
Emissions Forecast with State, Local and CAP Reduction Strategies	708,822	627,225
2020 Target emissions level of 5% for the Countywide Unincorporated Area (Community and Government Operations categories combine)	795,311	—
2028 Target emissions level of 10% for the Countywide Unincorporated Area (Community and Government Operations categories combine)	—	753,453
<b>Percentage reduction below 2008 Baseline Level</b>	<b>15.3%</b>	<b>25%</b>
Note. 2008 Baseline emissions are 837,170 MTCO <sub>2</sub> e.		

**Figure 11: 2008-2028 Unincorporated Countywide Emissions & All Reduction Credits**



## Reduction Strategies

When sufficient information is available, emissions reduction strategies have been quantified to indicate the contribution that these strategies will have on the Unincorporated Countywide GHG emissions. The use of industry accepted methods to analyze and calculate the strategies emission reductions validate and justify their concurrent purpose as performance based Greenhouse Gas Emissions Threshold of Significance or performance standards. In some cases, the GHG reduction benefit is not quantifiable on its own but is included in another strategy. Other strategies may not have a direct GHG reduction benefit but support the overall goals of the General Plan and CAP. Specific quantification calculation information is available for each quantified strategies in **Appendix B**.

## Reduction Strategy Topics

To achieve the Unincorporated Countywide GHG emissions reduction goals presented herein, the County will need to implement the reduction strategies presented in this chapter. The reduction strategies are organized by topic area and goal to align the reduction strategies with the sources of GHG emission, as present in the GHG inventory (**Chapter 2**). Reduction strategy topic areas are:

- Energy efficiency and renewable energy (E)
- Alternative fuel vehicles and equipment (AF)

- Transportation (TR)
- Agriculture (A)
- Solid waste (SW)
- Government Operations (GO)

## Reduction Strategy Organization

Each topic includes a purpose, strategy, supportive action(s), roles, result (GHG reduction amount), area of benefit and General Plan Conformity. Purpose describes the topic and area of focus. Strategies address specific topics within each topic area at a greater level of detail than the purpose. Supportive Actions provide specific detailed steps to implement the strategies. Purposes, strategies, and supportive actions were developed using a systematic process that considers specific opportunities and constraints that are relevant to Tehama County, while recognizing that many strategies may provide a co-benefit to segments of the community. The General Plan Conformity “General Plan” subsection relates to the General Plan’s goals, policies, and implementation measures that are conveyed through, and consistent with the Climate Action Plan’s (CAP) strategies. Therefore, additional factors such as area of benefit and the role of county staff, stakeholders, partners, and community members, which all have to play a part in order for this plan to be successful.

## Analyses Methods

Emissions reduction estimates have been calculated for each strategy for the year 2020. The emissions reduction benefit of each strategy is determined by changes in operation, activity, or efficiency. The 2008 baseline inventory and 2020 forecast serve as the foundation for quantifying reduction strategies. Activity data from the inventory (e.g., VMT, kWh of electricity) is used with performance metrics to calculate the emissions reduction potential of each strategy. Performance metrics provide specific participation or efficiency levels for implementation of each strategy (e.g., number of participating households, total renewable energy installed). This approach ensures that emissions reductions relate to baseline and future activities in the community.

The CAP Monitoring Program presented in **Chapter 6** provides greater detail regarding primary responsible agencies, supporting agencies, and an estimate of the likely expense and staff time that may be necessary to implement each strategy, which will present additional information to enable County staff to prioritize and implement strategies.

## Strategy’s by Topic

### **The Purpose of Energy Efficiency and Renewable Energy (E) Strategies**

These strategies are intended to support and enhance energy performance while reduce energy consumption. Electricity, natural gas, and propane are used to heat, cool, and light buildings, as well as to operate appliances and machinery. Consistent with the California Energy Commission (CEC) preferred loading order, the strategies and actions identified in this topic area first provide opportunities to conserve energy and maximize energy efficiency, then identify opportunities for residents and businesses to utilize renewable energy sources. The

key strategies in this topic area (EN6) seeks to help land and building owners capitalize on non-prime farmland and manufacturing facility roof space to generate renewable energy.

### **E1. Connect low-income homeowners to financing and resources for retrofits.**

Low-income households are especially sensitive to energy costs because they generally occupy older, more energy-inefficient housing units and spend a larger proportion of their income on energy. By assisting with low-income household retrofits, the County can simultaneously reduce emissions and increase low-income families' capacity to maintain safe and comfortable households despite volatile energy prices and increasing temperatures.

#### **Supportive Actions:**

- Work with nonprofits to identify highest opportunities for a successful low-income program.
- Encourage workforce training programs to provide free weatherization services to qualified households.
- Partner with workforce training programs such as Living Elements and Valley Contractors Exchange.
- Leverage federal funding for home improvements, such as Community Development Block Grants (CDBG), to improve the energy efficiency and livability of Tehama County's lowest-income households.

#### **Role:**

- County: Coordinates and promotes program
- Others: 559 low-income households undergo weatherization (10% of low-income households)

#### **Results:**

- **2020 GHG Reduction:** -441 MTCO<sub>2e</sub>
- **2028 GHG Reduction:** -1,543 MTCO<sub>2e</sub>

#### **Area of Benefit:**

- Low-income households

#### **General Plan Goals, Policies & Implementation Measures:**

OS-2, OS-2.6a, OS-2.6b, OS-2.6d, OS-2.6f

### **E2. Support retrofits in existing nonresidential uses with an emphasis on manufacturing facilities.**

In Tehama County, nonresidential buildings use electricity and natural gas for heating, cooling, lighting, and other functions. Lacking extensive business license records, it is critical that the County initiate, maintain, and enhance collaborative partnerships with local businesses to achieve energy efficiency and economic development objectives. This strategy

seeks to increase long-term profitability and viability of businesses, with an emphasis on the manufacturing sector, by facilitating energy efficiency retrofit financing and rebate opportunities.

#### **Supportive Actions:**

- Develop a voluntary educational program and business inventory to identify energy- and cost-saving opportunities.
- Promote Property Assessed Clean Energy (PACE) financing in partnership with the local chambers of commerce, utilities, and local businesses.
- Partner with utilities and local business leaders to connect local businesses with advanced rebates and assistance for energy retrofits. For example, the County may collaborate with PG&E to map local high energy users and guide County outreach in collaboration with PG&E.
- Conduct an annual awards event to highlight local businesses completing retrofits and saving energy.

#### **Roles:**

- County: Operates educational program and promotes collaboration
- Others: 72 businesses participate in retrofits and/or retrocommissioning (42% of businesses in nonagricultural or food processing sectors)

#### **Results:**

- **2020 GHG Reduction:** -2,585 MTCO<sub>2</sub>e
- **2028 GHG Reduction:** -5,036 MTCO<sub>2</sub>e

#### **Area of Benefit:**

- Nonresidential buildings using electricity and natural gas for heating, cooling, lighting, and other functions.

#### **General Plan Goals, Policies & Implementation Measures:**

OS-2, OS-2.6a, OS-2.6b, OS-2.6d, OS-2.6f

### **E3. Work with utility providers to encourage nonresidential appliance upgrades.**

Businesses use electricity and natural gas to power appliances ranging from chillers and ovens in restaurants and computers in offices to machinery in factories. Efficient appliances require less fuel for successful operation, saving businesses money and lowering emissions across the county. Strategy E5 promotes the purchase of ENERGY STAR and other energy-efficient appliances.

**Supportive Actions:**

- Track the number of energy-efficient or smart-grid-integrated appliances installed in new development and major nonresidential remodels through the County's permit tracking system.
- Work with third-party providers and utility companies to provide low- to no-cost rebates and incentives for nonresidential appliances and equipment.

**Role:**

- County: Tracks and promotes appliance upgrades
- Others: 27 businesses upgrade appliances (20% of businesses built by 2012)

**Results:**

- **2020 GHG Reduction:** -680 MTCO<sub>2</sub>e
- **2028 GHG Reduction:** -1,960 MTCO<sub>2</sub>e

**Area of Benefit:**

- Nonresidential buildings using electricity and natural gas for power appliances ranging from chillers and ovens in restaurants and computers in offices to machinery in factories.

**General Plan Goals, Policies & Implementation Measures:**

OS-2, OS-2.6a, OS-2.6b, OS-2.6d, OS-2.6f

**E4. Encourage new nonresidential buildings to meet and exceed CALGreen standards for energy efficiency, water conservation, and passive design.**

Although there is an upfront cost to design and build more energy- and water-efficient buildings, such efforts result in lower operating costs for the life of the structure. This strategy encourages efficient new buildings through outreach and opportunities to mitigate environmental impacts.

**Supportive Actions:**

- Update development checklists and provide guidelines to support optimal energy efficiency.
- Educate builders through working group meetings and CALGreen workshops.
- Partner with local building supply stores to promote cost-effective materials that would help achieve CALGreen Tier 1.
- Seek grants or external funding to reduce building permit costs for buildings that meet CALGreen Tier 1.
- Identify CALGreen Tier 1 or 2 standards as preferred mitigations for the environmental impacts of new nonresidential projects.
- Maintain voluntary CALGreen Tier 1 standards as an option for new buildings.

**Role:**

- County: Promotes energy-efficient building program
- Others: Developers and Contractors

**Results:**

- **2020 GHG Reduction:** Supportive
- **2028 GHG Reduction:** Supportive

**Area of Benefit:**

- New nonresidential buildings using electricity and natural gas will benefit from meeting and exceed CALGreen standards for energy efficiency, water conservation etc.

**General Plan Goals, Policies & Implementation Measures:**

OS-2, OS-2.6a, OS-2.6b, OS-2.6c, OS-2.6f

**E5. Expand distributed generation, renewable energy systems for new residential development.**

This strategy is a blend of regulatory streamlining efforts intended to increase renewable energy generation in new residential development sites. The strategy focuses on the renewable energy siting potential of large, master-planned communities. County staff works with developers as master-planned communities proceed through plan review, providing excellent opportunities to discuss appropriate renewable energy siting. This strategy also provides actions to expand the County's efforts to encourage renewable energy system installations within single-family and multi-family development projects.

**Supportive Actions:**

- Encourage all new discretionary development projects consisting of more than 500 residential units to achieve zero net energy using solar PV and high-efficiency construction.
- Offer expedited processing for developers providing on-site solar, such as participants in the state's Homebuyer Solar Program.
- Encourage all new discretionary multi-family developments to offer solar options or provide off-site power purchase agreements, following the Homebuyer Solar Program.
- Encourage all new discretionary projects to include solar prewiring for PV.

**Role:**

- County: Expedites processing and promotes program
- Others: New households constructed to net-zero energy standards ( 459 or 13% of all new households constructed by 2020 and 1,593 or 23% of new homes by 2028)

**Results:**

- **2020 GHG Reduction:** -1,005 MTCO<sub>2</sub>e
- **2028 GHG Reduction:** -2,836 MTCO<sub>2</sub>e

**Area of Benefit:**

- Renewable energy siting potential of large, master-planned communities.

**General Plan Goals, Policies & Implementation Measures:**

OS-2, OS-2.6a, OS-2.6b, OS-2.6e, OS-2.6f

**E6. Support distributed generation in new nonresidential development to reduce on-site energy use.**

This strategy provides actions to incentivize renewable energy installations on new nonresidential projects as they progress through the permitting process. Incentives, streamlined review, expedited processing, and pre-wiring could increase the amount of renewable energy sited in new nonresidential buildings in the County.

New nonresidential developments are also encouraged to maximize roof space in anticipation of future solar PV. These actions will remove barriers to installing solar PV on nonresidential buildings that are most likely to realize benefits from on-site energy. Financing for solar PV can be accomplished through initial construction financing, and could reduce utility bills for energy-intensive industries.

**Supportive Actions:**

- Encourage distributed generation systems, targeting large projects most likely to benefit from on-site energy, including large nonresidential development greater than 10,000 square feet.
- Identify opportunities for distributed generation systems early in the development review process for discretionary projects.
- Offer expedited processing for developers providing on-site solar.
- Encourage new nonresidential development, subject to discretionary review, to prewire for solar PV systems and to maximize roof space to accommodate future rooftop solar installations.

**Role:**

- County: Encourages solar PV and expedites processing
- Others: 440 kW of new nonresidential solar PV potential

**Results:**

- **2020 GHG Reduction:** -136 MTCO<sub>2</sub>e
- **2028 GHG Reduction:** -272 MTCO<sub>2</sub>e



**Area of Benefit:**

- New nonresidential project incentivizes for renewable energy installations as they progress through the permitting process.

**General Plan Goals, Policies & Implementation Measures:**

OS-2, OS-2.6a, OS-2.6b, OS-2.6e, OS-2.6f

**E7. Encourage the voluntary installation of distributed generation, renewable energy systems throughout the County.**

Whereas strategies E5 and E6 focus on solar PV in new development, this strategy supports solar PV in existing development through additional actions to help residents and businesses install renewable energy installations on existing buildings. The County will achieve this by streamlining the permit review process and tying permit costs to the size of the proposed installation.

**Supportive Actions:**

- Revise the permit fee to reflect size of PV installation.
- Streamline the review and approval of solar PV panels subject to the Solar Rights Act through online permitting and easily accessible educational materials.

**Role:**

- County: Facilitates program
- Others: 714 pre-2008 homes with solar PV arrays (4% of homes built before 2008), and 13,770 kW of solar PV on pre-2008 nonresidential buildings or sites

**Results:**

- **2020 GHG Reduction:** -6,391 MTCO<sub>2</sub>e
- **2028 GHG Reduction:** -12,227 MTCO<sub>2</sub>e

**Area of Benefit:**

- Existing residential and nonresidential project incentivizes for renewable energy installations as they progress through the permitting process.

**General Plan Goals, Policies & Implementation Measures:**

OS-2, OS-2.6a, OS-2.6b, OS-2.6e, OS-2.6f

**E8. Promote energy-efficiency programs and streamline on-site solar PV installations for agricultural and food processing facilities to improve operations and profitability.**

Activities related to the agricultural sector and agricultural processing are among the highest energy consumers in the County. PG&E reports estimate that in 2008, agriculture and food processing facilities accounted for approximately 39% of nonresidential kWh and 64% of

nonresidential therms in Tehama County. High energy use can be one of the top line items in a company's operating expenses. Since agriculture and related sectors are critical components of the local economy, this strategy directs the County to work with businesses to understand their energy needs and potential for savings, and then to collaboratively identify strategies to maximize efficiency. This strategy also provides the opportunity for businesses and County staff to work with PG&E to develop locally tailored, cost-effective energy reduction actions that meet the needs of Tehama County industries, including rice dryers and businesses with other energy-intense agricultural processing facilities.

Additionally, the County includes large areas of non-prime land and facilities with large roof surfaces ideally suited for siting of solar PV panels. As part of this strategy, the County will simplify the process for agricultural operations to provide their own electricity using solar PV by streamlining projects limited to 5 acres of PV per parcel or equivalent roof space. This will solidify the County's efforts to streamline renewable energy through development of a solar PV overlay, based on future technical studies to identify appropriate renewable energy sites.

#### **Supportive Actions:**

- Partner with PG&E to develop a localized, energy-efficiency outreach effort for agricultural processing industries reflecting characteristics of local operations and available financing.
- Provide resources on rebates and financing for appliances and equipment upgrades through stakeholder outreach, including collaboration with utility companies such as PG&E.
- Connect third-party energy-efficiency providers to provide free to low-cost equipment to eligible businesses and large energy users.
- Adopt a solar energy zoning ordinance to simplify the installation of solar PV in non-prime farmland that would serve on-site agricultural and manufacturing uses. The zoning specifications will expedite the development of solar PV in high opportunity areas while protecting prime farmland and other environmental resources.

#### **Role:**

- County: Provides education and expedites solar installations
- Others: 28 food processing operations implement energy efficiency strategies, and up to 490 acres of rooftops, prime and non-prime agricultural land install solar PV (0.0005% of agricultural land or rooftops used for solar panels)

#### **Results:**

- **2020 GHG Reduction:** -78,630 MTCO<sub>2</sub>e
- **2028 GHG Reduction:** -117,672 MTCO<sub>2</sub>e

**Area of Benefit:**

- Existing Processing Plants that would receive project incentives for renewable energy installations outreach and educational forums while they progress through the permitting process.

**General Plan Goals, Policies & Implementation Measures:**

OS-2, OS-2.6a, OS-2.6b, OS-2.6e, OS-2.6f

**The Purpose of Alternative Fuel Vehicles and Equipment (AF) Strategies**

On-road vehicles and off-road equipment consume fossil fuels. Fuel used by on-road vehicles can be reduced with a more efficient fleet including electric vehicles and partially electric hybrid vehicles. Fuel used in off-road equipment for construction and lawn or garden equipment can be reduced through operations that are more efficient and by transitioning to alternative fuel sources to power equipment. This topic area identifies best practices and opportunities to increase use of alternative fuels and fuel-efficient vehicles and equipment.

**AF1. Expand the use of alternative and clean-fuel vehicles.**

Transportation accounted for almost 56% of 2008 community baseline emissions. Alternative fueled vehicles produce fewer GHG emissions, but tend to have substantial barriers to entry for most households. This strategy provides actions to lower those barriers to entry by facilitating and expanding the use of alternative and clean-fuel vehicles.

**Supportive Actions:**

- Support use of neighborhood electric vehicles, such as low-speed golf carts or other personal neighborhood electrical vehicles.
- Encourage new nonresidential buildings, subject to discretionary review, to provide electric vehicle prewiring or conduit.
- Update zoning provisions to encourage alternative fuel stations.

**Role:**

- County: Supports and promotes program
- Others: 443 households with a neighborhood electric vehicle (2% of homes), and 7 public EV charging stations

**Results:**

- **2020 GHG Reduction:** -224 MTCO<sub>2e</sub>
- **2028 GHG Reduction:** -753 MTCO<sub>2e</sub>

**Area of Benefit:**

- Promote alternative fuel vehicles by increasing the supply of alternative fuel supporting facilities.

**General Plan Goals, Policies & Implementation Measures:**

OS-2.6, OS-2.6g

***AF2. Coordinate with the Tehama County Air Quality Management District to adopt construction mitigation requirements for all construction projects.***

Heavy construction equipment and machinery tend to be large GHG emitters as well as emitters of criteria air pollutants, which have health impacts on surrounding residents. Certain operating procedures can reduce engine running time without affecting productivity. This strategy provides management practices to help construction equipment operators reduce fuel use and cut emissions.

**Supportive Actions:**

- Applicants for projects subject to discretionary review shall be encouraged to choose one of the following:
- Reduce construction equipment idling to 3 minutes.
- As practical, use clean or alternative fuel equipment.

**Role:**

- County: Facilitates program
- Others: Half (50%) of new commercial equipment operated in the County to achieve a 40% reduction in idling time

**Results:**

- **2020 GHG Reduction:** -720 MTCO<sub>2e</sub>
- **2028 GHG Reduction:** -659 MTCO<sub>2e</sub>

**Area of Benefit:**

- The increase in air quality.

**General Plan Goals, Policies & Implementation Measures:**

OS-2.1, OS-2.1c, OS-2.5 OS-2.5a, OS-2.5g, OS-2.5f, OS-2.6i

**The Purpose of Transportation (TR) Strategies**

Transportation is the largest nonagricultural source of emissions in the County; a substantial portion of these emissions come from employee commutes. Although transportation is a large emissions sector, achieving emissions reductions in transportation is challenging in a large, dispersed rural community where residents and employees largely rely on autos for daily trips. The County has adopted General Plan policies to support more compact land use

patterns and encourage alternative travel modes. Recognizing the challenges inherent to the transportation sector, this CAP supplements adopted General Plan policies and identifies one additional program to reduce emissions from work-related travel and resulting emissions.

**TR1. Create a transportation demand management program for businesses throughout Tehama County directed toward employers with more than 50 employees (large employers) with voluntary actions for smaller employers.**

The County will encourage all large employers to implement a transportation demand management (TDM) program to reduce drive-alone trips and support ridesharing, public transit, walking, and bicycling. The County will recommend a suite of TDM strategies that each large employer may implement, including but not limited to transit subsidy passes, employer rideshare assistance, transit and bicycle subsidies, emergency ride home services, telecommute/flex commute options, and car- and bike-sharing solutions.

**Supportive Actions:**

- Work in collaboration with TCAPCD and local chambers of commerce to promote TDM strategies.
- Develop guidelines for Tehama County that recommend appropriate TDM strategies for local businesses.
- Develop an informational brochure highlighting employer-based TDM strategies with available programs and provide as outreach to local businesses.
- Encourage existing employers and small employers to participate in TDM.
- Create an annual survey to track employee commute trends for all participating businesses.
- Connect employers with regional transit resources and partners, working with partners such as the TRAX and Tehama Regional Transit.
- Encourage public agencies to provide facilities for carpooling programs at appropriate locations.
- County: Monitors program, provides education, creates guidelines, and facilitates collaboration
- Others: 330 participating employees (4% of employees in the Unincorporated County)

**Results:**

- **2020 GHG Reduction:** -2,400 MTCO<sub>2</sub>e
- **2028 GHG Reduction:** -2,864 MTCO<sub>2</sub>e

**Area of Benefit:**

- The increase in air quality

**General Plan Goals, Policies & Implementation Measures:**

CIR-5, CIR-5.1, CIR-5.1a, CIR-5.1b

**The Purpose of Agriculture(A)Strategies**

Agriculture is an important GHG emissions and sequestration source to be considered and quantified at the local, state, and federal levels. Nationwide, agricultural activities were the single largest source of all nitrous oxide (N<sub>2</sub>O) emissions, contributing almost 68% of all N<sub>2</sub>O. Further, agriculture contributes approximately 30% of all methane (CH<sub>4</sub>) emissions nationwide (US Environmental Protection Agency 2011). The agricultural sector is also an important local leader in achieving emissions reductions, reducing emissions and sequestering emissions as part of the business-as-usual practice. These changes have come as a practical response to changing demands, costs of supplies, and competitive economic decisions. Agricultural practices implemented to date have also resulted in significant GHG credits for the County, as outlined in the Local Accomplishments section of this document. Quantifying GHG emissions reductions in this sector also underscores the importance of County efforts to preserve agricultural land, as the life cycle impact of an acre of agriculture land can be up to 100 times less GHG intensive as an acre of developed urban land.

With these optimal practices, agricultural production has been thriving. Agriculture is a major industry in Tehama County, almost all of which is located in the unincorporated areas. The total estimated gross value of agriculture production in Tehama County for 2013 totaled over 300 million.

**A1. Optimize the efficiency of water irrigation practices through clean, alternative irrigation energy sources.**

There are a small number of diesel-powered pumps located throughout Tehama County, which are used for water irrigation. In 2008, these pumps created a de minimis amount of CO<sub>2</sub>e. However, unfiltered diesel irrigations pumps still contribute to air quality issues. Therefore, while the impacts of diesel pumps cannot be quantified, this strategies actions will be supportive in the role of the CAP. This strategy provides an opportunity to identify agriculture irrigations pump and alternative energy sources, which is anticipated to continue in future years as solar pumps become more affordable and practical.

**Supportive Actions**

- Work with the TCAPCD to review the success of the Countywide pump registry program(s).
- Develop a local program that provides incentives to register all agricultural pumps throughout the County and support TCAPCD efforts.

- Promote rebate opportunities for solar PV-powered pump equipment through the Farm Bureau and with other agricultural partners.

**Role:**

- County: Supports TCAPCD, develops program, and promotes rebates
- Others: 100 agricultural pumps are converted from diesel to solar power

**Results:**

- **2020 GHG Reduction:** Supportive
- **2028 GHG Reduction:** Supportive

**Area of Benefit:**

- The increase in air quality.

**General Plan Goals, Policies & Implementation Measures:**

OS-1.7, OS-1.7a, OS-1.7c

**A2. Improve maintenance of agricultural vehicles to reduce fuel use.**

Farm equipment is essential to various agricultural practices (e.g., plowing, planting, tilling). Most farm equipment is gasoline- or diesel-fueled, and farm equipment in Tehama County emitted approximately 44,510 MTCO<sub>2</sub>e in 2008, composing almost 63% of the off-road sector. According to air district guidance in California, typical best management practices (e.g., maintaining equipment in proper working order) can result in a 5% reduction in emissions. This strategy promotes and supports fuel efficiency in farm equipment resulting in both cost savings and GHG reductions.

**Supportive Actions:**

- Promote best practices in agricultural equipment maintenance.
- Collaborate with the TCAPCD to publicize rebates for improvements.
- Provide materials promoting the transition to consolidated farm equipment.

**Role:**

- County: Promotes best practices and provides materials, collaborates with the TCAPCD
- Others: 50% of agricultural vehicle fleet improves fuel efficiency by 5%

**Results:**

- **2020 GHG Reduction:** -1,318 MTCO<sub>2</sub>e
- **2028 GHG Reduction:** -1,396 MTCO<sub>2</sub>e

**Area of Benefit:**

- The increase in air quality.

**General Plan Goals, Policies & Implementation Measures:**

OS-2, OS-2.5, OS-2.5f, OS-2.6, OS-2.6g

**A3. Continue to refine and develop the local carbon sequestration or offset program on agricultural and timber land.**

Currently the Tehama County CAP identifies 4 Orchard crop types and the Timber Production Zones as viable carbon sequestration offset/credit sources. CARB has adopted an offset protocol for livestock projects and is currently developing an offset protocol for rice cultivation. Offset protocols provide a method for farmers to sell verified offset credits for approved practices that reduce emissions. Credits could be sold in the state auction for the cap-and-trade, or through other offset programs such as the American Carbon Registry and the Climate Action Reserve. The County will also encourage local efforts to further incentivize GHG reductions through a local offset program that will also include board approved participation in various methodologies that will assimilate compost materials into grazing grass lands. The County will work with the TCAPCD and other potential stakeholders to gauge local interest and feasibility. Such efforts would build on the state's offset protocol, working to further incentivize local agricultural operations to reduce GHG emissions. In fact, the UC Davis Farm Advisory (CDFA) is also supporting projects that address GHG mitigation through its Specialty Crop Block Grant Program (SCBGP). Results of funded research projects provide knowledge and tools to help growers reduce GHG emissions and increase carbon sequestration.

**Supportive Actions:**

- Monitor opportunities for the sale of Agriculture cap-and-trade Credits.
- Investigate opportunities with the TCAPCD and agricultural stakeholders.
- Seek support and guidance for the Specialty Crop Block Grant Program (SCBGP) offered by ARB and UC Davis Farm Advisory (CDFA).

**Role:**

- County: Support program development
- Others: Collaborate with County to investigate program feasibility

**Results:**

- **2020 GHG Reduction:** Supportive
- **2028 GHG Reduction:** Supportive



**Area of Benefit:**

- The recognition of Agricultural benefits within cap-and-trade programs

**General Plan Goals, Policies & Implementation Measures:**

OS-9, OS-9.1, AG-1.2f, AG-1.3c, AG-1.3e

**The Purpose of Solid Waste (SW) Strategies**

While waste disposal is an essential activity in the County, disposing solid waste also generates GHG emissions. The effects of landfilled waste can be reduced through technical advances in methane capture systems and a decrease in the amount of landfilled waste.

**SW1. Sustain a maximum practical methane capture rate at the Neal Road Recycling and Waste Facility.**

The Tehama County Landfill agency operates the Plymire Road Recycling and Waste Facility, where most solid waste generated in Tehama County is landfilled. GHG emissions occur in landfills as organic materials in the waste decompose and release methane. The LGOP estimates that the average US landfill captures approximately 75% of generated methane, allowing 25% to escape to the atmosphere. The Agency captures methane, thus reducing methane that escapes to the atmosphere. This strategy provides actions to continue aggressively capturing methane and to conduct a study that verifies the current capture rate.

As discussed in **Chapter 2**, the Plymire Road Recycling and Waste Facility collects solid waste from incorporated and unincorporated communities in the County, as well as from some sources outside of the county. The community inventory and forecast accounts for emissions by landfilled waste originating from the unincorporated County. This reduction strategy gives credit for the methane captured from those emissions. This approach reflects the Agency's operational control of the entire landfill, regardless of the origin of waste.

**Supportive Actions:**

- Continue to monitor landfill gas emissions.
- Expand the collection system as needed to comply with provisions of the Landfill Methane Rule (AB 32).
- Research technologies that results in increased capture of methane associated with organic waste.

**Role:**

- Agency: Operates and maintains landfill gas purchase agreements, researches additional opportunities
- Others: Key partners support the Agency with research and pilot technologies

**Results:**

- **2020 GHG Reduction:** -5,232 MTCO<sub>2</sub>e
- **2028 GHG Reduction:** -5,628 MTCO<sub>2</sub>e

**Area of Benefit:**

- Expands energy alternatives

**General Plan Goals, Policies & Implementation Measures:**

OS-2.5, OS-2.5b

**SW2. Encourage a Countywide diversion rate target of 75%, consistent with state policy.**

As mentioned in strategy SW1, decomposing landfilled waste emits methane, a potent GHG. Another way to reduce landfill-generated methane is to reduce the amount of waste being landfilled. AB 341(2012) sets a statewide policy target of a 75% diversion rate by 2013. Measure SW2 encourages the achievement of that target by 2020 and recommends strategies to achieve it.

**Supportive Actions:**

- Adopt policies to achieve a 75% diversion rate target by 2020.
- Develop a program with haulers to track large waste generators.
- Under a voluntary program, certify facilities that are achieving or exceeding 50% waste diversion to achieve a 75% diversion rate by 2020.
- Support local facilities and programs that result in additional diversion of organic waste.

**Role:**

- Agency: Adopts ordinance and supports programs to increase diversion rate
- Others: Key partners develop and implement effective programs

**Results:**

- **2020 GHG Reduction:** Supportive
- **2028 GHG Reduction:** Supportive

**Area of Benefit:**

- The recycling of more material will slow the size and future footprint of the landfill

**General Plan Goals, Policies & Implementation Measures:**

PS-6.4, PS-6.4c

## The Purpose of the Government Operations (GO) Strategies

The government operations topic area is the County's opportunity to lead by example. Emissions reduction strategy may also reduce the cost of County operations by decreasing energy, fuel, and other materials consumed at County facilities.

### **GO1. Improve energy monitoring and tracking.**

Energy costs are a substantial part of the County's annual budget. Currently, the County tracks electricity and natural gas use through several large accounts, and does not have a detailed understanding of energy use at the building or department level. A more detailed accounting describing where energy is used can enable the County to make better energy-efficiency retrofit decisions. This strategy directs the County to install submeters on prioritized buildings and incorporate submeter results into the annual facility assessment process.

#### **Supportive Actions:**

- Develop a prioritized list of buildings to install submeters, prioritizing buildings with planned upgrades to allow for benchmarking and analysis of improvements.
- Consider a wide range of submeter technologies that facilitate optimal energy tracking.
- Develop a campus-wide plan for County Administration to coordinate between all departments and install submeters at all County facilities as funding allows.
- Create an integrated Energy Management System (EMS) to meaningfully track energy use, analyze the costs and benefits of energy improvements, and inform the annual facility assessment process.

#### **Role:**

- County Administration: Implements actions, and provides support and education

#### **Results:**

- **2020 GHG Reduction:** Supportive
- **2028 GHG Reduction:** Supportive

#### **Area of Benefit:**

- Enables the County to make better energy-efficiency retrofit decisions.

#### **General Plan Goals, Policies & Implementation Measures:**

OS-2, OS-2.6a, OS-2.6b, OS-2.6d, OS-2.6f

## **GO2. Improve operations with energy-efficient equipment.**

This strategy establishes a commitment to purchase cost-effective energy equipment when appropriate to reduce energy costs, energy consumption, and GHG emissions. Newer, more energy-efficient appliances and equipment can reduce maintenance costs and operate more efficiently than older models.

### **Supportive Actions:**

- The County will required consideration of energy-efficient options such as ENERGY STAR products when purchasing new equipment.
- Reduce the number of computer network servers by upgrading to virtual servers.
- Install automatic thermostat controls on facilities to help regulate building temperatures for diverse users.
- Install other automatic sensors to eliminate unnecessary energy use in energy and lighting, using technologies such as plug loads, occupancy sensors, and timers.

### **Role:**

- County Administration: Adopts policies and carries out retrofits up to 328,000 square feet (50% of County government space)
- Others: Support upgrades

### **Results:**

- **2020 GHG Reduction:** -177 MTCO<sub>2e</sub>
- **2028 GHG Reduction:** -469 MTCO<sub>2e</sub>

### **Area of Benefit:**

- Enables the County to make better decisions regarding the purchase of cost-effective energy equipment when appropriate to reduce energy costs, energy consumption, and GHG emissions.

### **General Plan Goals, Policies & Implementation Measures:**

OS-2, OS-2.6a, OS-2.6b, OS-2.6d, OS-2.6f

## **GO3. Improve heating and cooling functions of County buildings.**

Inefficient HVAC systems and improperly sealed duct networks can increase the amount of energy required to heat and cool a building, and can potentially cause increased maintenance needs. This strategy requires the County to identify inefficiencies and upgrade heating and cooling systems. The County has completed energy audits and is currently adjusting and optimizing the environmental management system in County buildings.

**Supportive Actions:**

- Identify buildings with inefficient heating and cooling systems to target for replacement, commissioning projects, or climate rezoning
- Identify low-cost options to reduce space heater use and regulate building temperature
- Adopt a policy to implement strategy to improve HVAC systems and duct networks as feasible during other maintenance and improvement activities

**Role:**

- County Administration: Implements actions and provides information
- Others: Support actions

**Results:**

- **2020 GHG Reduction:** Supportive
- **2028 GHG Reduction:** Supportive

**Area of Benefit:**

- Enables the County to make better decisions regarding the purchase of cost-effective energy equipment when appropriate to reduce energy costs, energy consumption, and GHG emissions.

**General Plan Goals, Policies & Implementation Measures:**

OS-2, OS-2.6a, OS-2.6b, OS-2.6d, OS-2.6f

**GO4. Reduce fuel use in the County fleet.**

Fuel used by the County vehicle fleet accounted for approximately 15% of 2008 government operations emissions. This strategy identifies opportunities for the County to reduce fuel consumption through alternative fuel options for light- and heavy-duty vehicles and equipment, building on previous efforts such as the purchase of hybrid cars and reports on vehicle use.

**Supportive Actions:**

- Track options for alternative fuel vehicles and equipment.
- Continue to review options through the Fleet Services Division.
- Implement CARB standards with replacement of the County's heavy-duty diesel vehicles (>14,000 lb).

**Role:**

- Fleet Services Division: Supports and promotes reductions in fleet fuel use
- Others: 34,350 fewer gallons of fuel used annually by the County fleet in 2020

**Results:**

- **2020 GHG Reduction:** -423 MTCO<sub>2</sub>e
- **2028 GHG Reduction:** -545 MTCO<sub>2</sub>e

**Area of Benefit:**

- County line item fuel budget should be reduced as well as air quality improvement

**General Plan Goals, Policies & Implementation Measures:**

OS-2.6, OS-2.6, OS-2.6e, OS-2.6g, OS-2.6h

**GO5. Reduce emissions from employee commutes by encouraging alternative travel options and supporting the use of clean, alternative fuels.**

The employee commutes and travel sector was the largest non-landfill contributor to 2008 government operations emissions (20% of total emissions). This strategy identifies opportunities to reduce commute and travel emissions.

**Supportive Actions:**

- Conduct an annual survey to track employee commute patterns, and provide an award to departments with the highest percent participation in commuter or public transit programs.
- Consider meeting and conferring with employee groups to provide vouchers or subsidized bus passes to employees that use public transit or participate in carpool or commuter programs.
- Work with TCAPCD to identify available funding sources.
- Aim to provide at least one electric vehicle charging station at the County campus.

**Role:**

- Development Services: Conducts surveys and promotes programs
- Human Services: Meets and confers about process
- Others: TCAPCD support and participate in programs

**Results:**

- **2020 GHG Reduction:** Supportive
- **2028 GHG Reduction:** Supportive

**Area of Benefit:**

- County air quality improvement.

**General Plan Goals, Policies & Implementation Measures:**  
OS-2.6, OS-2.6j, OS-2.6e, OS-2.6g, OS-2.6h

### Progress And Goals

Tehama County has chosen to reduce emissions below the 2008 baseline by 5% for the 2020 target and another 5% for a total of 10% for the 2028 target, which would equate to a community-wide target emission level of 795,311 MTCO<sub>2</sub>e by 2020 and 753,453 MTCO<sub>2</sub>e by 2028. Implementing the CAP would help reduce community emissions below 2008 levels by 2020 and 2028, allowing Tehama County to surpass its reduction goals, which is why their calculating methodologies qualify as performance based GHG impact calculation standards per CEQA Sections 15064.4(a) and are hereby adopted as incorporated herein. The CAP strategies (**Chapter 4**) and assumptions (Appendix B) reduce the Unincorporated Countywide Emissions by another 100,062 MTCO<sub>2</sub>e by 2020 and 153,860 MTCO<sub>2</sub>e by 2028 resulting in a 15.3% reduction below the 2008 baseline for 2020 and a 25% reduction below the 2008 baseline for 2028. These estimates are assumptions based on the best available accounting and reporting standards, methodologies and practices. The largest share of these reductions comes from energy efficiency and renewable energy strategies as indicated in **Table 12** on the next page, although reduction strategies and credits in all sectors including state acts, and local achievements are needed to meet and exceed the 2020 and 2028 goals. As indicated in the Tehama County General Plan, strategies will continue to focus on agriculture, renewable energy generation, and voluntary energy efficiency upgrades, which will achieve more GHG reductions.

Table 12: 2020 and 2028 Unincorporated Countywide Quantified Reductions by Strategy

Activities/ Accomplishments/Quantified Reduction Strategies	MTCO <sub>2e</sub>		
	2008	2020	2028
<b>Emissions with state reductions</b>	—	831,600	876,8300
Solar PV arrays (CSI and Red Bluff High School)	—	-390	-390
4.4% a Year Cumulative Orchard planting trend/conversion to less GHG-intensive crops such as Orchards (Sequestration rate credit)	—	-22,326	-95,355
<b>Total Local Reductions</b>	<b>—</b>	<b>-22,716</b>	<b>-95,745</b>
Emissions with state and local reductions	—	808,884	781,085
2020 Target emissions level of 5% for the Countywide Unincorporated Area (Community and Government Operations categories combine) (MTCO <sub>2e</sub> )	—	795,311	—
2028 Target emissions level of 10% for the Countywide Unincorporated Area (Community and Government Operations categories combine) (MTCO <sub>2e</sub> )	—	—	753,453
<b>Remaining reductions needed to achieve goal (MTCO<sub>2e</sub>)</b>	<b>—</b>	<b>13,573</b>	<b>27,632</b>
E1: Low-income residential retrofits	—	-441	-1,543
E2: Nonresidential retrofits	—	-2,585	-5,036
E3: Nonresidential appliance upgrades	—	-680	-1,960
E4: Cal Green standards	—	Supportive	Supportive
E5: Renewable energy (new residential development.)	—	-1,005	-2,836
E6: Renewable energy (new nonresidential development)	—	-136	-272
E7: Renewable energy (existing development)	—	-6,391	-12,227
E8: Renewable energy and efficiency on agriculture property	—	-78,630	-117,672
AF1: Alternative and clean-fuel vehicles	—	-222	-753
AF2: Construction mitigation requirements	—	-720	-659
TR1: Transportation demand program	—	-2,400	-2,864
A1: Efficient water irrigation	—	Supportive	Supportive
A2: Agricultural vehicle fuel use	—	-1,318	-1,396
A3: Cap-In-Trade Local carbon sequestration or offset program	—	Supportive	Supportive
SW1: Methane capture	—	-5,232	-5,628
SW2: 75% diversion rate	—	Supportive	Supportive
GO1: Energy monitoring	—	Supportive	Supportive



Table 12 Continued- Activities/Accomplishments/Quantified Reduction	MTCO <sub>2</sub> e		
	2008	2020	2028
GO2: Energy efficient equipment	—	-177	-469
GO3: Energy efficient heating and cooling functions	—	Supportive	Supportive
GO4: County fleet fuel reduction	—	- 423	- 545
GO5: County commute and alternative travel options	—	Supportive	Supportive
<b>Percentage reduction below 2008 Baseline Level</b>	<b>—</b>	<b>15.3%</b>	<b>25%</b>
Note. 2008 Baseline Unincorporated Countywide emissions are 837,170 MTCO <sub>2</sub> e.			

## Chapter 5 Preparing For Change

### Overview

The County anticipates that some degree of climate change may occur regardless of existing and future GHG reduction and mitigation efforts. As a result, sound management of natural resources, local economic and social resiliency, and the recognition that hazards and mitigation must be understood in the largest possible social and economic context will ultimately help the County and other supporting agencies realize the potential risks involved in climate change. With this in mind, The County should understand the potential impacts of climate change and take steps to adapt to or manage potential changes to the environment or socioeconomic system in an effort to reduce risks and increase resilience.

### Acclimation Practices

The Tehama County area has significant exposure to numerous natural hazards that have caused millions of dollars in past damage. Even though limited local resources make it difficult to implement proactive risk-reduction practices, the County has identified climate change impacts that are likely to occur and policies and practices to address those impacts. However, the proposed steps in this Plan should be considered a starting point to adapt to climate change. To more fully adapt to climate change, the County will develop new strategies necessary to sustain resources and implement the General Plan.

This Plan incorporates acclimation practices that are not harmful to or in conflict with proposed GHG reduction or mitigation efforts at this time, of which are cost have been associated with in order to provide a complete picture of the County's resources that will be necessary to in order to carry out the practices and their actions as outlined below.

**AP1. Increased Rate of Wildfires** – Changes in vegetation patterns within the County due to higher temperatures and changes in precipitation are likely to cause an increased risk of wildfires. Short-term loss caused by a wildfire can include the destruction of timber, wildlife habitat, scenic vistas, and watersheds. Long-term effects include smaller timber harvests, reduced access to affected recreational areas, and destruction of cultural and economic resources and community infrastructure. Vulnerability to flooding increases due to the destruction of watersheds. The potential for significant damage to life and property exists.

#### **Action(s):**

- Where appropriate, support retrofitting using fire-resistant building materials located in hazard-prone areas to protect structures/infrastructure from future damage, with repetitive loss and severe repetitive loss properties as priority when applicable.

- Reduce the risk of wildfires through controlled burns, fuel reduction programs, improved fire access and defensible space.
- Utilize fire-resistant building materials in the construction of new buildings.
- Implement Urban Wildland Fire Strategic Principles to prioritize the dissemination of fire prevention information into new potential developments and existing communities, which will help reduce the high-risk in wildfire areas.

**AP2. Decreased Supply of Fresh Water** – Higher temperatures and continued population growth suggest that there will be a growing demand for water while local groundwater and reservoir supplies are shrinking. Drought is a prolonged period of dryness severe enough to reduce soil moisture, water and snow levels below the minimum necessary for sustaining plant, animal and economic systems. Droughts are a natural part of the climate cycle, but can have a widespread impact on the environment and the economy, depending upon their severity. Drought typically does not result in loss of life or damage to property, but it will result in increased electricity and ground water use due to pumping.

**Action(s):**

- Support the collection of improved data (hydrologic, geologic, topographic, volcanic, historical, etc.) to better assess risks and vulnerabilities.
- Continue to coordinate with the Tehama County Resource Conservation District and cities to encourage water conservation, reuse water, and develop additional water supply sources.
- Establish partnerships with local water supplier and cities to develop a comprehensive water conservation program.

**AP3. Increased Severity of Flood Events** – The hydrologic record can no longer be used to predict changes in frequency and severity of extreme climate events such as floods. Going forward, model calibration or statistical relation development must happen more frequently, new forecast based tools must be developed, and a standard of practice that explicitly considers climate change must be adopted as annual rainfall may decrease or slightly increase, rainfall events are likely to occur less frequently but with greater severity. These storms may cause a great deal of destruction and even death, but their impact is generally confined to a small area.

**Action(s):**

- Where appropriate, support retrofitting, purchase, or relocation of structures or infrastructure located in hazard-prone areas to protect structures/infrastructure from future damage, with repetitive loss and severe repetitive loss properties as a priority.
- Encourage training for the local jurisdictions floodplain managers and enforce flood

hazard regulations by maintaining standards for the development and placement of structures in areas with poor drainage or prone to flooding.

- Seek partnerships within the agricultural industry by Identify areas suitable for floodplain corridor easements to maintain production that is compatible with flood conveyance and protects urban areas from flooding.

**AP4.Agriculture Key Economic Engine-**Protect the economic viability of local agriculture in a changing climate. As indicated in Acclimation Practice 3 storms may cause a great deal of destruction and even death, while droughts may not usually be associated with direct impacts on people or property, but they can have significant impacts on agriculture, which can impact people indirectly.

**Action(s):**

- Assist farmers to implement conservation practices in their agricultural operations.
- The County shall seek inter-jurisdictional cooperation and coordination on natural resources practices and recreation plans with an emphasis on economic impacts.
- The County shall recognize the need to protect and conserve areas where soils have high resource values, especially in terms of potential agricultural productivity.

## Government Practices And Responsibility

**GP1.Public Health and Safety-** Critical facilities and infrastructure are those that are essential to the health and welfare of the population. These become especially important after a hazard event. Critical facilities typically include police and fire stations, schools and emergency operations centers. Critical infrastructure can include the roads and bridges that provide ingress and egress and allow emergency vehicles access to those in need, and the utilities that provide water, electricity and communication services to the community. Coordination with other jurisdictions, agencies, and partners, to Maintain a health Community is vital when facing a changing climate.

**Action(s):**

- Continue to maintain a Countywide hazard mitigation plan website to house the plan and plan updates, in order to provide the public an opportunity to monitor plan implementation and progress.
- Continue to work with the Air Pollution Control District to improve local air quality and minimize air pollutants that negatively affect public health.
- Encourage energy conservation through energy efficiency retrofits, conservation behaviors, which will reduce pressure on the electrical grid during heat waves.

## Chapter 6 Monitoring Program

### Overview

The Cap identifies a number of goals, purposes, policies, actions and strategies that the County can use to reduce GHG emissions. While the document lays out the inventories, baseline, goals and target years, it is the actions practices and strategies that provide the means for the GHG reductions and air quality improvement. The Climate Action Plan has a long planning horizon of about 20 years, which is why it is important to include a Monitoring Program. While the County is committed to meeting the 2020 and 2028 GHG reduction goals, it recognizes that there are many ways to achieve that goal, which is why this chapter plays an important role in the CAP's over all long term success. This chapter outlines the framework of the Monitoring Program, because flexibility while implementing the CAP is necessary to allow the County to evolve its strategies to achieve the most effective path to the desired result.

### CAP Monitoring Program

The Climate Action Plan Monitoring Program will review, analyze and rate the effectiveness of the strategies, policies, practices and actions that have been adopted within the CAP. Following the scheduled review(s), County staff will consider options for public input and incorporate that input along with any new strategies, actions and/or practices that have evolved with in the industry between the time of adoption and the review date.

### Framework

While the County used the best available information for its GHG analyses assumptions and results is should be noted that the industry continues to evolve and therefore it is often difficult to estimate with precision the GHG reductions that will occur upon implementation of the actions in this plan. For this reason the CAP's strategies, policies, actions and practices along with various other County documents and tools may need to be update and modified from time to time. The Monitoring Program provides the mechanism that establishes and outlines the timeline and framework in which the CAP' existing proposals will be assessed. What is clear from the initial analysis, is that the County exceeds its 2020 and 2028 GHG reductions goals while doing its part to combat climate change. The County will collaborate with other stakeholders, local agencies and County departments throughout the tri-county area to helps achieve the CAP's goals and the implementation of its strategies, actions and practices. The TCAPCD is such a department with a leading role in the CAP's success.

The Tehama County Air pollution Control District (TCAPCD) will act as the lead agency reading the implementation of the CAP, which may include annually progress reports and other duties necessary to facilitate and support the implementation of the CAP along with the initiation of the Monitoring Program and assessment. TCAPCD will coordination said effort on a continuous basis in order to limit any inventory and emissions gaps regarding future updates.

Ultimately, the County undertook development of this CAP to carry-out policies and fulfill

implementation measures identified in the General Plan to address climate change and protect the quality of life in Tehama County.

### Monitoring Program And Assessment

The intent of Tehama County's Administrative personnel and Board of Supervisors is to meet and/or exceed the goals within the CAP. It will take time to realize any benefits from the CAP, and it will take more time assess the progress and validity of the assumptions reported within the Climate Action Plan. Therefore, an immediate reassessment of practices may be undertaken with by 2016. Whereas, the near-term review of the supportive actions may be accomplished by 2018. Target years 2020 and 2028, which are the mid-term and long-term evaluations may trigger a complete reassessment of the CAP's assumptions, Goals, Strategies, actions, practices etc. The reassessment will rely on the same methods used to create the inventories, which is based on emissions factors and established protocols in an evolving field of science. CAP Monitoring Program timelines and assessments will be set and managed by the TCAPCD, which may amended the program and its scope as necessary through a CAP independent process. It should be noted that additional agencies may be necessary to help the TCAPCD carry-out its objective. Staff time may be an issue as the County and it's departments have limited resources for such tasks, and therefore the range and hours have been broken up into three pieces for accounting purposes: 1) Minimal (<100)- Minimal staff effort and no consultant assistance 2) Moderate (100–250)- Significant staff effort, some consultant assistance 3) Major (250+)- Major staff effort, consultant assistance, or supplemental funding for operations or capital projects.

Note. The allocation and use of Major staff resources and time may need to be authorized by the Board of Supervisors.