PART 2: Context of Climate Action Plans

What Climate Action Planning is and why Merced is Involved

PART 2: CONTEXT OF CLIMATE ACTION PLANNING

Though the key product of the Climate Action Plan (CAP) is a set of measures that Merced can deploy to reduce greenhouse gases, it is first necessary to understand the context of Climate Action Planning as it applies to the City of Merced. Five key topics are discussed:

- A Call to Action
- Regulatory Drivers of Greenhouse Gas Reduction
- Merced Responds
- Sustainable Merced
- Climate Action Plan Values

A CALL TO ACTION

Introduction

During the 1970's, sweeping environmental laws were agents of change that led to advancements in technological improvements and operations resulting in cleaner industries, cars, and buildings. Due to cleaner operating cars and factories, air pollution in many parts of the country decreased. For example, high levels of smog dropped significantly in the City of Los Angeles due to technological advancements such as the catalytic converter and the California Smog Check Program. Concerns over environmental impacts became part of the decision-making process for projects, programs, and policies. Forestry and mining practices were scrutinized and new methods to extract these resources were put in place to lessen the impact on our forests and other denuded lands. Despite these advancements, biological and material resources upon which mankind relies, continue to be impacted.

Climate Change

Global Climate Change (GCC), which is now generally accepted by 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, GCC 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. The State of California's AB32 Scoping Plan states that "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] As in earlier decades, focused environmental stewardship efforts continue to evolve and develop.

Climate Adaptation

Despite State efforts to reduce GHG emissions, the effects of climate change will still be felt in communities in the coming decades. [4] As Merced prepares a Climate Action Plan (CAP), the potential impacts of climate change should be considered to reduce negative impacts to its citizens.

In response to Governor Schwarzenegger's *Executive Order S-13-08*, the Natural Resources Agency, in cooperation with multiple state agencies, prepared the "2009 California Climate Adaptation Strategy," which provides recommendations on how to manage against climate change threats. According to that document, hazards that may directly affect Merced include high temperatures, flooding, and drought. These hazards have always been present, but with the progression of climate change, these will become more severe and frequent. [49]

Many of the actions identified in the CAP to reduce GHG emissions will also help the City of Merced's government, businesses, and residents adapt to a changing climate. For example, extreme and prolonged heat waves can put considerable strain on the reliability of energy delivery in peak periods, possibly leading to service disruptions during times when cooling is most needed. By increasing energy-efficiency across the City, such service disruptions are less likely and the City will be able to better cope with those situations. Expanding Merced's urban forest would also help citizens cope with heat waves and reduce energy demand and associated costs.

REGULATORY DRIVERS OF GHG REDUCTION

Introduction

Many state and federal policies, initiatives, and planning efforts have and continue to shape the context for creating sustainable communities. As a result of these broad visionary planning initiatives, specific regulations controlled by the State or mandated to local governments have a direct influence on City resources and GHG emissions.

The City's *Climate Action Plan Background Report* describes many of these regulations, several of which were crafted to "drive" Climate Action Planning in the State of California and to create "opportunity" for expansion of the green economic sector. In some cases, local governments are directed to take action, and in other cases, the State retains control over implementation. This section provides an overview of the broad visionary planning initiatives, highlights the most prominent of the regulatory laws and programs, lists legislation supporting of local government sustainability efforts, and discusses state trends. Additional information on these topics can be found in the City of Merced *Climate Action Plan Background Report*.

Broad Visionary Planning Initiatives

Interagency Partnership for Sustainable Communities (2009)

The Interagency Partnership for Sustainable Communities is a federal interagency initiative between the U.S. Environmental Protection Agency, Department of Transportation, and Department of Housing and Urban Development to incorporate sustainability and livability into their three agencies and coordinate policies and programs to support their livability principles. [6]

Vision California Project

The California High Speed Rail Authority in partnership with the Strategic Growth Council is developing two new modeling tools to formulate and compare how California can accommodate projected growth. Early analyses shows household costs savings from more efficient growth patterns. [6]

California Green Jobs Council

Established in 2008, the Green Jobs Council is an intergovernmental effort to help prepare workforce for the growing green economy (California Workforce Investment Board). [6]

State Planning Priorities (AB 857, 2002)

This bill established three primary state planning priorities: 1) infill development in the cities, 2) protection of open space, and 3) farmland and habitat outside the cities, and more efficient use of land wherever development occurs. These priorities suggest specific ways in which state government can

prioritize activities related to infrastructure spending and land use to promote more sustainable development in California. [6]

State Housing Element Law

While this law is more than 20 years old, specific statutory references promote multifamily development and redevelopment. Adoption of local housing elements and their programs has resulted in many communities increasing densities and promoting more infill and compact development. [6]

20x2020 Water Conservation Plan

The California Department of Water Resources, in cooperation with other state agencies to determine where a 20 percent reduction in water usage would be feasible, prepared the 20x2020 Water Conservation Plan, a framework for state and local action on water conservation. [7]

California Water Plan Update 2009

This Plan prepared by the DWR details comprehensive strategies for integrated water management, and documents the issues and concerns facing water management in California and a vision for sustainability.[6]

Urban Water Management Planning Act

In 1983, State Assembly Bill 797 modified the California Water Code Division 6, by creating the *Urban Water Management Planning Act* (UWMPA). Since the passage of SB 610 and SB 221 in 2001, developers must show that large new developments will have an adequate 20-year supply of water before each development can be approved. Recent amendments to the UWMPA are the result of the enactment of Water Conservation Bill of 2009, and other legislation.

Global Warming Solutions Act

Since 2005, the State of California has responded to growing concerns over the effects of climate change by adopting a comprehensive approach to addressing emissions in the public and private sectors. California's role as a global leader in reducing GHG emissions was solidified with the passage of the Global Warming Solutions Act of 2006 (AB 32). AB 32 requires the state to reduce its greenhouse gas emissions to 1990 levels by 2020. It also required the California Air Resources Board (CARB) to develop a policy plan for reaching AB 32 emissions reduction goals and to adopt and enforce regulations to implement the plan. The resulting AB 32 Scoping Plan was adopted by CARB in December 2008. Among the many strategies articulated, it encourages local governments to reduce emissions in their jurisdictions by a degree commensurate with state goals. AB 32 stopped short of setting mandatory targets for local government compliance. The state has not set an air quality threshold, though it has the authority to do so through the CARB. [26]

The San Joaquin Valley Air Pollution Control District is one of 35 districts in California responsible for enforcing state and federal air pollution reduction laws, including AB 32, and can establish greenhouse gas threshold levels that are enforceable within their jurisdiction. [26]

State-Controlled Regulations

The following are state reduction strategies included in the AB 32 Scoping Plan. The State of California has approved, programmed, and/or adopted these actions. Furthermore, they are programs or projects that require no local involvement.

Low Carbon Fuel Standard

The State is proposing to reduce the carbon intensity of transportation fuels consumed in California. To achieve this, CARB is developing a Low Carbon Fuel Standard (LCFS), which would reduce the carbon intensity of California's transportation fuels by at least 10% by 2020 and 20% by 2035 as called for by Governor Schwarzenegger in Executive Order S-01-07. LCFS will incorporate compliance mechanisms that provide flexibility to fuel providers in how they meet the requirements to reduce greenhouse gas emissions. CARB estimates the Low Carbon Fuel Standard will reduce California's projected 2020 transportation emissions by 6.7%. [48]

California's Renewable Energy Portfolio Standard (RPS) (SB 1078)

Established in 2002 in Senate Bill 1078, the RPS program requires electricity providers to increase the portion of energy that comes from renewable sources to 20% by 2010 and to 33% by 2020. CARB estimates the RPS will reduce California's emissions from electricity use by 15.3% in 2020. [48]

Assembly Bill 1493 (Pavley)

Assembly Bill 1493 (Pavley), signed into law in 2002, requires carmakers to reduce greenhouse gas emissions from new passenger cars and light trucks beginning in 2011. The California Air Resources Board adopted regulations in September 2004 that create two phases of increasingly stringent standards for car manufacturers between 2009 and 2020. The first phase, which has already been adopted, is expected to reduce California's projected 2020 transportation emissions by 7.3%. [48]

Heavy-Duty Vehicle Emission Reduction (Aerodynamic Efficiency) Standard.

Outlined in the AB 32 Scoping Plan, this reduction requires heavy-duty trucks and trailers to be retrofitted with the best available technology and/or CARB-approved technology to improve fuel efficiency, including devices that reduce aerodynamic drag and rolling resistance. The requirements apply to California and out-of-state registered trucks that travel to California. This measure requires in-use trucks and trailers to comply through a phase-in schedule starting in 2010 and achieve 100% compliance by 2014. [20]

California CAP AND TRADE Program

The cap-and-trade program is a centerpiece of the state's landmark effort to cut greenhouse gas emissions to 1990 levels by 2020, and accounts for one-fifth of the planned cuts under AB 32. It would cover 600 power plants, factories, and other industrial facilities, which account for 80% of California's greenhouse gas emissions [31]

The cap-and-trade program was scheduled to begin operating on January 1, 2012, but in February 2011, a California judge's ruling put the move on hold until CARB completed a compliant CEQA analysis of alternative measures to cut greenhouse gases other than carbon trading. [14] Though the program has broad support in the environmental community, several neighborhood organizations and environmental justice groups that focus on localized pollution, have been fighting the program in court saying it would allow industrial plants to avoid installing the strictest pollution controls. CARB is drafting an analysis of alternatives, and will delay the program until 2013. [29]

State-Imposed Mandates to Local Governments

The California legislature has recently imposed several laws in various sectors directing local governments to address climate change. Many of the City's Climate Action Plan greenhouse gas reduction measures derive from these mandates.

CURRENT AND LONG-RANGE PLANNING

Sustainable Communities Strategy (SB 375)

SB 375 (2008) revises the process of regional transportation planning by metropolitan planning organizations (MPOs), which are governed by elected officials from local jurisdictions. It seeks to reduce emissions by linking transportation funding to land use planning. It requires the Metropolitan Planning Organizations to create sustainable communities strategies in their regional transportation plans to achieve each region's greenhouse gas emissions reduction target. The statute calls on CARB to establish regional transportation-related greenhouse gas targets and requires MPOs to develop a regional "Sustainable Communities Strategy" (SCS) of land use, housing, and transportation policies that will move the region towards its GHG target, or an "Alternative Planning Strategy" (APS) if the SCS cannot achieve the GHG reduction goals. It is envisioned that emission levels would be reduced through reduced vehicle miles traveled and sprawl, and promotion of higher density. The statute stipulates that transportation investments must be consistent with the Sustainable Communities Strategy and provides CEQA streamlining for local development projects that are consistent with the Strategy. [26]

While SB 375 operates at a local level, it is linked with a regional scale vision. SB 391 (2009) requires that by December 31, 2015, Caltrans will complete the California Interregional Blueprint and California Transportation Plan that integrates state transportation plans, regional transportation plans, and regional blueprint planning to plan a multi-modal transportation system needed to achieve AB 32 targets. [6]

The AB 32 Scoping Plan estimated that the state's emissions will be reduced by an estimated 1% by 2020 as a result of SB 375.

CEQA – Global Warming Guidelines (SB97, Dutton, 2007)

SB 97 required the Office of Planning and Research (OPR) to prepare guidelines for the feasible mitigation of GHG emissions, as required by CEQA, including effects associated with transportation and energy consumption. The guidelines created new requirements for CEQA documents to identify and mitigate for GHG emissions. The bill also tasked the CARB to create energy-use and transportation thresholds for CEQA reviews which, if exceeded, would require local governments to account for greenhouse gas emissions when reviewing project applications. [26]

Pursuant to law, the State Office of Planning and Research updated CEQA guidelines to require analysis of climate change in CEQA documents, which came into effect in March 2010. Many jurisdictions are finding that climate change impacts from local government activities are "significant" under CEQA, and

are identifying emissions reduction targets and Climate Action Plans (ICLEI Milestones Two and Three) as mitigation measures to reduce climate change impacts to less-than-significant levels. [26]

BUILDING DESIGN AND OPERATION

California Green Building Standards Code (CALGreen, Title 24, Part 11)

As part of the compliance with Assembly Bill 32, the State of California has developed a new, mandatory California Green Building Standards Code, (CALGreen), which took effect on January 1, 2011, and is applicable to most new residential, commercial, office and institutional buildings; it does not apply to remodels. CALGreen establishes standard and compulsory minimum green building regulations to reduce construction waste, increase building energy efficiency, and reduce indoor water use, that affect all construction state-wide. It is distinct from Part 6 of Title 24, the California Energy Code.

California's "green building" code goes beyond energy performance to encompass all sorts of things like reduced construction waste, water conservation, non-toxic sealants, renewable materials, etc. By contrast the California energy standard (also known as Title 24, Part 6) focuses primarily on promoting more energy-efficient buildings, and only considers the fixed infrastructure: building envelope, heating and cooling, water heating, and some lighting restrictions. [50]

Examples of CALGreen standards for new construction include:

- 20% mandatory reduction indoor water use and 50% mandatory reduction in landscape irrigation accomplished through performance or prescriptive measures;
- 50% mandatory diversion of construction waste from landfills; an

- Mandatory quality inspections of energy systems, such as air conditioners, for non-residential buildings over 10,000 square feet.

The Natural Resources Agency added a new provision, Section 15183.5 that became effective in March 2010, which provides a framework for plan-level greenhouse gas emissions reduction plans. An adequate plan must: [26]

- **Quantify existing and projected community-wide greenhouse gas emissions over a specified time period;**
- **Establish greenhouse gas emissions reduction targets over the life of the plan which, if achieved, would render the community's greenhouse gas emissions to be less than significant;**
- **Identify and analyze the greenhouse gas emissions resulting from specified activities in the community;**
- **Identify a suite of specific, enforceable measures that, collectively, will achieve the emissions targets;**
- **Establish a mechanism to monitor the plan's progress and to require amendment if the plan is falling short; and,**
- **Be adopted in a public process following environmental review.**

Building Energy Audit (at time of Sale, Lease or Refinance). California AB 1103 (2007)

Unlike California's stringent Title 24 building energy efficiency codes that regulate standards for commercial construction and renovations, AB 1103 comes into play when a building is sold, leased in whole, or refinanced. Along with the usual financial and transaction disclosures, it requires that building owners provide 12 months of energy-use information. The initial compliance date begins January 1, 2012.

AB 1103 requires non-residential business owners to input energy consumption and other building data into the Environmental Protection Agency's ENERGY STAR Portfolio Manager System, which generates an energy efficiency rating for the building. Ratings are from 1 to 100, with 100 being the most energy efficient. A rating of 50% means that the building performs at the midpoint when compared to similar buildings. A higher rating means lower energy costs, decreased occupancy costs, and potentially, increased building valuation.

TRANSPORTATION

Complete Streets (AB 1358, Leno, 2007)

AB 1358, the *Complete Streets Act*, requires cities and counties to plan for a balanced multi-modal transportation network that meets the needs of all users of streets, roads, and highways, including motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation. AB 1358 furthers *Merced Vision 2030 General Plan* principles to create walkable neighborhoods, foster distinctive, attractive communities with a strong sense of place, and provide a range of transportation choices.

eTRIP / Rule 9410 – Employer Based Trip Reduction

The eTRIP Rule (Rule 9410, Employer Based Trip Reduction), was adopted by the San Joaquin Valley Air Pollution Control District Governing Board on December 17, 2009. The eTRIP Rule requires larger employers to establish an Employer Trip Reduction Implementation Plan (eTRIP) to encourage employees to reduce single-occupancy vehicle trips, thus reducing pollutant emissions associated with work commutes.

Rule 9410 is applicable to employers within the San Joaquin Valley Air basin with at least 100 eligible employers, and includes the City of Merced. The employer must create an employer trip reduction plan submitted by September 1, 2011, with resubmission requirements. The employer must begin commuter verification submissions by January 1, 2014. Annual reports of the ETRIP and commuter verification must be first submitted by March 31, 2015, and every year thereafter.

WATER CONSERVATION

Model Water Efficient Landscape Ordinance

AB 1881 (Laird, 2006) directed DWR to draft a model water efficient landscape ordinance and required local agencies to adopt it by January 2011. The law demands local governments to adopt a model ordinance that requires a building or landscaping permit, plan check, and a professional design review of private or developer-installed single or multifamily landscaping of 2,500 square-feet or more, or homeowner done or homeowner-hired landscapes of 5,000 square-feet or more.

(NOTE: AB 1881 followed AB 2717, Laird, 2004, that required DWR to conduct a survey of Local Agency success in complying with AB 325, which required all local jurisdictions to adopt a landscape water conservation ordinance by 1993).

Water Conservation Bill of 2009 (SBx7.7, Steinberg, 2009)

In 2008, then Governor Schwarzenegger introduced a seven-part initiative to reduce water use. The first step of that initiative, the Water Conservation Bill of 2009, was enacted to increase water use efficiency, and requires urban water suppliers to reduce the statewide average per capita daily water consumption by 20 percent by December 31, 2020. It also requires that the State make incremental progress toward this goal by reducing per-capita water use by at least 10 percent by December 31, 2015. [7] Other provisions include the following, among others: 1) by July 1, 2011, each urban retail water supplier in its *Urban Water Management Plan* must develop water-use targets, and an interim 2015 water use target using specified methods; and 2) effective 2016, urban retail water suppliers that do not meet the water conservation requires established by *SBx7. 7* are not eligible for state water grants or loans.

The Water Conservation Bill of 2009 also takes climate change into account and will eliminate an estimated 1.4 million metric tons of greenhouse gas emissions per year. [30]

The City of Merced, using Method 1 of SBx7.7, has 2015 water use interim target of 279 annual daily per capita water use (gpcd), and a 2020 target of 248 gpcd. In order to reach these targets, the City will need to account for 8,126 acre-feet per year (afy) of water conservation savings by year 2020.[8]

WASTE MANAGEMENT

Commercial Recycling

An element of the Scoping Plan for AB 32 that directly affects the City of Merced is the Mandatory Commercial Recycling Regulation. The effective date for jurisdictions and businesses to implement commercial recycling programs is July 2012. The proposed mandatory commercial recycling regulation will reduce greenhouse gases by focusing waste reduction within the commercial sector and requiring businesses, some multifamily dwellings, and public entities to recycle. Recycled materials can include, but are not limited to, paper, plastics, glass, metals, cardboard, organics, food waste, and construction and demolition materials.

The State's GHG emissions reduction goal for waste reduction is estimated to be 5 million metric tons of carbon-dioxide equivalent per year.

Key Supportive State Regulations

The State has adopted key legislation to assist local governments to achieve state and local energy efficiency goals.

AB 811 / PACE (2007)

AB 811 (2007) authorizes all local governments in California, if they so choose, to establish special districts that can be used to finance voluntary energy efficiency, solar, or other renewable energy improvements to homes and businesses in their jurisdiction. Residential property assessed clean energy (PACE) programs were local governments' best hope for implementing renewable energy and weatherization retrofits. As a result of opposition by the Federal Housing and Financing Agency (FHFA), federal regulators have effectively put most of the local programs dealing with residential properties on hold, however. It may take additional federal legislation to get residential programs fully back on track. [26] While some communities have managed to press forward with similar programs targeting the commercial sector, the legal fight to restore PACE continues. [23]

In July 2011, the PACE Protection Act was introduced to Congress that would allow cities and counties to help property owners finance energy efficient and renewable energy modifications for their homes and commercial buildings without any government subsidies or taxes.[28]

SB 83 / Vehicle Registration Fee Funding Source

Senate Bill 83 allows transportation planning agencies to place a ballot measure before the voters of a county to authorize an increase in the vehicle registration fee up to ten dollars per year per vehicle for transportation-related projects and programs. Eligible transportation projects include the following and could help to reduce GHG emissions.

- programs and projects identified in the regional transportation plan;
- projects and programs to manage congestion including, for example, high-occupancy vehicle or high-occupancy toll lanes;
- improved transit services through the use of technology and bicycle and pedestrian improvements;
- improved signal coordination;
- traveler information systems;
- highway operational improvements;
- local street and road rehabilitation; and,
- transit service expansion.

Merced County Association of Governments (MCAG) estimates that if passed, this measure could raise $1.9 million dollars every year. MCAG would have to prepare an expenditure plan to determine what projects would use this funding. In 2009, the MCAG Board held a public meeting on the item, but did not take any action on it.

State Trends

Though the term "Climate Action Plan" is new, the establishment of energy efficiency programs and efforts to conserve our natural resources are well established community and government-related actions. For example, in 1988, under AB 4420 (Sher), the California Energy Commission (CEC) was directed to prepare and maintain the state's inventory of greenhouse gas emissions and to study the effects of GHGs. The CEC has been linking land use and energy for a number of years, and through its assessments, forecasts, and policy-making abilities, has identified state-desired energy-related funding, partnership, and regulatory actions. The CEC develops an Integrated Energy Policy Report (IEPR) to craft state energy policies. Recent notable outcomes of these reports include: [27]

- Expand efforts to provide technical and financial assistance to regional agencies and local governments to facilitate energy efficiency planning and development;
- Utilities should be directed to play an active role with regional and local governments to encourage climate-friendly and energy-efficient development in their service areas; and,
- Improvements were needed by local governments, including an energy element in their general plans.

Caltrans Deputy Directive 64

In 2008, Caltrans re-issued a policy to support biking and walking on State roads – Deputy Directive 64. It says, the Department views all transportation improvements as opportunities to improve safety, access and mobility for all travelers in California, and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation systems. The directive applies to all planning programming, design, construction, operations, maintenance activities, and products on the State highway system. [36]

Merced Responds

Introduction

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. The adoption of this Climate Action Plan will be followed by implementation of GHG reduction strategies and actions.

2008 Greenhouse Gas Emission Inventory

In 2010, the City of Merced prepared a greenhouse gas (GHG) emission inventory using 2008 as the baseline year. This inventory identified the major sources of emissions from the City of Merced including emissions from local government based sources as well as from the community as a whole (see Chapter 8 of the *City of Merced Climate Action Plan Background Report*"). The report shows the amounts and sources of GHG emissions and therefore, where staff and policymakers can target emission reduction activities in a manner that would make significant progress toward adopted targets.

MERCED'S GHG EMISSION FORECAST

Through the completion of a local emissions study, or "greenhouse gas inventory," the City of Merced has determined emissions levels for the community as a whole and for City of Merced government operations. The full emissions inventory is located in the Climate Action Plan Background Report fo the City of Merced, dated January 2011. Community-wide emissions represent the sum total of emissions produced within City limits as well as emissions resulting from electricity use within the jurisdiction, even if said electricity is generated elsewhere. In this way, the community-wide figures represent all emissions for which the community is responsible.

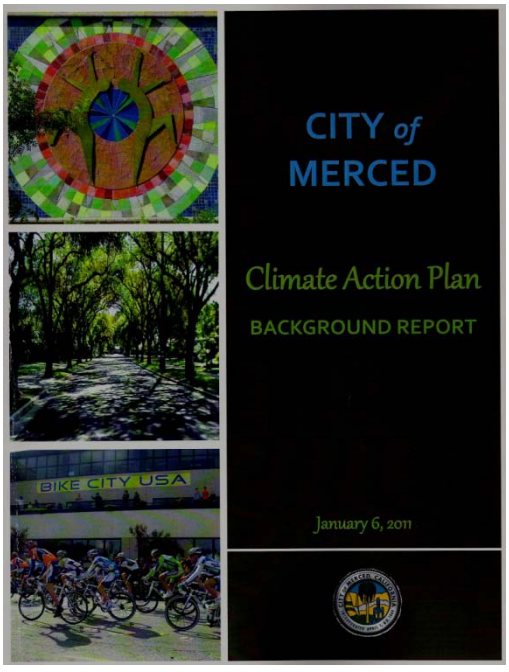
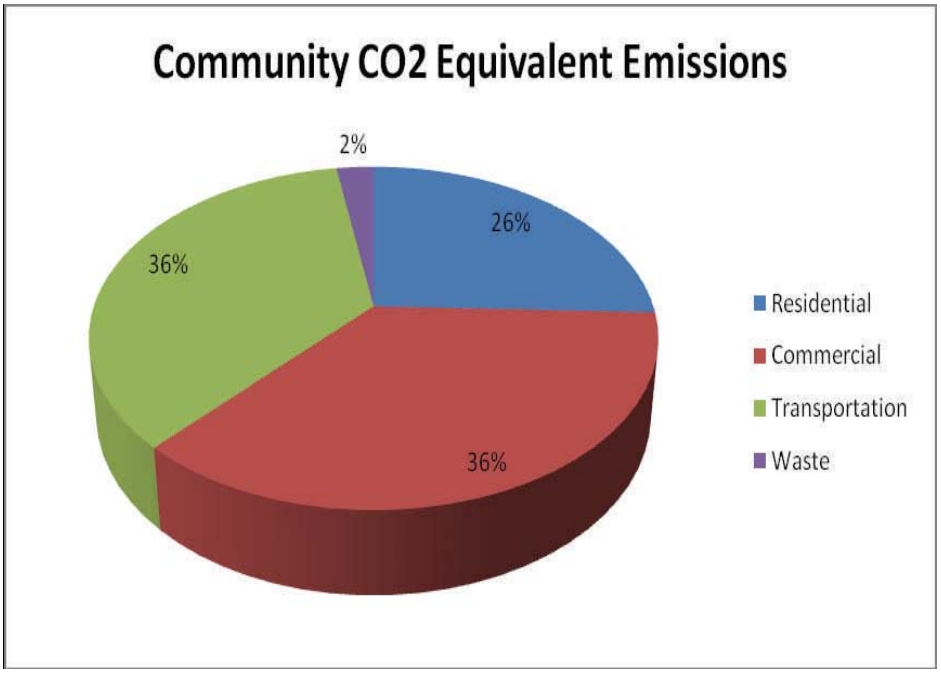
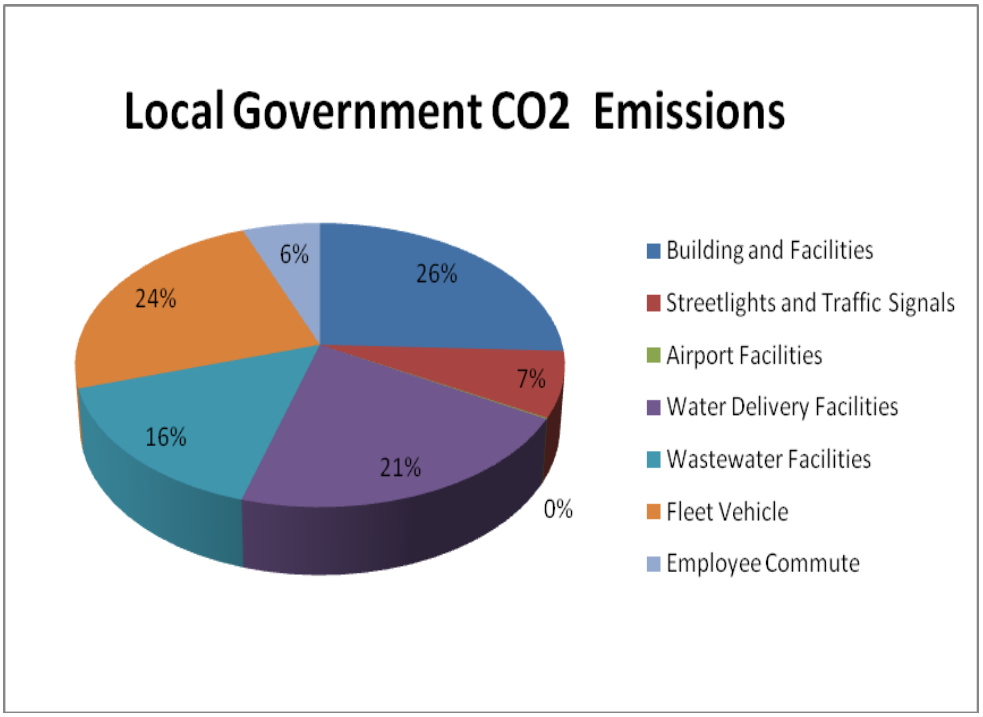


Chart: Merced Community-Wide GHG Emissions



Emissions from the City are embedded within the community-wide totals. For example, emissions from government buildings are included in the "Commercial" sector and emissions from City fleet vehicles are included in the "Transportation" figure above. Government operations are therefore a subset of total community emissions, and accounted for 4% of total community emissions.

Chart: City of Merced Government Operations GHG Emissions



ESSENTIAL FINDINGS AND IMPLICATIONS OF THE GHG EMISSION INVENTORY

Findings:

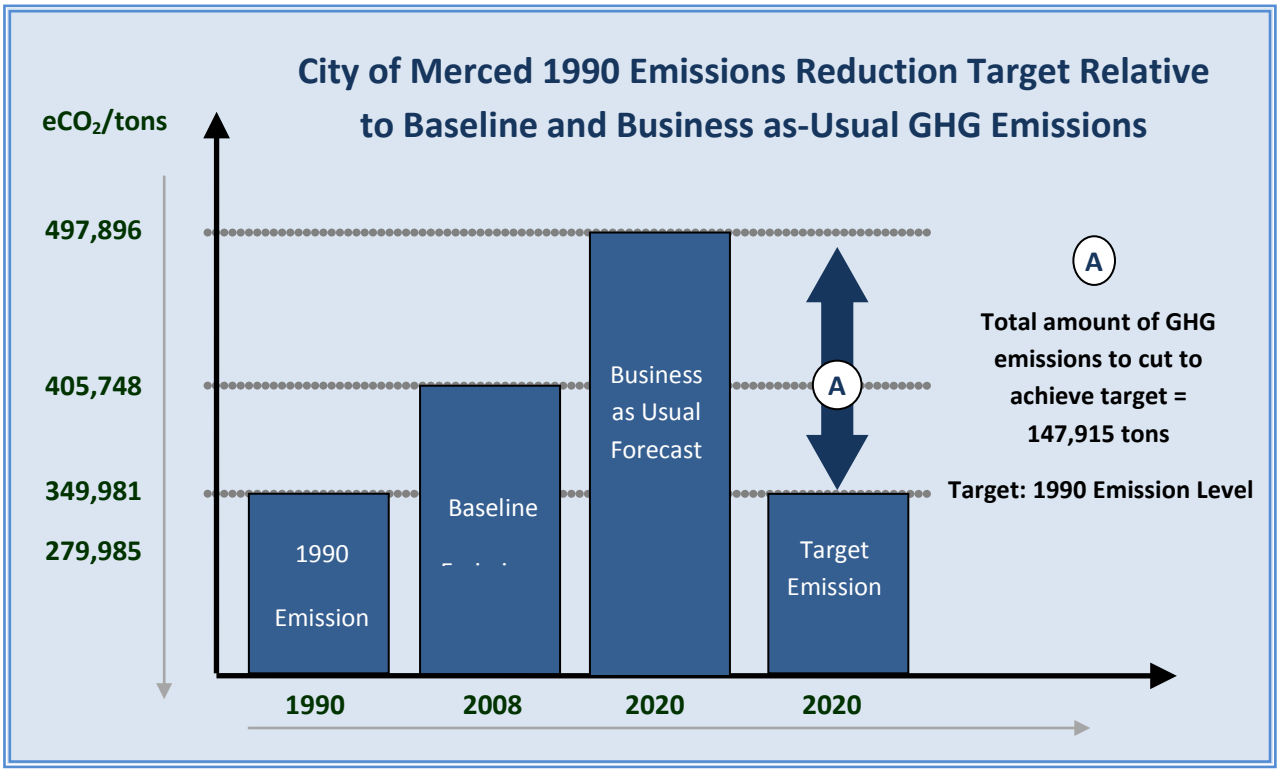
- 26% of the community's emissions originated from buildings.
- Transportation and Building Sectors produce the largest amounts of GHG emissions in the community as a whole, with 62% of the emissions originating from existing residential, commercial, and industrial buildings.
- Electricity is a major source of energy for buildings.
- The "Community" sector, which includes "Local Government" emissions, emitted approximately 405,748 metric tons of CO2 equivalent emissions in 2008. By comparison, the "Local Government" sector, a subcomponent of the "Community," emitted approximately 17,655 metric tons of GHG emissions in 2008, which represents approximately 4% of the emissions produced by the "Community," a ratio that is normal for many cities and counties.
- Emissions from "Local Government" are under the control of a single entity, the City of Merced.

Implications:

- The greatest potential for reducing emissions will result in measures that affect existing buildings.
- While the ability of the City to reach the "Local Government" target is much greater than the ability of the "Community" to reach its target, it only represents a small fraction of community-wide GHG emissions.
- Targeting GHG reductions by implementing energy efficiency and conservation measures would likely yield large emission reductions.

MERCED'S EMISSION FORECAST

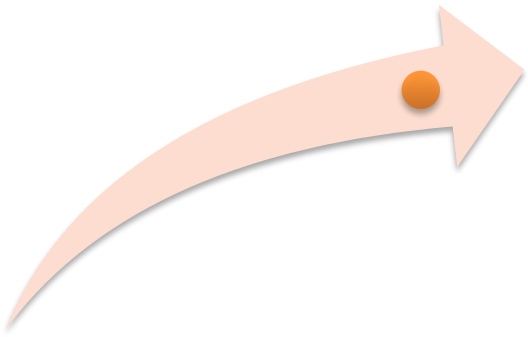
The City has also completed an emissions forecast based on projections of current data and expected future trends. The emissions forecast is a "Business-as-Usual" forecast, a scenario estimating future emissions levels if no further local action (i.e. projects within this Climate Action Plan) were to take place.



Merced's Greenhouse Gas Reduction Target

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. The City Council set two broad parameters for the CAP: 1) address emissions from government-based facilities and community-based emission sources; and, 2) address the long-term, but include a phasing plan that recognizes short-term and near term approaches to meet the long-term goal. The City Council did not specify a specific year or goal for the long-term. For purposes of this CAP, 2020 is regarded as the long-term goal.

The City Council also directed Staff to work with the 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. The numeric target provides a goal toward which to strive and against which to measure progress. It allows the City to quantify its commitment to reducing GHG emissions, demonstrating that the jurisdiction is serious about its commitment and systematic in its approach. On June 4, 2012, the City Council adjusted this target to 1990 levels by 2020.



Merced's Target: 1990 Levels by 2020

The combination of measures that the City of Merced has already implemented, are currently planned, and are presented through this Climate Action Plan, are designed to achieve the 2020 targets. Reductions rely on the best information currently available pertaining to population forecasts, future changes to building codes, and vehicle fuel efficiency standards among other information.

Sustainable Merced

Introduction

The UC Davis Sustainable Transportation Center recently published, "*Achieving Sustainability in California's Central Valley,*" and identified Merced as one of several of its transitioning cities. The report analyzed the barriers and catalysts to sustainable growth and development in Central Valley cities. A finding of the report states: "State level policies should place high priority on "transitioning cities" that will be making important future (development) decisions, and that "transitioning cities," which are not hampered by a history of poor development," will allow regional planning processes, such as the San Joaquin Valley Blueprint, AB 32, and SB 375 to have more leverage. Past planning goals to form compact urban boundaries and to implement urban villages have enabled the City of Merced to capitalize on new opportunities of the "new normal."

Merced - Staged for Sustainability

Looking to the future, the City's alignment with the state's sustainability objectives, as well as the placement of UC Merced and a future high speed rail station in Downtown Merced will result in federal and state funding for transportation projects and short and long-range planning efforts, which in turn will benefit the citizens of Merced through renewed economic opportunities and development of livable communities.

UC MERCED

According to its "*Sustainability Strategic Plan*," UC Merced, from the beginning, 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, both regionally and globally.[2] Such strategies include the following efforts:

Sustainability Strategic Plan

The 2010 Sustainability Strategic Plan represents UC Merced's first comprehensive presentation of its sustainability vision, and includes eleven sustainability goals with critical objectives and milestones for reaching each of these goals. The Plan is a roadmap to adopt sustainability practices across all campus operations. [2]

Triple Net Zero Commitment

The 2009 update to UC Merced's Long Range Development Plan (LRDP) established a "triple zero commitment," requiring the campus to produce its power renewably (known as "zero net energy"), eliminate landfill wastes (zero-net wastes), and achieve climate neutrality (zero net emissions footprint) by 2020. [2]

LEED (Leadership in Energy and Environmental Design) Buildings

UC Merced boasts six LEED Gold buildings, 2 LEED Silver buildings and anticipates receiving certification for the nation's first LEED Gold child care facility built with modular construction. The 2009 Long Range Development Plan establishes a minimum of LEED Gold for all future buildings, with LEED Platinum certification as a target.[2]

Public Engagement

UC Merced faculty, students, and staff are actively engaged in community services, and support and provide leadership in many local organizations. More than half of the campus' 100 student clubs and more than 25 percent of all students actively participate in or facilitate community service programs. [3] (See Chapter 4 of the Climate Action Plan Background Report, "*Community Green Goals, Policies and Activities*").

HIGH SPEED RAIL

The planned High Speed Rail Station has the potential to reduce GHG emissions through reconstruction projects, provision of an alternative long distance travel mode, and infill development.

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. It is made up three elements: (1) a 2050 growth scenario diagram that identifies areas of existing development, new development, and future regional transit and highway improvements; (2) a Valley-wide average target density of 6.8 units per acre for new residential growth to the year 2050; and (3), the Blueprint reflects the combined visions of the eight Regional Planning Agencies for the future through a set of 12 Smart Growth Principles. These principles are based on the core values of Valley residents, identified early in the Blueprint process and

will continue to be used as a basis of future Blueprint planning and implementation. Six of these principles overlap with outcomes of GHG reduction efforts.

- Create Walkable Neighborhoods
- Encourage Community and Stakeholder Collaboration
- Foster Distinctive, Attractive Communities with a Strong Sense of Place
- Provide Mixed Land Uses
- Provide a Variety of Transportation Choices
- Strengthen and Direct Development Towards Existing Communities

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.

Merced's Sustainability Accomplishments

The City has and will continue to reduce GHG emissions through several significant programs. Chapter 3 of the Background Report, "*City of Merced Green Goals, Policies and Activities*," lists 88 of these programs. Key programs are summarized below.

MERCED VISION 2030 GENERAL PLAN

As part of the Climate Action Plan Background Report, City Staff assessed existing policies of the *Merced Vision 2030 General Plan,* adopted in January 2012, to gauge its alignment with current planning trends relative to Climate Action Planning, such as smart growth, transit-oriented development, and mixed-use development. In keeping with its namesake, the vision of the General Plan aligns substantially with these concepts (please see Chapter 3 of the Background Report, "C*ity of Merced Green Goals, Policies and Activities*," for more details). Key themes of the *Merced Vision 2030 General Plan*, which are consistent with efforts to reduce greenhouse gas emissions, include:

Smart Growth Policies – The City of Merced is a "Smart Growth" leader in the Central Valley as evidenced by inclusion of "mixed-use urban villages" in the *Merced Vision 2030 General Plan*.

Infill Development Policies – The City's General Plan recognizes the financial and quality of life aspects of developing infill sites.

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 *Merced Vision 2030 General Plan* update includes a large potential future growth area, Urban Expansion policies are in place to limit urban expansion. The goals of the General Plan Urban Expansion Chapter are: 1) a compact urban form through infill and controlled annexations; 2) preservation of agriculturally significant areas; and 3) efficient urban expansion (refer to urban expansion policies UE-1.1, UE-1.2, UE-1.3, UE-1.4, UE-1.5, and UE-1.6.).

WATER SUPPLY AND 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 (listed below), and through collaboration with other water supply agencies to manage regional water resources including the Merced Area Groundwater Pool Interests (MAGPI) and Integrated Regional Water Management Plan (IRWMP).

- Water Conservation Public Information Program
- Water Conservation School Education Program
- Water Waste Prohibition Program
- Leak Detection and Repair Program
- Water Metering Program
- Residential Plumbing Retrofit Program

WASTE MANAGEMENT EFFORTS

The annual waste tonnage from November 2009 to October 2010 was 62,384, which was comprised of 3,536 tons of recycling materials, 9,516 tons of green waste, and 49,332 tons of refuse. The City's Curbside Recycling Program allows clean paper/cardboard, clean and empty glass bottles, clean and empty tin/aluminum cans and plastics in a jug or bottle form to be placed in recycling containers. The City's curbside recycling program does not include plastic bags, polystyrene, aseptic containers or batteries. The City promotes commercial recycling and has 65 commercial customers that are using City containers to recycle cardboard and/or clean paper. The Merced County Landfill has a compost permit good for green waste compost, not including food waste.

FLEET MANAGEMENT

The City of Merced's green fleet currently inventories 7 Ford Escape Hybrids, 5 CNG powered garbage trucks, 7 CNG pickup trucks. In July 2011, the City was notified as an approved grant recipient totaling $609,086 to purchase 22 additional hybrid automobiles which would bring the total alternate fuel inventory to 41, which is 13.8% of the total number of motorized vehicles. It should also be noted that all larger diesel powered trucks in the existing fleet either meet the 2010 EPA Emission Standards or are retrofitted with diesel particulate filters (DPFs) which greatly reduce diesel particulates normally released into the air.

BICYCLE TRANSPORTATION AND PLANNING

The City of Merced has a strong Bicycle Planning program as evidenced by general plan policies, an established Bicycle Advisory Committee, and continued improvement of bicycle facilities. In February 2009, the City Council established the Bicycle Advisory Committee to serve as an advisory body to the City Council on matters having to do with bicycle transportation within the City of Merced. The City was also awarded the League of American Bicyclists' Bike Friendly Community Program *Honorable Mention Award* in 2010.

EMPLOYEE TRIP REDUCTON PLAN

The City of Merced City Council adopted Resolution 2010-53 authorizing the City to become a Healthy Air Living (HAL) Partner with the San Joaquin Air Valley Pollution Control District. An immediate action of the resolution was to form the "Alternative Transportation Team," whose primary goal is to increase employee walking, biking, and carpooling to work. This goal will be reached through an education and incentive program that includes a monthly HAL Newsletter.

Climate Action Plan Values

Introduction

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 emission within this larger framework of sustainability.

Benefits of Climate Protection Measures

In addition to reducing GHG emissions, Climate Action Plan strategies also reduce traffic congestion, reduce air pollution, provide job opportunities, create savings opportunities, and help to create more vibrant, livable communities for Merced's citizens and businesses. In identifying GHG reduction measures for the CAP, the Committee and City CAP Team took care to be aware of such benefits in order to deploy efficient use of City resources. Co-benefits include:

HEALTHY CITIZENS

Climate change mitigation activities, particularly those related to transportation, help to clean the air by reducing vehicle emissions. These strategies ultimately create less air pollution, which results in fewer air quality-related public health impacts, such as asthma and other respiratory ailments. Reducing global warming pollutants also helps cities comply with federal air quality regulations and preserves federal funding for local projects.

A LIVABLE ENVIRONMENT AND COMMUNITY

Climate change strategies, particularly those related to air, water, and land resources, help to maintain life sustaining natural resources in quantities and quality for use by future generations. For example, water conservation strategies, such as reducing water demand also reduces energy usage and associated GHG emissions from water-pumps. Designing our roadways for multiple users can reduce storm water flows and water pollution, and encourage bicycling and walking. Enhanced urban forests beautify neighborhoods and reduce building cooling costs and associated GHG emissions. Potential negative impacts from air and water pollution generated from solid waste landfills are reduced through increased efforts to reduce, reuse, and recycle materials.

RENEWABLE ENERGY RESOURCES / A PROSPEROUS ECONOMY

Decreased energy costs and the provision of new energy services and technologies give local government and private firms a competitive edge. Demand for energy efficient products and services and for new or alternative energy technologies expands local business and creates local jobs. Actions that reduce GHG emissions can also reduce electricity and fuel use, thereby reducing energy costs for citizens, businesses, and local governments, and expanding their disposal incomes, bottom line, or budgets.

COMMUNITY ENGAGEMENT

Efforts to reduce GHG emissions will be maximized by the strengthening and expansion of community partnerships. While the impetus for this increased level of activity may originate from Climate Action Planning efforts, a renewed platform of community spirit, activism, and civic pride will arise to benefit a wide array of public and private programs and activities.

Climate Action Plan Values and Goals

Recognizing the importance of these co-benefits and their relationship to greenhouse gas reduction, the Merced Climate Action Plan is framed by four values that support healthy, prosperous (job growth and increased savings), and livable communities. Each value has a unique set of goals, strategies, and actions that are further defined in PART 4 of the CAP.

- Healthy Communities
- Quality Natural Resources
- Clean Energy Resources
- Leaders and Partners