



PART 1: Executive Summary

An Overview of the Climate Action Plan

PART 1: EXECUTIVE SUMMARY

- Global Climate Change
- Values, Goals, and Strategies of the Climate Action Plan
- How the Climate Action Plan was Developed
- Climate Action Plan Findings
- Greenhouse Gas Emission Reductions

CLIMATE CHANGE

Global Climate Change (GCC), which is now generally accepted by many in the scientific community to be occurring and caused by Greenhouse Gases (GHGs), is a widely discussed scientific, economic, and political issue in the United States and internationally. Briefly stated, climate change is the cumulative change in the average weather of the earth that may be measured by changes in temperature, precipitation, storms, and wind. GHGs are gases that trap heat in the atmosphere.

Merced’s Climate Action Plan includes goals, strategies, and actions to reduce local community GHG emissions to 1990 levels by the year 2020, consistent with the state objectives set forth in the “Global Warming Solutions Act,” otherwise known as AB 32. Taking action on climate change provides tangible benefits for citizens today – and ensures that future generations will have access to the resources that support healthy, prosperous, and livable communities. The Merced Climate Action Plan seeks to reduce GHG emissions within this larger framework of sustainability. These benefits include:

- A vibrant downtown, urban centers, and livable neighborhoods
- Walkable communities with increased mobility options
- Efficient and convenient transportation systems and services
- Energy efficient / low cost utility buildings
- Increased water supplies
- Reduced conversion of agricultural, resource, and open space lands
- Improved air quality
- Less municipal waste
- Informed and engaged citizenry / opportunities for community partnerships



The Climate Action Plan is an assemblage of existing City policies, state mandates, and similar actions that highlight Merced’s past, present, and future efforts to achieve these community-based goals. It’s a roadmap with suggested tools of how the Merced community can chart its own path, to be implemented at a time, manner, and approach determined by the community and its elected officials.

The State of California’s AB32’s Scoping Plan States:

“Local governments are essential partners in achieving California’s goals to reduce greenhouse gas emissions...and have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect greenhouse gas emissions through their planning and permitting processes, local ordinances, outreach and education” efforts, and municipal operations.”²⁵

VISION AND GOALS OF THE CLIMATE ACTION PLAN

Success is Proactive Reaction

Merced is at a transformative period of growth. New pressures and influences exist, and include: 1) Central Valley's 2009 population of 7 million is expected to grow to 12 million people by 2040¹; 2) increased State vision and direction concerning land use, housing, transportation, and support for compact cities; and 3) the economic recession and associated budget-related influence on growth patterns. UC Merced's efforts to develop sustainable communities is inspiring entrepreneurs and younger markets to develop and use reliable clean energy technologies. How will these factors affect Merced? The decisions and actions we take today will define the outcomes of Merced tomorrow.

Practical Benefits of the Plan

Merced's Climate Action Plan presents a comprehensive list of actions, that when implemented, will help to achieve broadly-supported community values including: 1) protecting our water and air resources; 2) reducing the waste-stream to the landfill; 3) improving energy-efficiency; 4) enhancing choice in mobility; and 5) creating healthy and livable communities, while at the same time reducing greenhouse gas emissions.

Grant Fund Opportunities

The television series "Star-Trek" first introduced many of us to the phrase, "carbon-based life-forms," describing the dominant nature of carbon on earth and other planets. Indeed, as described in this report, carbon is everywhere. Funding opportunities for climate-change related projects and programs are similarly available, especially in California, and as noted above, climate change related projects touch many of the community's broad goals and policies. For example, the Federal Emergency Management Agency (FEMA) identified that fitting cooling centers with alternate energy sources to mitigate against extreme heat is a qualifying project through its Hazard Mitigation Program. Likewise, the State of California, Strategic Growth Council identified the planning and/or construction of parks in the urban core to reduce the "heat-island effect" as a qualifying project through its "Urban Greening Program." Merced's robust Climate Action Plan suggests several opportunities to seek funding that supports the diverse needs of its community.

Energy Efficiency = Cost Savings

Whether a long-time resident looking to balance their budget, or a start-up company seeking that competitive edge, the bottom-line is the bottom-line. At a time when national and regional energy prices keep rising, local communities should explore and implement programs that will help its citizens to reduce energy consumption and be able to use alternative forms of energy. The Climate Action Plan

includes several ideas to address the energy needs of the community, capitalizing on federal and state programs to help communities adjust to future forecasts, whether based on market conditions or the regulatory environment.

Development Ready “Red-Carpet” Service

Merced’s robust Climate Action Plan can be the foundational document upon which a “Programmatic Climate Action Plan” can be crafted to create a streamlined and predictable greenhouse gas emission assessment development review process. Senate Bill (SB) 97 acknowledges that climate change is an important environmental issue that requires analysis under the California Environmental Quality Act (CEQA). CEQA requires that Lead Agencies analyze the greenhouse gas emissions of proposed projects, and must reach a conclusion regarding the significance of those emissions, and, when a project’s greenhouse gas emissions may be significant, lead agencies must consider a range of potential mitigation measures to reduce those emissions. These assessments are highly technical, resulting in increased review time and financial costs to applicants of development projects, and legal exposure when not prepared properly. Lead Agencies may significantly streamline this analysis through adoption of a Programmatic Climate Action Plan, which would follow adoption of a Climate Action Plan.

Merced’s Implementation Approach

Implementation Decision Tree

The Climate Action Plan is primarily a collection of existing and proposed City policy statements that foremost, improve the community and secondarily reduce greenhouse gas emissions. As a set of policy statements, implementation of the CAP necessitates further community involvement involving citizens, elected and appointed officials. The Implementation Chapter includes an “Implementation Decision Tree” that describes the process City Department heads and managers will use when taking steps to initiate implementation of the actions recommended in this plan, and are based on numerous statements in the CAP that emphasize public review as opposed to autocratic deployment of actions.

Community-Based Actions

The majority of the Plan’s recommended actions are based in public outreach and education, incentives, capital projects, and volunteer actions. The CAP does include some suggested code amendments, but these are intended to increase development-based options. For example, Actions SC 2.2.7 and SC 2.2.8 would allow a greater range of land uses throughout the City, notably in business parks and industrial zones which retranslates to permit streamlining, increased development options and opportunity for job growth. There are still other actions, based on general plan policies that present the possibility of code changes to improve the community.

Dedicated Leadership and an Engaged Community

Local governments, residents, and businesses can work independently and/or together to achieve Plan values and goals. By pushing the limits of what is possible, visions of our future can be achieved -- a vision of healthy communities, quality natural resources, and clean energy resources. Realization of these values and related goals are possible through dedicated leadership and an engaged community.



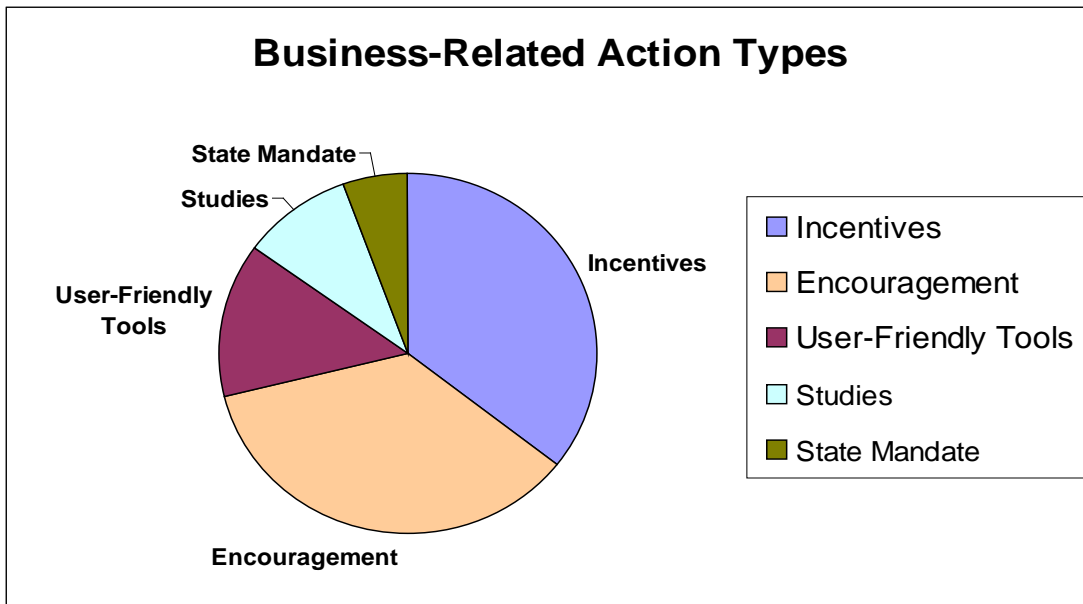
A Business Friendly Climate Action Plan

Generally speaking, while a CAP may send a positive message to some entrepreneurs and businesses looking to locate in Merced, others may interpret it differently. Therefore, the CAP was customized based on the recognition of Merced’s local economy and community-wide interest to retain and enhance existing businesses and to attract new enterprises to the City of Merced.

With the Merced Climate Action Plan, there are no new requirements on local businesses, no new fees, assessments, or other charges, and it demands no monitoring or tracking of emissions or reductions thereof. These parameters apply to new and existing businesses alike. Rather, the CAP offers a list of recommended business-friendly actions primarily based on incentives, improved communication, and encouragement. Other business-related actions are either state-mandates or studies to ensure that potential subsequent programs have merit prior to implementation. Of the total 156 recommended actions in the Merced CAP, 73 are business-related, with most of these based on incentives, improved communication, and encouragement (See Appendix J).

Local Governance
Although the CAP establishes specific strategies, they are not binding on the City Council or the community.

Incentive-based actions are supportive of businesses and includes efforts to provide funding, infrastructure, advertising, relief from development standards and formation of “win-win” community partnerships. **Improved communication**-based actions adds certainty to the City’s development review and permit processes, reduces subjective reviews and decisions (levels the playing field), and places current code requirements in user-friendly guidelines. **Encouragement** is attained mainly through educational and promotional materials. Messaged and implemented properly, the Merced CAP can be a showcase of how positive change can result from voluntary actions of informed and supported community, and be a reason to do business in Merced.



Outline of the Plan's Values, Goals, and Strategies

VALUE 1: HEALTHY COMMUNITIES

Goal 1: Enhance Mobility of all Transportation Modes (EM) /

Strategy Topics

- Site Design Planning
- Transit Planning
- Bicycle Planning & Projects
- Pedestrian Planning & Projects
- Mobility Development Review Policies

21% of the GHG Emissions targeted for reduction will be accomplished through enhanced mobility programs and projects.

Goal 2: Sustainable Community Design (SC)

Strategy Topics

- Compact Urban Form / Infill
- Mixed Use Transit Oriented Development
- Growth Management Planning
- Community Appearance
- Community Design Development Review Policies

10% of the GHG Emissions targeted for reduction will be accomplished through sustainable land use designs and urban growth management.

VALUE 2: QUALITY NATURAL RESOURCES

Goal 3: Water Conservation and Technology (WC)

Strategy Topics

- Water Conservation and Technology
- Reduce Groundwater Pumping
- Water Efficient Landscapes
- Water Conservation Development Review Policies

5% of the GHG Emissions targeted for reduction will be accomplished through water management practices.

Goal 4: Protect Air Resources (AR)

Strategy Topics

- Reduced Vehicle Trips
- Clean Trips – Clean Vehicles
- Reduce Non-Vehicular Emissions
- Air Resource Development Review Policies

10% of the GHG Emissions targeted for reduction will be accomplished through programs and actions that protect the quality of Merced's air resources.

Goal 5: Waste Reduction (WR)

Strategy Topics

- Reduce, Reuse, and Recycle
- Waste Reduction Development Review Policies

1% of the GHG Emissions targeted for reduction will be accomplished through waste reduction programs.

VALUE 3: CLEAN ENERGY RESOURCES

Goal 6: Increase the Use of Renewable Energy Sources (RE)

Strategy Topics

- Renewable Energy Systems
- Renewable Energy Development Review Policies

23% of the GHG Emissions targeted for reduction will be accomplished through utilization of renewable resources.

Goal 7: Building Energy Conservation (BE)

Strategy Topics

- Green City Facilities and Infrastructure
- Energy Efficiency in New Development
- Residential Energy Efficiency
- Commercial and Industrial Performance
- Urban Forestry / Heat Island Effect
- Building Energy Conservation Development Review Policies

30% of the GHG Emissions targeted for reduction will be accomplished through energy conservation habits and equipment.

VALUE 4: LEADERS AND PARTNERS

Goal 8: Public Outreach and Involvement (PO)

Strategy Topics

- Community Resources
- Support a Green Economy
- Support Sustainable Neighborhoods

The percentages above are representative of the emission amounts described in the City's 2008 GHG Emission Inventory. For example, large reductions through energy conservation and equipment retrofits respond directly to the large amount of emissions coming from Merced's existing buildings.

HOW THE CAP WAS DEVELOPED

Climate Action Planning – Broad Planning Process and Objectives

BROAD PLANNING PROCESS

While the City of Merced has already begun to reduce greenhouse gas emissions through a variety of sustainability actions, the City of Merced Climate Action Plan is *Milestone No. 3* of a typical project development approach and contains five general steps in a cyclical framework, adapted to the purpose of Merced’s Climate Action Plan.

Milestone One: Conduct a baseline emissions inventory and forecast.

Milestone Two: Adopt an emissions reduction target for the forecast year.

Milestone Three: Develop a local Climate Action Plan.

Milestone Four: Implement the Climate Action Plan.

Milestone Five: Monitor progress and report results.



MERCED'S MILESTONES

In November 2009, the City Council accepted Energy Efficiency and Conservation Block Grant funds from the Federal Department of Energy to undertake several projects to increase energy efficiency. One of these projects was the drafting of a Climate Action Plan (CAP). Work by City Staff on Climate Action Planning began in January 2010, and focused on drafting the *City of Merced Climate Action Plan Background Report*, which included the City's first Greenhouse Gas Emission Inventory. The background report was completed in January 2011 and helped frame the next steps in the process, selecting a greenhouse gas reduction target and drafting the Climate Action Plan.

On September 7, 2010, the City Council took two key Climate Action Planning steps: (1) adopted City Council Resolution 2010-80 committing to take steps to reduce greenhouse gas emissions through adoption of a Climate Action Plan; and, (2) directed staff to begin the recruitment process for members of a Climate Action Plan Ad-Hoc Advisory Committee. The appointment of the Committee was made by the City Council on December 20, 2010. The Committee has met monthly since January 2011, and concluded its work with City Staff in September 2011.

On February 22, 2011, the Merced City Council adopted greenhouse gas reduction parameters, targets, and an approach to drafting the City's Climate Action Plan, notably, to work with a community-based Committee to identify ways to reduce GHG emissions to 20% below 1990 levels by 2020 for Government-based facilities and the Community as a whole. Then, on June 4, 2012, the Merced City Council voted that a greenhouse gas reduction target of 1990 levels by 2020 be used for the Climate Action Plan instead.



On October 1, 2012, the Merced City Council adopted the City of Merced Climate Action Plan by Resolution 2012-70 (Appendix H).

Merced Vision 2030

General Plan Policy SD-1.7:

“Develop and Implement a Climate Action Plan for the City.” Through recent changes in State and Federal law, local governments like the City of Merced have begun to pay more attention to what can be done regarding Climate Change and Greenhouse Gas reduction on the local level.

OBJECTIVES OF THE CAP PLANNING PROCESS

The Merced CAP was developed following the City Council objectives:

- Current City policies will form the foundation upon which specific strategies will be crafted;
- The Climate Action Plan will include a set of recommended strategies and implementation plan;
- Among other topics, the recommended strategies will address state-mandated programs, such as Water Conservation (SB x7-7 2009), Commercial Recycling (AB32), Building Efficiency (CalGreen Code), and other “Co-Benefit” categories and items;
- Implemented strategies will be financially feasible;
- The plan’s focus will be qualitative, in the sense of identifying and crafting feasible strategies that can be implemented in Merced;
- Quantify projected GHG emissions and recommended actions;
- The Plan will seek to create linkages between it and established City plans such as the City’s general, specific, and master plans so that they can work together to achieve the reduction target;
- The strategies will complement and be consistent with the Merced County Association of Government’s (MCAG) charge to craft a Sustainable Communities Strategy as part of Merced County’s Regional Transportation Plan, which has implications for future transportation funding and review of development projects; and,
- Strategies will be implemented in an incremental manner, based on the needs and ability of the Community.

IMPLEMENTATION

The actions that we take today will ensure a sustainable future tomorrow. Implementation of Merced’s CAP can only be accomplished with the help and participation of its community. The CAP provides tools for new community partnerships to thrive and succeed. These tools identify funding sources, partners, and responsible entities to accomplish detailed tasks within specified timelines. Positive change will also require implementing adopted policies. Most importantly, achieving a sustainable future will require the enthusiasm and participation of every resident of Merced.

Implementation Steps:

The City Council and public will be afforded an opportunity to review recommended actions and related costs and benefits, prior to implementation of any action. Although the CAP establishes specific strategies and actions that the City and community can implement over time, it is not binding on the City Council or the community.

CLIMATE ACTION PLAN FINDINGS

City Staff worked with the Climate Action Plan Ad-Hoc Committee to understand how the *Context* of Climate Action Planning and the *Capacity* of the community would affect which GHG reduction actions would be selected. The *Context* of climate action planning includes these topics: the City's 2008 Greenhouse Gas Emission Inventory, the City Council greenhouse gas reduction target, and regulations applicable to "New Development," "Local Government," and the "Community." The *Capacity* to implement the CAP includes such topics as opportunities, constraints, community partnerships, leadership, funding, and past and current sustainability efforts of the City. Based on this overall direction, committee assessment teams were formed, and CAP goals, strategies, and actions were then reviewed, amended, and finally confirmed by the Committee.

CAP Context -- Overview

In PART 2 of this Climate Action Plan, several factors that influence Climate Action Planning were identified and are the origin of several recommended GHG reduction strategies and actions.

Regulatory Drivers of Greenhouse Gas Reduction

Although AB32 (The California Global Warming Solutions Act of 2006) does not require local governments to adopt a Climate Action Plan, a plethora of related rules, regulations, and incentive programs have originated from AB32 that affect local governance, and include:

- Sustainable Communities Strategy (SB 375)
- CEQA – Global Warming Guidelines (SB97, Dutton, 2007)
- California Green Building Standards Code (CALGreen, Title 24, Part 11)
- Building Energy Audit (at time of Sale, Lease or Refinance) California AB 1103 (2007)
- Complete Streets (AB 1358, Leno, 2007)
- eTRIP / Rule 9410 – Employer Based Trip Reduction
- Model Water Efficient Landscape Ordinance
- Water Conservation Bill of 2009 (SBx7.7, Steinberg, 2009)
- Commercial Recycling



The City's initial GHG reduction efforts focus on strategies and actions that respond directly to these regulatory drivers.

Climate Adaptation

The potential impacts of climate change should be considered. Climate hazards exacerbated by climate change that may directly affect Merced include high temperatures, flooding, and drought. Strategies and actions that reduce greenhouse gas emissions and prepare the community for changing weather patterns should be identified and implemented, such as expanding the City's urban forest and weatherizing homes and businesses.



Merced's Greenhouse Gas Reduction Target

Merced's GHG reduction target of 1990 levels by 2020 is commensurate with that of the State of California. This target will garner attention and action to attempt to achieve it and in doing so, positive changes to the community will occur. Benefits will apply to both local government facilities and the community, but based on the fact that local government facilities account for only 4% of the total community emissions, the bulk of emission reduction potential and benefits will apply to the private residential, commercial, and industrial sectors.

Sustainable Growth Programs

Merced has and will continue to strive toward sustainable actions. The Merced Climate Action Plan is framed by sustainability values that support healthy, prosperous, and livable communities. Current and future programs worth continuing, which also result in reduced GHG reductions, include:

- Development of the High Speed Rail Station and Environs
- Land Use Development Consistency with the San Joaquin Valley Blueprint
- Continued Implementation of Merced’s Urban Village Concept
- Water Supply Conservation Efforts
- Waste Management Efforts
- Bicycle Transportation and Planning
- Employee Trip Reduction Plan
- Fleet Management



CAP Capacity -- Overview

In PART 3 of the Climate Action Plan, the capacity of the Merced Community was assessed to gauge its ability to implement the Plan. The assessment discussed opportunities, challenges, community partners, leadership, and funding. The key findings of this assessment are summarized below:

Opportunities

As noted in a study by UC Davis ¹, the City of Merced has a good potential to transition into a sustainable community. The capacity assessment identified several opportunities that support this conclusion, and include the following:

- *University of California, Merced:* From the beginning, UC Merced was envisioned to be a campus shaped by sustainability, possessing the potential to pilot sustainability strategies that can be a model for other growing communities.² Such strategies include the following efforts: Sustainability Strategic Plan, Triple Net Zero Commitment, LEED (Leadership in Energy and Environmental Design) Buildings, and Public Engagement.
- *Merced's Urban Villages:* The City's General Plan is based on the concept of the "urban village," a form of transit oriented development and mixed use development, which are foundational elements of reducing GHG emissions through land use planning.
- *High Speed Rail Station:* The planned High Speed Downtown Rail Station has the potential to reduce GHG emissions through reconstruction projects, provision of an alternative long distance travel mode, and infill development.
- *Housing:* The older housing units in the City of Merced provide an opportunity for energy-efficiency upgrades. Model programs such as the Valley Innovative Energy Watch (VIEW) Partnership should be considered in Merced to achieve such upgrades. The VIEW Partnership is between Southern California Edison (SCE), Southern California Gas Company (SCG), the counties of Kings and Tulare, and the cities of Hanford, Lindsay, Porterville, Tulare, Visalia, and Woodlake.²¹
- *San Joaquin Valley Blueprint:* The San Joaquin Valley Blueprint is a long range vision for a more efficient, sustainable, and livable future for the Valley. Blueprint Planning efforts are highly regarded as probable templates for creating Sustainable Community Strategies (SCS) in the next generation of Regional Transportation Plans, giving the Blueprint Plans a greater role in regional and local land use planning. The SCS is the key AB32 driver to reduce GHG emissions through land use planning.

- *Bellevue Corridor Community Plan:* A State of California objective for the grant of funds to the City of Merced to prepare the Bellevue Corridor Community Plan is to support the development and implementation of effective and/or innovative local plans that support the State’s AB 32 GHG emission reduction targets and implement SB 375, while creating sustainable communities. Looking to obtain future funding sources for City infrastructure, the *Bellevue Corridor Community Plan* may be used to successfully compete for federal and state transportation funds.
- *Compact Urban Growth:* Urban growth occurs as redevelopment, infill, or urban expansion. The City’s General Plan emphasizes compact urban growth and infill over urban expansion, but recognizes that large-scale redevelopment is a less likely method of accommodating population demands. Although the General Plan update includes a large future growth area, *Urban Expansion* policies are in place to manage the rate of urban expansion based on community needs.



- *Water Conservation Efforts:* The Mission of the City’s Water Division is to provide the City of Merced with a continuous supply of clean and safe drinking water, while promoting water conservation. These goals are implemented through several conservation programs and through collaboration with other water supply agencies.
- *Sustainable Growth Programs:* The City is engaged in several programs that reduce GHG emissions, including: land use planning, bicycle transportation planning, downtown revitalization, waste management, “Build a Green Fleet” program, water conservation, employee trip reduction plan, and a municipal energy-efficiency retrofit program.

Challenges

There are challenges and potential obstacles to implementation of the City of Merced Climate Action Plan that need to be acknowledged and overcome if the benefits of the Climate Action Plan (CAP) are to be realized. The Climate Action Plan (CAP) is being implemented during one of the most challenging economic times for California and the nation in memory; it is especially challenging in California's Central Valley. However, it must be remembered that while the challenges are great at the inception of the implementation phase, conditions will shift and shift again during the period of implementation (2012 – 2020).

While the Community faces several challenges, there could also be positive flip-sides to them. For example, while many members of the community may lack the financial resources to perform energy upgrades, this trait could also make them eligible for financial grants and aid or program assistance. Implementers of the Plan should be aware that challenges may be portals of opportunity. Challenges include: local economy and associated unemployment and low wages, low public awareness and associated support; limited supply of funds and staff, and language barriers.

Leadership

Effective implementation of the strategies will require the participation and cooperation of an array of Federal, State, and local government agencies and quasi-public and non-profit organizations. In these times of reduced budgets and staff, a balanced use of resources and coordination of efforts will be necessary to successfully implement the plan.

Community Partnerships

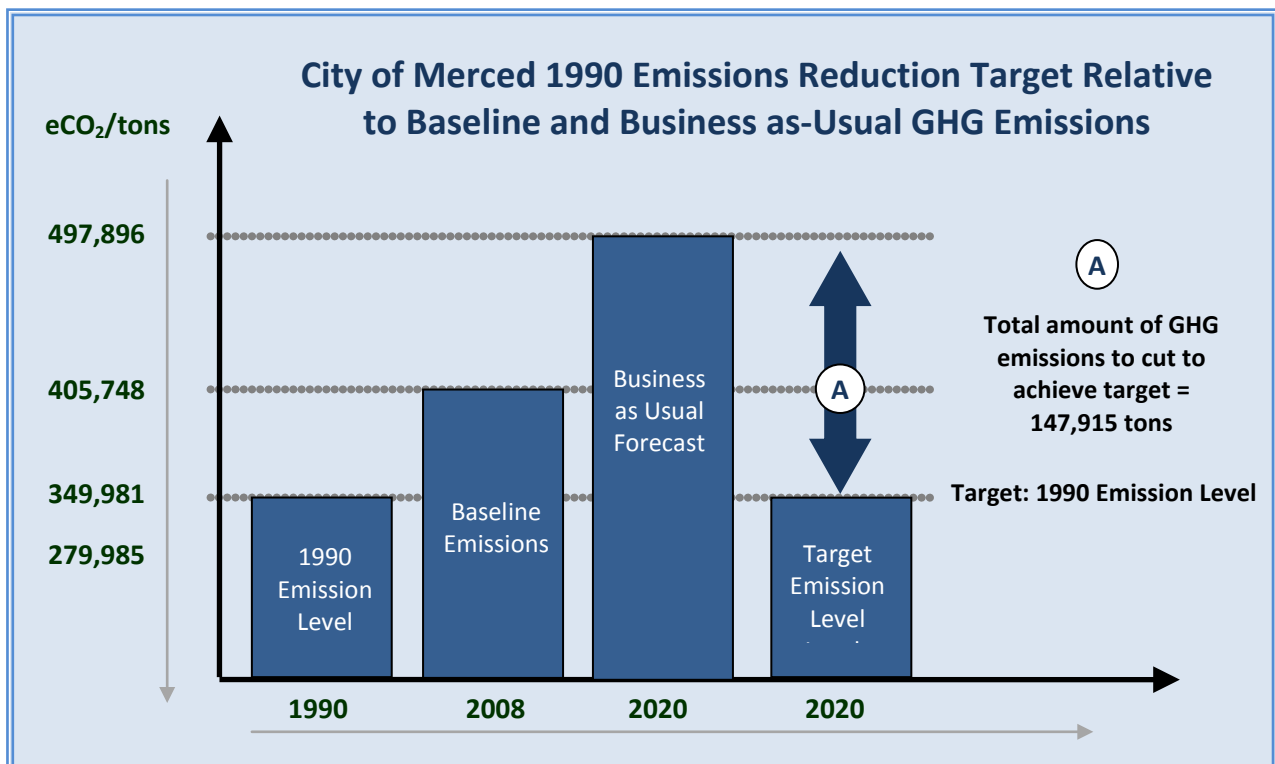
Several community groups having sustainability programs exist in the community. These include Merced County Community Action Agency, CALPIRG's Energy Service Corps (ESC), the *Greater Merced Chamber of Commerce's* REACON Team, among others, who implement activities to improve energy efficiency and waste management.

Funding

If federal and state emphasis on climate change and sustainable growth continue, a broad range of funding sources and financial tools will be available to implement many of the recommended actions. It will be important for the community to be able to recognize these potential funding sources, and to have a strategy in place to successfully compete for them.

GREENHOUSE GAS EMISSION REDUCTIONS

On June 6, 2012, the Merced City Council voted that a greenhouse gas reduction target of “1990 levels by 2020” be utilized in the Climate Action Plan. Due to the availability of data and suitability to estimate the 1990 emission level, a GHG inventory of 2008 emissions was completed (Background Report, Chapter 8). Based on the 2008 baseline emission and the business-as-usual emission projection, 147,915 metric tons of CO₂e will need to be removed from Merced’s annual GHG emissions. Future adjustments to this estimate may be required due to differences between forecasted population growth and actual population changes.



GHG Reductions Targets by Plan Goal

The summary table below identifies the Plan’s goals, the number of strategies and actions within each goal area, and the goal’s contribution toward the GHG reduction goal. Each goal area has a dedicated section within this document (PART 4) where specific strategies and actions are described.

Numbers of Strategies and Actions and GHG Reduction Targets by Goal				
Merced CAP Goals	Number of Distinct Strategies	Number of Distinct Actions	Percent of Total Reduction	Anticipated MTCO₂e by 2020
Enhance Mobility (EM)	5	20	21.0%	31,062
Sustainable Community Design (SC)	5	24	10.0%	14,792
Air Resources (AR)	4	20	10.0%	14,792
				60,645
Water Conservation (WC)	4	19	5.0%	7,396
Renewable Energy (RE)	2	12	23.0%	34,020
Building Energy Conservation (BE)	6	32	30.5%	45,114
				86,530
Waste Reduction (WR)	2	13	0.50%	740
Public Outreach	3	16	0.0%	0
TOTALS	31	156	100%	147,915