AGENDA ITEM: D and F

CLIMATE ACTION PLAN AD-HOC ADVISORY COMMITTEE: August 3, 2011

CITY OF MERCED Development Services

TO: Climate Action Plan Ad-Hoc Advisory Committee

FROM: Bill King, AICP, Principal Planner

DATE: August 3, 2011

SUBJECT: Draft Climate Action Plan Measures

ACTION REQUIRED: Group Discussion and Advisory Comments to Staff

DISCUSSION

City Staff seeks your comment on the draft greenhouse gas emission measures. The draft measures are grouped into four main categories (Attachment A). Within these main categories, the draft measures are grouped under goals. This format was chosen to show how greenhouse gas reduction measures complemented other important goals of the City.

The draft measures were selected from various sources including the following:

- List of Measures from ICLEI's CAPPA List
- List of Measures from CAPCOA
- Merced Vision 2030 General Plan Polices
- Empowering Sustainable Communities, ICLEI USA Annual Report 2010
- US Mayors Climate Protection Agreement, Climate Action Handbook. ICLEI Local Governments for Sustainability with support from the City of Seattle and the U.S. Conference of Mayors
- Local Government Strategic Energy Action Report. Navigant Consulting, SAIC, and Innovologie for the California Public Utilities Commission Energy Division. June 15, 2010
- City of Merced Climate Action Plan Advisory Committee Work-Sheets

This draft emphasizes Merced Vision 2030 General Plan Polices in order to show internal consistency. This internal consistency of planning documents will enable the Climate Action Plan to be supported by the Environmental Impact Report of the General Plan, providing the CAP a strong foundation to implement policies and to require actions in the permitting process. Similarly, it helps to streamline the review period for development projects.

The inclusion of the General Plan policies also assures that existing measures are not overlooked.

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STAFF REQUEST

The method used to show internal consistency and to capture existing policies and direction for programs and actions, have led to the creation of a long list of measures. The meeting is divided into two parts.

Part I will focus on shortening the list. There is a need to highlight important measures, while retaining the ability to show consistency with the General Plan. Staff seeks your assistance to identify and add where appropriate, key actions that will lead to direct emission reductions. The Committee should also review the document to determine if greater or lesser emphasis should be placed on certain goals.

Part II of the meeting will focus on the wording of selected actions. Please review the document and identify actions that you believe would be noteworthy to discuss. Every meeting attendee will have the opportunity to share this list with the committee and we'll all need to stay focused to move through the list of actions to discuss.

Please review the document prior to the meeting and come to the meeting with ideas and comments

Staff is aware of the need to format the goal, measure and action numbers.

RESOURCE DOCUMENTS

If any Committee member would like to receive a copy of the long list of other community's measures and actions that staff prepared and was provided to the Committee in May, then please make such request.

Attachment:

- A. Organization of Measures and Actions
- B. Draft List of Goals, Measures and Actions

Organization of Measures and Actions

Healthy Communities

Goals

- Mobility / Shift Single-Occupancy Vehicle Trips to Alternative Modes / Transportation Choice
- Create Distinct Communities
- Local Food Production

Quality Natural Resources

Goals

- Water Conservation
- Protect Air Resources
- Waste Reduction
- Open Space

Energy Resources

Goals:

- Increase the use of Renewable Energy Sources to Power Buildings
- Building Energy Conservation

Cross-Cutting Goals

Goals

- Public Education and Outreach
- Sustainable Community Design

ATTACHMENT A

Healthy Communities

GOALS

- Mobility / Shift Single-Occupancy Vehicle Trips to Alternative Modes / Transportation Choice
- Create Distinct Communities
- Local Food Production

Goal 1. Mobility. Shift Single-Occupancy Vehicle Trips to Alternative Modes – Or Transportation Choice

MEASURE RE 6.1: Transit Planning

Support and participate in regional public transit planning (General Plan Policy T-2.2, Implementing Action 2.2.e).

- AR 6.1.1: Provide for and Maintain a Major Transitway Along "M" Street and Possibly Along the Bellevue Road/Merced-Atwater Expressway and Campus Parkway corridors (General Plan Policy T-2.1).
 - Cooperate with Merced County and other interested agencies outside the City to maintain long-term flexibility to achieve an "M" Street Transitway (General Plan Policy T-2.1, Implementing Action 2.1.b).
 - Continue to review land use decisions in the vicinity of "M" Street and Bellevue Road
 to avoid creating or increasing conflicts with the proposed future major commercial
 and office park sites at the major transfer point between designated transitway
 corridors (General Plan Policy T-2.1, Implementing Action 2.1.c).
 - Cooperate with Merced County and other interested agencies outside the City to maintain a viable option for a Bellevue Road Transitway to provide regional public transit access to the University of California (UC) campus (General Plan Policy T-2.1, Implementing Action 2.1.d).
 - Cooperate with Merced County and other interested agencies outside the City to evaluate the need to extend westward the Bellevue Road Transitway Corridor Concept (General Plan Policy T-2.1, Implementing Action 2.1.e).

- Work cooperatively with Merced County and other interested agencies to review and evaluate development proposals in the vicinity of Bellevue Road that might conflict with the prospective Bellevue Transitway (General Plan Policy T-2.1, Implementing Action 2.1.f).
- Plan for multi-modal transfer sites that incorporate auto parking areas, bike parking, transit, pedestrian and bicycle paths, and park and ride pick-up points (General Plan Policy T-2.2, Implementing Action 2.2.f).
- Encourage park and ride lots at suitable locations serving long distance and local commuters (General Plan Policy T-2.2, Implementing Action 2.2.g).
- AR 6.1.1: Plan the area around new commuter, passenger, and mainline rail stations to provide convenient and safe pedestrian and bicycle access and connections to the transit system (General Plan Policy T-3.5, Implementing Action 3.5.c).

MEASURE RE 6.1: Bicycle Planning

Plug in Language

ACTIONS FOR MEASURE AR 6.1

- AR 6.1.1: Utilize the urban stream system in the planning and design of bikeways and trails (General Plan Policy T-3.2, Implementing Action 3.2.a).
- AR 6.1.1: Make use of creekside areas, utility line easements, abandoned railroad rights-of-way, and canal easements for bikeway purposes (General Plan Policy T-3.2, Implementing Action 3.2.b).

MEASURE RE 6.1: Bicycle Projects

Maintain and Expand the Community's Existing Bicycle Circulation System (General Plan Policy T-2.6).

- AR 6.1.1: Provide a link between the City and County bikeway systems by establishing a connector to the Lake Road Bikeway Corridor out to Lake Yosemite (General Plan Policy T-3.2, Implementing Action 3.2.d).
- AR 6.1.1: Develop an off-street bikeway and trail system in South Merced (General Plan Policy T-3.2, Implementing Action 3.2.e).

MEASURE RE 6.1: Pedestrian Planning

Improve Planning for Pedestrians (General Plan Policy T-2.8).

ACTIONS FOR MEASURE AR 6.1

- AR 6.1.1: Healthy Community Development Guidelines Partner with the local health department to examine methods to assure and enhance walkability in new developments and in existing areas that could benefit from pedestrian-related improvements.
- AR 6.1.1: Merced Safe Routes to School Program. In partnership with the local school districts and the local Building Healthy Communities organization, establish a Safe Routes to School Program to include the following elements:
 - Maps for safe routes for all schools in the City limits;
 - Host a walk to school day
 - Encourage regular walking to school through friendly competition
 - Produce and disseminate safe routes to school maps to parents;
 - Partner in teaching how to drive a walking school bust; and
 - Track walking and biking to school. ⁴⁵
- **AR 6.1.1:** Shared Streets. As part of a new pilot-program by the City to explore different ways to utilize right-of-way for multiple uses while saving money and creating livable communities, identify and construct a Shared Street.

MEASURE RE 6.1: Alternate Transportation Development Standards

Add language linking the following to development projects.

ACTIONS FOR MEASURE AR 6.1

AR 6.1.1: Apply the following Transit-Related standards to new development projects.

- Continue to review land use decisions in the vicinity of the entire length of "M" Street to avoid creating or increasing conflicts with the intent of a major transitway (General Plan Policy T-2.1, Implementing Action 2.1.a).
- Promote land development patterns and site design criteria that support and enhance the use of public transit (General Plan Policy T-2.2, Implementing Action 2.2.a).
- Whenever feasible, avoid residential subdivision designs that require pedestrians to duplicate walking distance (double-back) to reach public transit routes (General Plan Policy T-2.2, Implementing Action 2.2.b).
- Whenever feasible, avoid creating barriers that prevent convenient access to current or prospective public transit routes (General Plan Policy T-2.2, Implementing Action 2.2.c).
- 2.3.a Include public transportation access in the review process for major public and private development projects, as well as all significant land use design proposals considered by the City (General Plan Policy T-2.3, Implementing Action 2.2.A)..

 2.3.d Provide off-street passenger loading/unloading at major public transportation destinations (shopping centers, etc.) whenever possible(General Plan Policy T-2.3, Implementing Action 2.2.a).

AR 6.1.1: Apply the following Bicycle-Related standards to new development projects.

- Develop guidelines for public and private development relating to the design and location of bicycle parking facilities for both residential and non-residential uses and consider a bike parking ordinance (General Plan Policy T-2.5, Implementing Action 2.5.a).
- Provide links between parks, schools, and open space areas via the bikeway system (General Plan Policy T-3.2, Implementing Action 3.2.c).
- Expand the existing bikeway system to all new growth areas as development occurs (General Plan Policy T-3.2, Implementing Action 3.2.c).

AR 6.1.1: Apply the following Pedestrian-Related standards to new development projects.

- Retain parkstrip and street tree planting requirements (General Plan Policy T-2.7, Implementing Action 2.7.a).
- Continue to require sidewalks and pedestrianways for subdivisions and other development projects (General Plan Policy T-2.7, Implementing Action 2.7.e).
- Continue to encourage safe and convenient pedestrian environments in the Downtown and other areas that attract a great deal of pedestrian traffic (General Plan Policy T-2.7, Implementing Action 2.7.f).
- Encourage the planting of shade trees and, as a minimum, plan for the prospective establishment of rest areas with seating facilities along major pedestrianways (General Plan Policy T-2.7, Implementing Action 2.7.h).
- Continue to review and evaluate possible options for dealing with the issue of incomplete pedestrian access to development projects that will be major pedestrian destinations (General Plan Policy T-2.3, Implementing Action 2.2.a).
- Continue to review land use and project proposals with the intent to avoid pedestrian barriers that prevent or create unnecessarily circuitous access to community and commercial areas (General Plan Policy T-2.8, Implementing Action 2.8.c).

AR 6.1.1: Within a year of adoption of the Climate Action Plan, the City shall consider amendments to City policies and ordinances where appropriate to implement the following actions of the Climate Action Plan:

• provision of amenities such as transit shelters, secure bicycle parking and attractive pedestrian pathways.

Goal 2. Create Distinct Communities

MEASURE RE 6.1 DESIGN OF URBAN VILLAGES

Something about Creating Quality Designed "Village" Environments (General Plan Policy SD-1.5).

ACTIONS FOR MEASURE AR 6.1

AR 6.1.1: Promote and Facilitate Core Commercial Design Principles in Village Commercial (General Plan Policy UD-1.3), by:

- Each Village must have a mixed-use Core Commercial area containing ground floor retail and commercial space, including: Convenience Centers, Neighborhood Centers, and Community Centers (General Plan Policy UD-1.3, Implementing Action 1.3.a).
- Core Commercial areas must be developed at sufficient intensity (typically a F.A.R. of at least 0.25) to create a focus of activity at the center of Villages (General Plan Policy UD-1.3, Implementing Action 1.3.a).
- Office areas should be built at an intensity that concentrates activity near transit stops and Core Commercial areas (General Plan Policy UD-1.3, Implementing Action 1.3.a).

AR 6.1.1: Design and Develop Public and Quasi-Public Buildings and Uses Utilizing Transit- Ready Development or Urban Village Principles (General Plan Policy UD-1.5), by:

- Civic services should be placed in central locations in Villages (General Plan Policy UD-1.5, Implementing Action 1.5.a).
- School sites should be selected by their respective districts in a way that provides opportunities to use pedestrian trails and bicycle routes to and from school and minimizes the need for students to cross arterial streets (General Plan Policy UD-1.5, Implementing Action 1.5.b).
- Quasi-Public buildings such as religious buildings, fraternal halls, daycare facilities and private schools are encouraged to be situated and designed to face neighborhood parks or village greens (General Plan Policy UD-1.5, Implementing Action 1.5.c).
- Utility facilities such as wells, pump stations, and electrical substations should be located in sites poorly suited for other forms of development, such as small sites bounded by high voltage power lines and arterials (General Plan Policy UD-1.5, Implementing Action 1.5.d).
- Public parks and plazas should be designed for both active and passive uses. They should reflect and reinforce the character of the surrounding area (General Plan Policy UD-1.5, Implementing Action 1.5.e).
- Encourage subdivision designs that provide neighborhood parks in proximity to activity centers, such as schools, libraries, and community centers (General Plan Policy UD-1.5, Implementing Action 1.5.f).

AR 6.1.1: Use Urban Village Design Concepts in Neighborhood Revitalization Programs (General Plan Policy UD-2.1), by:

- Identify existing or potential neighborhood core areas that could serve as a Core Commercial area (General Plan Policy UD-2.1, Implementing Action 2.1.a).
- Evaluate public transit alternatives and service levels within existing neighborhoods (General Plan Policy UD-2.1, Implementing Action 2.1.b).
- Identify needed neighborhood level public and quasi-public service facilities within existing neighborhoods (General Plan Policy UD-2.1, Implementing Action 2.1.c).

MEASURE RE 6.1: COMMUNITY APPEARANCE

Maintain and Enhance the Unique Community Appearance of Merced (General Plan Policy UD-2.2).

ACTIONS FOR MEASURE AR 6.1

AR 6.1.1: Encourage joint City and County cooperation in establishing land use and development standards along all major gateways to the City (General Plan Policy UD-2.2, Implementing Action 2.2.a).

AR 6.1.1: Add language linking the following to development projects.

- Encourage the design of buildings that are in scale with adjacent development and harmonize with the character of the area or neighborhood (General Plan Policy UD-1.5, Implementing Action 1.5.b).
- Discourage the visual monotony along major streets created by designs which use uninterrupted walls or fences with little or no landscaping (General Plan Policy UD-1.5, Implementing Action 1.5.c).
- Encourage the development of methods to require acceptable levels of landscaping for new development and for effective maintenance in highly visible areas of the community (General Plan Policy UD-1.5, Implementing Action 1.5.d).
- Landscape designs should incorporate water conservation and low maintenance features (General Plan Policy UD-1.5, Implementing Action 1.5.d).
- **AR 6.1.1:** Expand the City's programs for undergrounding utility lines and require all new utility lines to be placed underground (General Plan Policy UD-2.2, Implementing Action 2.2.e).
- AR 6.1.1: Support merchant groups that initiate improvement programs that make commercial centers more attractive and more efficient (General Plan Policy UD-2.2, Implementing Action 2.2.h).
- AR 6.1.1: Continue to support the long-term beautification and preservation of downtown commercial areas (General Plan Policy UD-2.2, Implementing Action 2.2.i). Add language about Merced's Downtown Strategy.

Goal 4. Local Food Production

MEASURE: Farmers Markets and Community Gardens

Encourage healthy food choices through the encouragement of farmers markets and community garden. (General Plan Policy SD-4.2, Implementing Action 4.2.b).

RE 4.1.1:	Implement a Green Gardener Certification Program
RE 4.1.1:	Designate locations throughout the City for community gardens and encourage edible landscapes
RE 4.1.1:	Create at least 6 new community gardens by 2012
RE 4.1.1:	Encourage participation in local farmers markets
RE 4.1.1:	Encourage additional locations for farmers markets throughout the City

Quality Natural Resources

Air - Land - Water

Goals

- Water Conservation
- Protect Air Resources
- Waste Reduction
- Open Space

Goal 5. Water Conservation

MEASURE RE 6.1: Water Conservation

Promote Water Conservation Throughout the Planning Area (General Plan Policy OS-5.1).

- AR 6.1.1: Continue implementation and enforcement of the City's Water Shortage Regulations (General Plan Policy OS-5.1, Implementing Action 5.1.a).
- AR 6.1.1: Continue implementation of the Water Efficient Landscaping and Irrigation Ordinance and subsequent updates (General Plan Policy OS-5.1, Implementing Action 5.1.b).
- AR 6.1.1: Provide leadership in conserving urban water resources (General Plan Policy OS-5.1, Implementing Action 5.1.c).
- **RE 4.1.1:** Implement a voluntary *Residential Water Audit Program* to all customers within the City of Merced.
- **RE 4.1.1:** Enhance the existing *Residential Plumbing Retrofit Program* through increased retrofits and rebate efforts to all customers within the City of Merced.

RE 4.1.1:	Implement a voluntary <i>High Efficiency Washing Machine Rebate Program</i> to all customers within the City of Merced.
RE 4.1.1:	Implement a voluntary <i>Conservation Program for Commercial, Institutional and Industrial (CII) Accounts</i> to all customers within the City of Merced.
RE 4.1.1:	Implement a tiered water rate structure within the City of Merced.
RE 4.1.1:	Implement a voluntary <i>Residential Ultra-Low-Flush Toilet Replacement Program</i> to all customers within the City of Merced.
RE 4.1.1:	Implement the Large Landscape Conservation Program for city-owned properties.
RE 4.1.1:	Enhance the existing <i>Water Metering Program</i> through incentives and/or ordinance for all City of Merced customers who are not currently connected to a water meter.
Other:	
RE 4.1.1:	Maintain and repair existing plumbing fixtures, pipes and irrigation systems in all Town buildings and facilities to minimize water use, including landscaping.
RE 4.1.1:	Water Conserving Fixtures – Continue to offer rebates that encourage the use of waterless urinals, high efficiency toilets, and other water conserving fixtures to decrease the volume of wastewater for treatment.

MEASURE RE 6.1: Reduce Groundwater Pumping

Identify and implement new approaches to supply water from non-groundwater sources to reduce the need for groundwater pumping.

ACTIONS FOR MEASURE AR 6.1

RE 4.1.1:

- AR 6.1.1: Pursue innovative programs to reduce the demand for potable ("drinkable") water (General Plan Policy P-3.1, Implementing Action 3.1.a).
- **RE 4.1.1:** Perform a *System Water Audit* when all customers are connected to meters.

Provide Incentives for residential plumbing fixture upgrades

RE 4.1.1: Reach a long-term transfer agreement with the Merced Irrigation District for the exchange of tertiary treated wastewater effluent for canal surface water.

- **RE 4.1.1:** Work cooperatively with MID to preserve and enhance its surface water delivery system (General Plan Policy P-3.2, Implementing Action 3.2.b).
- **RE 4.1.1:** Explore the use of MID water resources for applications that do not require treated water to reduce demand on the regional groundwater supplies and reduce costs of water treatment (General Plan Policy P-3.2, Implementing Action 3.1.c).
- **RE 4.1.1:** Consider the Use of Reclaimed Water to Reduce Non-Potable Water Demands Whenever Practical (General Plan Policy P-4.2).
 - Consider conducting a reclaimed water market study to identify potential users (General Plan Policy P-4.2, Implementing Action 4.2.b).
 - Consider preparing a plan for the use of reclaimed water which evaluates the facilities and costs required to serve potential users, determines required capacities of facilities, and presents an implementation plan (General Plan Policy P-4.2, Implementing Action 4.2.c)

Other:

- **RE 4.1.1:** Increase water storage capacity to allow for off-peak pumping of water.
- **RE 4.1.1:** Improve water pumping energy efficiency

MEASURE RE 6.1: Water Efficient Landscapes

Add Measure Language.

- **AR 6.1.1:** Conduct cost-effectiveness analysis of landscape audits for large commercial customers.
- AR 6.1.1: Landscape Water Meter Require customer installation of dedicated water meters for landscape irrigation on properties with more than 20,000 square feet of irrigated area.
- **AR 6.1.1:** Plant materials native to Merced, and encourage the use of drought-tolerant plant material.
- **AR 6.1.1:** Minimize turf areas and avoid narrow turf areas, such as in parking strips.
- AR 6.1.1: Use reclaimed water for landscape irrigation in new developments and on public property.

 Install the infrastructure to deliver and use reclaimed water.
- **AR 6.1.1:** Implement a residential rainwater collection program.

AR 6.1.1: Further reduce demand for potable water by converting industrial and irrigation demands to recycled water wherever practical and cost-effective

MEASURE RE 6.1: Water Conservation Development Standards

Add language linking the following to development projects.

ACTIONS FOR MEASURE AR 6.1

- AR 6.1.1: Within a year of adoption of the Climate Action Plan, the City shall consider amendments to City policies and ordinances where appropriate to implement the following actions of the Climate Action Plan:
 - Use of both potable and non-potable water to the maximum extent practicable; low flow appliances (i.e., toilets, dishwashers, shower heads, washing machines, etc.); automatic shut off valves for sinks in restrooms; drought resistant landscaping; "Save Water" signs near water faucets;
 - Create water efficient landscapes;
 - Use gray water. (Gray water is untreated household waste water from bathtubs, showers, bathroom wash facilities, and water from washing machines); and,
 - Provide education about water conservation and available programs and incentives.
- AR 6.1.1: Strengthen land use and development guidelines for new buildings and retrofits. The permitting process for developers and contractors can include clear parameters for integrating water conservation infrastructure and technologies, including low-flush toilets and low-flow showerheads
- AR 6.1.1: Adopt a Water Efficient Landscape Ordinance as required by AB 1881 and consider inclusion of more stringent water conservation requirements than state's model ordinance.
- AR 6.1.1: Encourage the use of development techniques to direct rooftop runoff to pervious areas such as yards, garden beds, vegetated/soft bottom open channels, or on-site structural BMPs for capture, treatment, and reuse.
- AR 6.1.1: Require high-efficiency irrigation systems (low-flow drip, bubblers or low-flow sprinklers) in landscape plans. Ensure that the irrigation system is properly designed for the site.

Goal 6. Protect Air Resources

MEASURE RE 6.1: Vehicle Trips

Deploy a Comprehensive Program to Reduce Vehicle Trips

ACTIONS FOR MEASURE AR 6.1

- AR 6.1.1: Continue to support, encourage, and implement to the extent feasible, innovative employer-based trip reduction programs for their employees (General Plan Policy SD-1.5, Implementing Action 1.5.a), for example, the City's participation in "eTRIP" (Employer Trip Reduction Implementation Plan). Such programs include, but are not limited to:
 - Support the use of teleconferencing and internet-based training opportunities in lieu of employee travel to conferences and meetings when feasible (General Plan Policy SD-1.5, Implementing Action 1.5.c).).
 - Make use of telecommuting programs as part of their trip reduction strategies (General Plan Policy SD-1.5, Implementing Action 1.5.d).
- AR 6.1.1: Encourage the development of state of the art communication infrastructure linked to the rest of the world (General Plan Policy SD-1.5, Implementing Action 1.5.e), for example, the Development Services Department's "Electronic Plan Check Project."
- AR 6.1.1: Reduce Vehicle Miles Traveled by Implementing "Complete Streets" policies to ensure the Needs of Bicyclists, Pedestrians and the Disabled are considered in the transportation element of any new capital improvement or development project.
- **AR 6.1.1:** Reduce Vehicle Miles Traveled by coordinating the different modes of travel to enable users to transfer easily from one mode to another.
- AR 6.1.1: Reduce Vehicle Miles Traveled by increasing the Use of Ridesharing as an Alternative to Single Occupancy Driving

MEASURE RE 6.1: Air Resource Development Standards

Accurately Determine and Fairly Mitigate the Local and Regional Air Quality Impacts of Projects Proposed in the City of Merced (General Plan Policy SD-1.1).

- AR 6.1.1: Include the evaluation of Greenhouse Gas Emissions and Climate Change in environmental review documents prepared by the City (General Plan Policy SD-1.1, Implementing Action 1.1.g).
- AR 6.1.2: Ensure that significant air quality impacts identified during CEQA review are consistently and fairly mitigated (General Plan Policy SD-1.1, Implementing Action 1.1.b).
- AR 6.1.2: Work with employers and developers to provide employees and residents with attractive, affordable transportation alternatives. Encourage new development to provide on-site facilities that encourage employees to use alternative transportation modes as air quality and transportation mitigation measures (General Plan Policy T-2.9, Implementing Action 2.9.b). Examples are listed below.

- AR 6.1.1: Within a year of adoption of the Climate Action Plan, the City shall consider amendments to City policies and ordinances where appropriate to implement the following actions of the Climate Action Plan:
 - Use low or zero-emission vehicles, including construction vehicles;
 - Create car sharing programs;
 - Create local "light vehicle" networks, such as neighborhood electric vehicle (NEV) systems;
 - Provide shuttle service to public transit;
 - During construction, post signs that restrict truck idling;
 - Set specific limits on idling time for commercial vehicles, including delivery and construction vehicles:
 - Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where signals are installed, require the use of Light Emitting Diode (LED) traffic lights; and,
 - Assess transportation impact fees on new development in order to facilitate and increase public transit service.
- AR 6.1.1: On an ongoing basis, as information becomes available and regulations are adopted by the City and by state and regional agencies, the City shall partner with air pollution control agencies to advise project applicants of greenhouse gas and air pollutant emission significance thresholds, mitigation requirements, and control regulations promulgated by federal, state, regional, and local agencies.
- AR 6.1.1: On an ongoing basis the City shall utilize its code enforcement police power to ensure ongoing compliance with requirements for air quality and sustainability measures incorporated into projects design, conditions of approval, and mitigation measures.
- AR 6.1.1: The City shall utilize guidance from the Institute for Local Government, California Attorney General's Office, California Air Pollution Control Officers Association, and other sources of technical guidance in determining appropriate and feasible mitigation measures which may be incorporated into land use plans, development projects and City operations to achieve GHG emission reductions.
- As information becomes available and regulations and policies are adopted by the City and by state and regional agencies, the City shall provide residents and project applicants with a "toolkit" of understandable feasible measures that can be used to reduce greenhouse gases and criteria pollutants, including educational materials on energy-efficient and "climate-friendly" products.
- AR 6.1.1: On an ongoing basis, the City shall continue to evaluate its facility maintenance practices for opportunities to reduce GHGs, looking at facility cleaning and painting, parks maintenance, road maintenance, and utility system maintenance.
- As additional technical information becomes available, the City shall consider strengthening its standards for purchasing low polluting and climate friendly goods and services, requiring that emission reductions be achieved by vendors and contractors through City contracts and/or

giving preference to those who demonstrate implementation of GHG and criteria air pollution emission reductions in their facilities and operations.

MEASURE RE 6.1: Expand Capacity – Not Pavement

State measure here

ACTIONS FOR MEASURE AR 6.1

- AR 6.1.1: Consider measures to increase the capacity of the existing road network prior to constructing more capacity (additional lanes, new roadways, etc.) (General Plan Policy T-2.9, Implementing Action 2.9.a).
- **AR 6.1.1:** Expand programs to reduce vehicle miles traveled, stop and go traffic, and traffic congestion in order to improve traffic flow (General Plan Policy T-2.9, Implementing Action 2.9.c).
- AR 6.1.1: Complete the City's network of bicycle and pedestrian transportation routes and allow for new forms of non-motorized transportation (General Plan Policy T-2.9, Implementing Action 2.9.d).
- AR 6.1.1: Include measures in local and regional transportation plans and capital improvement plans that may increase the capacity and reduce congestion on existing roads without adding new lanes include the following:
 - Establish an integrated and synchronized traffic signal network for major thoroughfares to assure smooth-flowing traffic through intersections and to minimize congestion through maintenance of stable traffic flow at intersections.
 - Convert congested streets to one-way couplets where it would improve traffic flow and congestion.
 - Modify intersections using turn restrictions, channelization, etc. where necessary and feasible.

MEASURE RE 6.1: Reduce Non-Vehicular Emissions

ACTIONS FOR MEASURE AR 6.1

AR 6.1.1: Promote and participate in the Clean Green Yard Machine (CGYM) Program

The CGYM Program is a San Joaquin Valley Air Pollution Control District incentive program for San Joaquin Valley residents to trade in their existing, functional gasoline-powered lawnmower for a new cordless, electric lawnmower. In Fall 2010, the District distributed discount vouchers to residents in every Valley county to replace over 2,100 gas-powered mowers with new cordless electric models at substantially reduced prices. In Spring 2011, the Board accepted \$183,661 from the California Air Resources Board for the District's Clean Green Yard Machine program, bringing the total for the next phase of this successful lawnmower replacement program to \$783,661 to provide more vouchers.

Goal 7. Waste Reduction

MEASURE RE 6.1: Reduce, Reuse and Recycle

Continue to implement source reduction and recycling programs to minimize waste at the point of manufacture or use (General Plan Policy P-6.1, Implementing Action 6.1.a).

- AR 6.1.1: Continuing citywide recycling efforts for homes and businesses (General Plan Policy P-6.1, Implementing Action 6.1.a).
- AR 6.1.1: Supporting public and private recycling efforts to divert wood, leaves and yard waste from being deposited in the landfill site (General Plan Policy P-6.1, Implementing Action 6.1.a).
- AR 6.1.1: Assisting the private sector wherever possible in developing methods for the reuse of inert materials (concrete, asphalt and other building materials waste) which currently use valuable landfill space and increasing resource and material recovery from solid wastes (General Plan Policy P-6.1, Implementing Action 6.1.a).
- AR 6.1.1: Find a location for a local recycling drop-off center and household hazardous waste facility. Support community drop-off, buy-back, and collection
- AR 6.1.1: Develop a volunteer "Master Recycler" program open to the public, with field work, field trips, projects and speaker series. Volunteers would promote conservation and recycling throughout the community by example and through outreach projects.
- AR 6.1.1: Enforce residential recycling and fine residents and landlords for not recycling or recycling correctly, including composting garden waste.
- AR 6.1.1: Conduct a reuse campaign for both businesses and residents establishing partnerships with and promoting thrift shops and reuse stores. Establish and/or promote materials exchange programs and include a program to divert bulky items from landfills.
- **AR 6.1.1:** Explore options to develop a restaurant and residential food waste collection program.
- AR 6.1.1: Consistent with new commercial recycling requirements of the Scoping Plan of AB 32, create and implement a plan to increase recycling at City-serviced commercial accounts.
- AR 6.1.1: Implement the Green Code Construction and Demolition require to recycle construction materials. Support efforts to increase recycling rates as markets for these goods improve. Assist contractors and builders in locating C&D materials recovery facilities (MRFs), materials exchange opportunities and other reuse and recycling sources.
- AR 6.1.1: Develop a recycling program to provide recycling opportunities at special events; the City should implement such program at City sponsored or hosted events.

- AR 6.1.1: Adopt a partnership with local schools and business for waste reduction, recycling, composting and food garden programs
- **AR 6.1.1:** Develop and implement a waste audit program
- AR 6.1.1: Within a year of adoption of the Climate Action Plan, the City shall consider amendments to City policies and ordinances where appropriate to implement the following actions of the Climate Action Plan:
 - Design locations for separate waste and recycling receptacles;
 - Reuse and recycle construction and demolition waste;
 - Recover by-product methane to generate electricity; and,
 - Provide education and publicity about reducing waste and available recycling services.
- AR 6.1.1: The City shall continue to require provisions for recyclable material collection and storage areas to be incorporated into all residential development designs, and within one year from adoption of General Plan consider expanding this requirement to all industrial facilities, sizing the recycling area for industrial development according to the anticipated types and amounts of recyclable material generated.
- **AR 6.1.1:** Within a reasonable period of time from adoption of General Plan, the City shall consider establishing incentives and a utility rate structure, as consistent with state law, to foster increased participation in residential recycling and green waste diversion.
- **AR 6.1.1:** Within a reasonable period of time from adoption of General Plan, the City shall consider instituting a program to evaluate major waste generators and to recommend recycling opportunities for their facilities and operations.
- **AR 6.1.1:** The City shall continue to partner with the California Integrated Waste Management Board to participate in waste diversion and recycling programs such as the tire collection and recycling program, and community recycling education.
- **AR 6.1.1:** Within a reasonable period of time from adoption of General Plan, the City shall consider instituting a restaurant and institutional food waste segregation and recycling program, to reduce the amount of organic material sent to landfills.

Goal 8. Open Space

MEASURE RE 6.1: Open Space Storm Drainage

Integrate Drainage Facilities With Bike Paths, Sidewalks, Recreation Facilities, Agricultural Activities, Groundwater Recharge, and Landscaping (General Plan Policy P-5.2).

ACTIONS FOR MEASURE AR 6.1

- AR 6.1.1: Provide drainage channels in transportation or canal easement areas to the extent feasible. Reflect the planned regional streets and open-space network to the degree possible when locating new future drainage facilities (General Plan Policy P-5.2, Implementing Action 5.2.a).
- AR 6.1.1: Following the success of other communities, develop and implement a pilot program to create green streets.

MEASURE RE 8.1: Urban Forestry / Heat Island Effect

Improve and Expand the City's Urban Forest (General Plan Policy OS-1.4).

- **RE 8.1.1:** Continue to require new development to plant street trees approximately 40 feet apart, at a maximum, along City streets (General Plan Policy OS-1.4, Implementing Action 1.4.b).
- **RE 8.1.1:** Work with local non-profit agencies, service clubs, and other voluntary organizations to plant trees and shrubs in appropriate areas throughout the City (General Plan Policy OS-1.4, Implementing Action 1.4.c).
- **RE 8.1.1:** Develop and Implement a Tree Planting Initiative for Merced.
- AR 6.1.1: Within a year of adoption of the Climate Action Plan, the City shall consider amendments to City policies and ordinances where appropriate to implement the following actions of the Climate Action Plan:
 - Large canopy trees should be carefully selected and located to protect the building(s) from energy consuming environmental conditions, and to shade 50% of paved areas within 15 years. Trees near structures act as insulators from weather thereby decreasing energy requirements. Trees also store carbon.
 - Impose measures to address the "urban heat island" effect by, e.g. requiring light-colored and reflective roofing materials and paint; light-colored roads and parking lots; shade trees in parking lots' and shade trees on the south and west sides of new or renovated buildings.

- AR 6.1.1: Develop and implement a community-wide tree planting program for streets and parks to significantly increase the carbon storage potential of trees and other vegetation in the community.
- AR 6.1.1: Support the preservation and creation of conservation areas that provide carbon sequestration benefits, such as those with tree cover.
- AR 6.1.1: Plant at least 10,000 trees in Merced by 2020
- AR 6.1.1: Continue to require the planting of street trees along streets and inclusion of trees and landscaping for all development projects to help improve air-shed and minimize urban heat island effects.
- AR 6.1.1: Continue to enforce policies and programs that regulate the removal and replacement of significant trees.

Energy Resources

Goals:

- Increase the use of Renewable Energy Sources to Power Buildings
- Building Energy Conservation

Goal 10. Increase the use of Renewable Energy Sources to Power Buildings

MEASURE RE 8.1: Solar Power

Encourage the use of solar energy in design and management of all new construction in the City (General Plan Policy SD-3.1, Implementing Action 3.1.a).

ACTIONS FOR MEASURE RE 10.1

RE 10.1.1: As opportunities arise, the City should provide funds to encourage community energy investment.

For example, the City's Redevelopment Office, though use of EECBG grant funds is providing a long term low interest loan to finance the purchase and installation of a Photo Voltaic (Solar) System for a new multifamily affordable housing construction project.

- **RE108.1.2:** Require all new subdivisions to maximize, to the extent feasible, proper orientation of lots with regard to solar utilization (General Plan Policy SD-3.1, Implementing Action 3.1.b).
- RE 10.1.3: Encourage developers and builders to properly design all structures on each building lot in the City to take fullest advantage of solar use in heating and cooling. (General Plan Policy SD-3.1, Implementing Action 3.1.c).
- **RE 10.1.4:** Encourage developers and builders to maximize "passive" solar design, such as large south-facing windows for winter heat gains and overhangs and shading for summer heat protection(General Plan Policy SD-3.1, Implementing Action 3.1.d).

- **RE 10.1.5:** Pursue further investigation of potential benefits utilizing building code revision, narrower streets, solar access rights, and other energy-saving techniques. (General Plan Policy SD-3.1, Implementing Action 3.1.e).
- **RE 10.1.5:** Adopt policies and incentives to encourage residents and businesses to install solar and renewable energy systems, including solar panels to generate electricity and solar water heating systems, and to construct solar ready buildings.
- **RE 10.1.5:** Research and consider a Solar and Energy Efficiency Financing Program for residents and small businesses.
- Require new commercial and industrial land uses greater than a certain size to utilize on-site renewable energy systems to offset a minimum percentage (%) of the projected building energy use or to pay an in-lieu fee or similar offset fund to be established by the City.

 Renewable energy systems may include energy generated by solar, wind, geothermal, water, or bio-based energy capture systems.
- **RE 10.1.5:** Further streamline the permit process and provide a renewable incentive program.
- **RE 10.1.5:** Develop and implement solar hot water and space heating incentive program, consistent with recently-enacted assembly bill AB1470 and the California Solar Initiative solar water heating pilot program. Target 500 residential systems equivalent, with estimated savings of 500 metric tons per year.
- **RE 10.1.5:** Require solar hot water systems for new pool installations or renovations.

MEASURE RE 8.1: Clean Vehicles - Alternative Fuels

State measure here

ACTIONS FOR MEASURE RE 10.1

AR 6.1.1: Fleet vehicle operators should evaluate alternatives which include replacing or converting conventional fuel vehicles with clean fuel vehicles as rapidly as feasible within the financial constraints of the City (General Plan Policy SD-1.5, Implementing Action 1.5.b), for example, the Public Work's Department "Build a Green Fleet Program."

Goal 11. Building Energy Conservation

MEASURE RE 8.1: NEW AND RETROFITTED CITY FACILITIES

Design new City buildings and facilities to exceed California Energy Code requirements by 15%, and retrofit existing facilities with improved energy-efficiency technologies.

ACTIONS FOR MEASURE RE 10.1

BEC 11.1.2: Complete Phase I of the Energy Retrofit of City Facilities and Assets (Siemens Project)

The City as an organization is one of Merced's largest employers and provides a full array of community services. The City maintains a large inventory of assets, including buildings, parks, airport, water wells, wastewater treatment plant and various pump systems. The City will contract with a performance-based contractor to audit energy consumption and retrofit City facilities, including building, water and sewer systems, and other assets.

The scope of the Green Facilities project is very broad, and is expected to result in construction/retrofit measures well over \$5 million. Using the performance-based contracting model, the project will be largely self-funding, with energy savings financing the construction and retrofit. The Project will result in energy efficiencies and reduction of greenhouse gas emissions through the following upgrades:

- 1. Interior and Exterior Lighting Retrofits
- 2. Retrofit Approximately 5,644 Street Lighting with Induction Lamps
- 3. Software Controls Upgrades
- 4. Retrofit Heating, Ventilation, and Air Conditioning Mechanical Units
- Retrofit Water Fixtures
- 6. Install Civic Center Window Film
- 7. Install Vending Misers
- 8. Retrofit Airfield Lighting Fixtures
- 9. Upgrade to Weather-Based Irrigation Controllers

MEASURE RE 8.1: ENERGY EFFICIENCY IN NEW DEVELOPMENT

Encourage new residential, commercial, and industrial development to reduce air quality impacts from area sources and from energy consumption (General Plan Policy SD-3.2, Implementing Action 3.2.c).

ACTIONS FOR MEASURE RE 10.1

RE 10.1.1: Encourage builders to develop "green" and/or LEED-Certified buildings (General Plan Policy SD-3.2, Implementing Action 3.2.d). Implement CALGreen.

RE 10.1.1: Compliance with RULE _____ regarding design or payment.

- AR 6.1.1: Within a year of adoption of the Climate Action Plan, the City shall consider amendments to City policies and ordinances where appropriate to implement the following actions of the Climate Action Plan:
 - Automated control system for heating/air conditioning and energy efficient appliances;
 - Utilize lighting controls and energy efficient lighting in buildings;
 - Use light colored roof materials to reflect heat;
 - Take advantage of shade (save healthy existing trees when feasible), prevailing winds, landscaping and sun screens to reduce energy use;
 - Install solar panels on carports and over parking areas;
 - Increase building energy efficiency percent beyond Title 24 requirements. In addition implement other green building design ((i.e., natural daylighting and on-site renewable, electricity generation); and
 - Require that projects use efficient lighting.
- AR 6.1.1: Increase energy efficiency in new commercial and residential development and require new residential and commercial development to achieve enhanced energy efficiency and exceed California Energy Code requirements by 15%.

MEASURE RE 8.1: RESIDENTIAL ENERGY EFFICIENCY

State measure here

- **RE 10.1.1:** Energy Independence Program Consider creation of an assessment district bond financing program to fund installation of renewable energy system and other efficiency upgrades.
- RE 10.1.1: Provide Public Information on Preventative Maintenance and Energy Conservation (General Plan Policy H-2.1, Implementing Action 2.1.d).
- **RE 10.1.1:** Energy Conservation The City shall assist low-income homeowners and renters in securing energy audits through local utility companies (General Plan Policy H-2.1, Implementing Action 2.1.f)..
- RE 10.1.1: Energy Conservation and Weatherization Through funding obtained from the Federal Stimulus Program or other funding sources, the City will initiate a program for low/moderate income families to provide weatherization materials such as weather stripping, outlet covers, and water heater insulating blankets. (General Plan Policy H-2.1, Implementing Action 2.1.g).
- **RE 10.1.1:** Establish point-of-sale residential energy efficiency audit and retrofit requirements for all homes purchased or transferred through a Residential Energy Conservation Ordinance (RECO).

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RE 10.1.1: Require energy efficiency audits for residences during major remodeling.

MEASURE RE 8.1: COMMERCIAL AND INDUSTRIAL ENERGY PERFORMANCE

State measure here

ACTIONS FOR MEASURE RE 10.1

RE 10.1.1: Free Resource and Energy Business Evaluation - The City

RE 10.1.1: Require energy efficiency audits for businesses during major remodeling.

RE 10.1.1: Require all non-residential buildings to complete annual energy performance reports as a condition of approval for business licenses, phased in for mandatory participation by 2018.

MEASURE RE 8.1: VOLUNTARY COMMERCIAL AND INDUSTRIAL ENERGY EFFICIENCY RETROFITS

State measure here

ACTIONS FOR MEASURE RE 10.1

RE 10.1.1:

Cross-Cutting Goals

Goals

- Public Education and Outreach
- Sustainable Community Design

Goal 12. Public Education and Outreach

Goal 15. Sustainable Community Design

MEASURE RE 8.1: COMPACT URBAN FORM / INFILL

State measure here

ACTIONS FOR MEASURE RE 10.1

RE 10.1.1:	Increase Residential Density	
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RE 10.1.1: Institute growth boundaries, ordinances, or programs to limit suburban sprawl

RE 10.1.1: Orient new development in downtown to capitalize on existing infrastructure, access to public transportation and local services and shopping, including new high-speed rail facilities.

RE 10.1.1: Development of underutilized and vacant infill sites

RE 10.1.1: Develop "brownfields" and other unused or defunct properties near existing public

transportation and jobs.

MEASURE RE 8.1: MIXED-USE / TRANSIT ORIENTED DEVELOPMENT

State measure here

ACTIONS FOR MEASURE RE 10.1

RE 10.1.1:	Encourage development that is mixed use, infill, and higher density.

- **RE 10.1.1:** Continue to encourage mixed-use and live-work developments within current single-use zones.
- **RE 10.1.1:** Utilize mixed-use development to create unique and varied housing.
- **RE 10.1.1:** Encourage an efficient transit connection between UCM and downtown.
- **RE 10.1.1:** Encourage a diverse mix of commercial and service businesses that support the residents, and support the economic need of the community.
- **RE 10.1.1:** Provide for a mixture of complementary retail uses to be located together to create activity nodes and serve adjacent neighborhoods and to draw visitors from other neighborhoods and from outside the area (e.g. sports facilities).
- **RE 10.1.1:** Encourage a "balanced" community, where residents do not have to travel long distances for service needs.
- **RE 10.1.1:** Expand and diversify the employment base to provide quality jobs for Merced residents
- **RE 10.1.1:** Industrial development workforce housing nexus study
- **RE 10.1.1:** Create a work/live ordinance to provide great opportunities for reduced work-related commutes

MEASURE RE 8.1: GROWTH MANAGEMENT

State measure here

ACTIONS FOR MEASURE RE 10.1

RE 10.1.1: