Sustainability Task Force Agenda

A Committee of the Chico City Council
Mayor Ann Schwab, Chair

Meeting of September 13, 2010 – 3:00 p.m. to 5:00 p.m.
Council Chamber Building, 421 Main Street, Conference Room No. 1

1. INTRODUCTION OF NEW TASK FORCE MEMBERS

Chair Schwab will introduce new Task Force members Dwight Aitkens and Cliff Friedman. Dwight is Councilmember Holcombe's appointee, and Cliff is the student representative on the Task Force.

2. UPDATE ON THE CITY COUNCIL CONSIDERATION OF THE CLIMATE ACTION PLAN.

At its 9/7/10 meeting, the City Council considered the Task Force's recommendations regarding the phased approach to implementing the Climate Action Plan and proposed Phase 1 action measures. A copy of the 9/7/10 Council staff report and Powerpoint presentation are attached to this agenda. Staff will provide a report on the City Council's direction.

3. REPORTS AND COMMUNICATIONS.

a. REPORT FROM THE PG&E PILOT INNOVATORS GRANT AD-HOC COMMITTEE.

The Task Force's PG&E Pilot Innovators Grant Ad-Hoc Committee, which will provide energy audits and weatherization measures to 100 single-family and 100 multifamily residential units, met on 8/2/10 to discuss implementation of the program. The Committee will provide a report to the Task Force on the status of this project.

b. REPORT ON DEVELOPMENT OF A DIVERSITY ACTION PLAN

Chair Schwab will provide a report on the City Council's direction on 6/1/10 to form an Ad-Hoc Committee to prepare a Diversity Action Plan for the City of Chico.

c. UPDATE ON THE RESIDENTIAL ENERGY CONSERVATION ORDINANCE (RECO)

Staff will update the Task Force on the City Attorney's progress on developing an ordinance to amend the Chico Municipal Code to revise the energy and water conservation measures required to be installed upon the sale of homes built prior to 1991.

4. BUSINESS FROM THE FLOOR

Members of the public may address the Committee at this time on any matter not already listed on the agenda, with comments being limited to three minutes. The Committee cannot take any action at this meeting on requests made under this section of the agenda.

5. ADJOURNMENT – The meeting will adjourn no later than 5:00 p.m. to a meeting scheduled for 3:00 p.m. on Monday, October 4, 2010.

ATTACHMENTS: 9/7/10 Council Staff Report and Presentation

Distribution available in the office of the City Clerk*:*

Prepared:	*9/9/10*	*Chico City Clerk's Office*
Posted :	*9/9/10*	*411 Main Street, Chico, CA 95928*
Prior to:	*3:00 p.m.*	*(530) 896-7250*

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Members:

Dwight Aitkens	BT Chapman	Tom DiGiovanni	Tim Dobbs	Trudy Duisenberg	
Cliff Friedman	Chris Giampaoli	Ken Grossman	Jon Luvaas	Scott McNall	
Jim Pushnik	Ann Schwab, Chair	Jon Stallman	Jim Stevens	Scott Wolf	Julian Zener

City Council Agenda Report **Meeting Date: 9/7/10**

TO: City Council

FROM: Sustainability Task Force

RE: **CONSIDERATION OF AN UPDATE ON THE DEVELOPMENT OF A CLIMATE ACTION PLAN TO REDUCE GREENHOUSE GAS (GHG) EMISSIONS.**

REPORT IN BRIEF:

On 9/2/08, the City Council approved the Sustainability Task Force's recommendations to 1) accept the community and citywide greenhouse gas (GHG) emissions inventory, 2) approve a GHG emissions reduction target of 25% below 2005 emission levels by 2020, and to 3) pursue the development of a Climate Action Plan (CAP) outlining potential actions needed to achieve this goal. The Task Force has been working on the CAP and will provide a status report on the development progress for Council consideration.

Recommendation: The Sustainability Task Force recommends that the City Council:

1. Conceptually approve the proposed Phase 1 Climate Action Plan (CAP) measures; and

2. Direct the Task Force to proceed with the development of a draft CAP for Council consideration at a future meeting.

FISCAL IMPACT:

The Institute of Sustainable Development (ISD) at CSU, Chico received a $5,000 grant from Waste Management to retain an intern to assist the City in the development of the CAP. The City also received another $5,000 from Keep America Beautiful to continue the City's CAP development efforts and these funds have been used to complete the work conducted to date. Staff also submitted an application to use a portion of its Energy Conservation and Efficiency Block Grant funds to complete an Energy Conservation Strategy and the CAP. If directed by Council, approximately $30,000 of these funds may be used to complete preparation of the CAP, and for the public vetting process.

SUSTAINABILITY TASK FORCE RECOMMENDATION:

The Task Force reviewed and considered over several meetings the outline of the CAP components and staff's recommendations on the proposed Phase 1 action measures. At its 6/7/10 meeting, the Task Force recommended (9-1-4) to forward the proposed CAP contents and Phase 1 action measures to the City Council for conceptual approval before completing the first draft of the plan.

BACKGROUND:

In October 2006, the City Council signed the U.S. Conference of Mayor's Climate Protection Agreement confirming the City's commitment to reduce greenhouse gas emissions. By signing the Agreement, the City agreed to strive to meet or beat the Kyoto Protocol GHG emission reduction target of 7% below 1990 levels by 2012. In addition, Governor Schwarzenegger's Executive Order S-3-05 and the Global Warming Solutions Act of 2006 (AB 32) establish a statewide goal of reducing GHG emissions reductions to 1990 levels (or by approximately 25%) by 2020, and a GHG emission reduction of 80% by 2050. To assist the City in implementing the U.S. Mayor's Agreement, the Council formed the Sustainability Task Force in December 2006. The Task Force consists of sixteen members representing the University, business community, environmental groups, and members at large. Mayor Ann Schwab is currently the Chair of the Task Force.

In developing its annual 2009-2010 Work Plan, the Task Force identified conducting a community wide greenhouse gas emissions inventory, establishing a GHG emissions target to meet the intent of the Mayor's Climate Agreement as well as AB 32, and to develop a Climate Action Plan. As stated above, the Council previously accepted the inventory, established a GHG reduction target of 25% below 2005 levels, and directed the Task Force to prepare the CAP.

DISCUSSION:

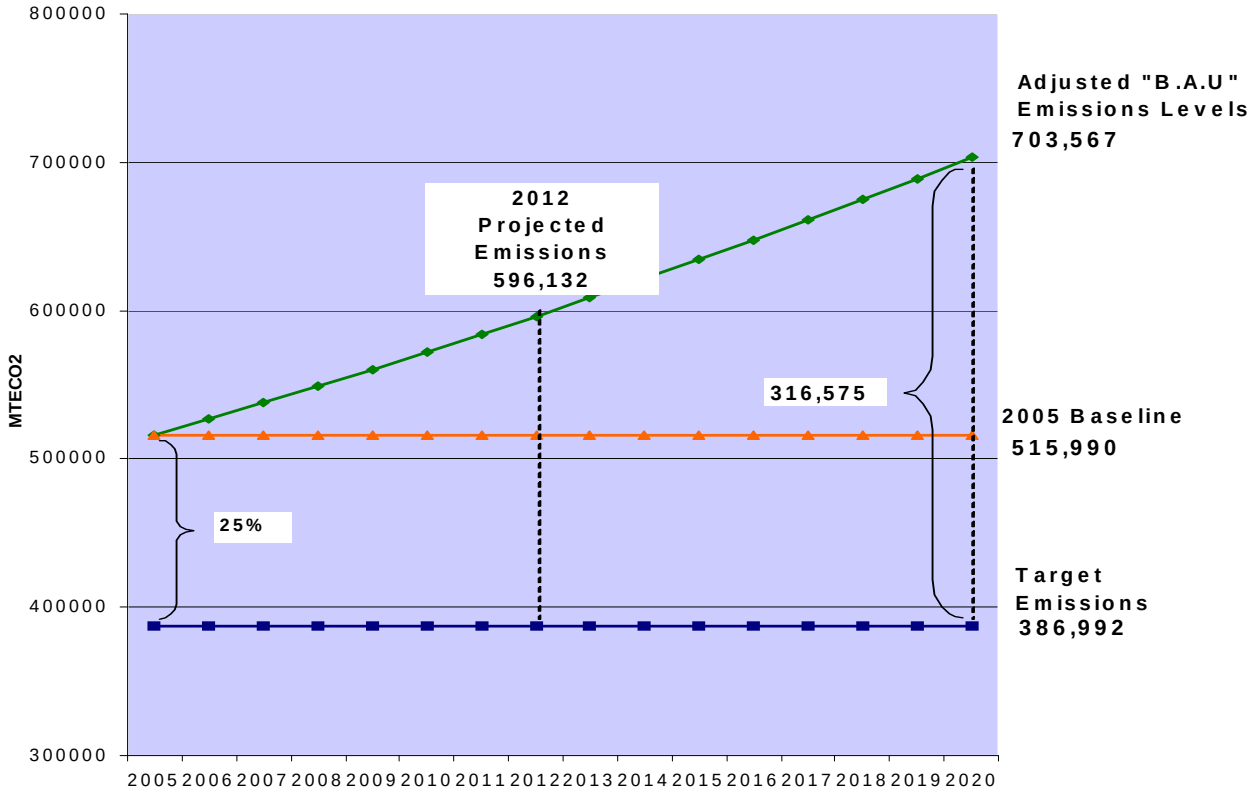
Community-wide Greenhouse Gas Inventory and Base Year:

Because it was difficult to obtain GHG emission information dating back to 1990, it was determined that the year 2005 would be a more useful baseline inventory year. Many other communities have chosen 2005 as their base year for the same reasons. The GHG Inventory originally estimated that 610,951 metric tons of carbon dioxide equivalent (MteCO2) were emitted from the Chico Urban Area in 2005. Of these emissions, it was determined that approximately 54% were generated from transportation, 23% from the commercial sector (which includes the City's operations and CSU, Chico), 19% from the residential sector, 4% from solid waste activities, and less than 1% from the industrial sector. The City of Chico's operations generated only 1% of the total emissions generated within the community.

It is to be expected that due to growth GHG emissions increased since the 2005 base year and will increase each year. The GHG inventory used various growth factors, such as population estimates, energy consumption, and economic growth to project the GHG emissions that would be generated each year until 2020 if no GHG reduction measures were taken during that time. This is called a "Business as Usual" (BAU) projection. The inventory projected that under the BAU scenario 1,004,161 MteCO2 would be emitted annually in 2020.

But after further review of the growth factors and the energy source coefficients used in the inventory, and recognizing that the recession has reduced energy consumption, it was determined that the BAU projections and the baseline emissions identified in the inventory may have been overstated. The baseline emissions were revised using the local PG&E energy coefficients instead of the western average default that was in the ICLEI software, which estimated 515,990 GHG emissions were emitted in 2005. The BAU projection was also revised using the same growth factors used in the 2030 General Plan to reflect a more realistic estimate of 703,567 MteCO2 of GHG emissions would be generated by 2020 if no actions are taken. Therefore, to meet the 25% below 2005 emissions level goal, community-wide GHG emissions would need to be reduced to 386,992 MteCO2 emitted annually.

To determine the actual amount of emissions that need to be reduced to meet the targeted GHG level, it is necessary to look at the BAU projections as of 2010 and each year thereafter. In doing so, it is estimated that the total annual GHG emissions would have to be reduced by 316,575 MteCO2. The following graph depicts the relationship between the BAU, the 2005 base year, and the 25% target reduction goal.

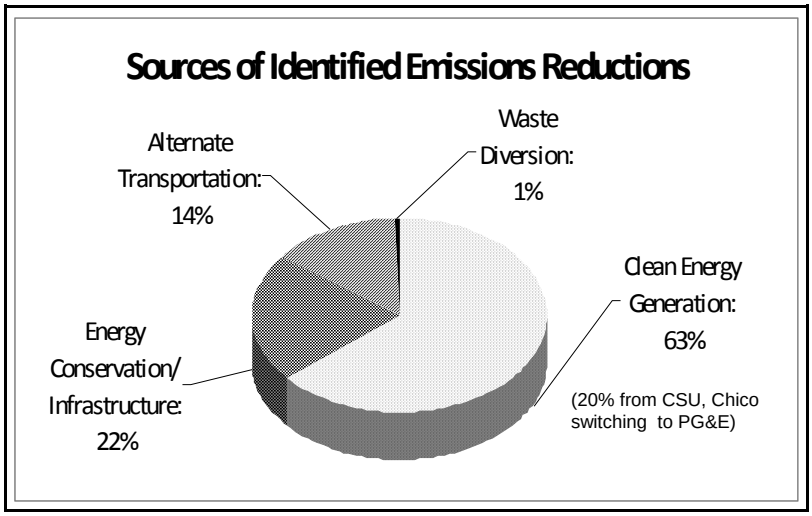


Climate Action Plan Framework:

The CAP attempts to identify possible emission reduction measures that could be taken within each sector to meet the targeted reduction. The CAP would include all actions that the City and the community have already implemented since the 2005 base year and will include proposed measures needed to be implemented to meet the 25% GHG reduction target. Proposed elements of the CAP include:

1. A summary of the baseline GHG inventory and emission forecast.
2. The adopted GHG emission reduction target.
3. A description of the emission reduction measures already implemented for each sector.
4. A description of new or proposed actions needed to complete the selected target reduction.
5. Implementation strategies for each proposed measure, identifying costs, responsibilities, timelines, and potential funding sources.
6. Procedures for monitoring the status of implementation of the emission reduction actions and progress toward achieving the target.

ISD and City staff have tried to identify and quantify the impact of the GHG reduction actions that have been taken by the City and the Community since 2005. To count as an emission reduction measure, the action must affect a change in an emissions-producing activity from the way it was emitting in 2005. Some of the actions identified from both private and public efforts include solar panel installations, waste reduction efforts, energy conservation appliances and retrofits, and alternative fueled vehicles. From these efforts, it was estimated that 62,413 MteCO2 of GHG emissions have already been reduced from the total emissions generated annually in 2010. The graph on the right depicts the sources of the identified GHG emission reductions.



Phased Approach:

To obtain the remaining annual emission reductions, staff is proposing that the emissions reductions be achieved gradually in three implementation phases. The BAU projections estimate that by 2012, 596,132 GHG emissions would be emitted annually. Phase 1 attempts to reduce the annual emissions to baseline or to 515,990 MteCO2 by the end of the year 2012, Phase 2 proposes a target of 10% below 2005 levels by the end of 2015, and the remaining 15% of the 25% to be achieved in Phase 3 between the years 2016 and 2020. A summary of the implementation dates for and targeted GHG reductions for each Phase are depicted in the following chart:

	Target Date	Annual MteCO2 Emissions goal	Additional MteCO2 Reductions Needed to Meet Goal
PHASE 1 TARGET: Reduce to Base Year Emissions	Dec. 2012	515,990	80,142 *(62,413 has been achieved)*
PHASE 2 TARGET: 10% Below Base Year	Dec. 2015	464,391	89,762
PHASE 3 TARGET: 25% Below Base Year	Dec. 2020	386,992	146,671
Total Annual MteCO2 Reduction Needed by 2020			**316,575**

The rationale for this gradual approach is:

1. The reduced funding available for implementation due to the current recession and economic climate.
2. Assumes new emission reduction technology and better cost effectiveness will be gained in the future.
3. Avoids early replacement of expensive equipment and/or capital infrastructure.
4. Provides time to monitor and learn "Best Management Practices" from other agencies and businesses.
5. Allows for community involvement and public vetting to occur at each implementation stage.
6. Provides opportunity to monitor progress toward the goal and flexibility to make modifications to the plan as needed.

Proposed Phase I Action Measures:

It is estimated that the current existing GHG emission reduction measures identified above will continue to reduce annual emissions by approximately 6,388 MteCO2 by December, 2012. This, together with the already identified reduction of 62,413 MteCO2, reduces the additional reductions needed to meet the Phase 1 goal to 11,341 MteCO2.

Over the past year, the Task Force has been developing potential action measures for the CAP. More than 80 measures were identified (a list of measures is attached as Exhibit "A") and grouped into five major categories:

- City Government Efforts/Leadership
- Energy Efficiency
- Alternative or Reduced Transportation
- Waste Reduction
- Community Outreach/Education

Each of these measures has been reviewed and prioritized based on the potential GHG emissions reductions and cost-effectiveness for potential implementation by 2012. Staff also looked for those projects that are already being conducted or have funding allocated to them through grants or other sources (i.e., the low-hanging fruit). The chosen action measures were then grouped into the following Phase 1 projects:

1. CITY GOVERNMENT
- a. Installation of LED Street Lights
- b. Additional Lighting Upgrades to City Buildings and Facilities
- c. Central Control for HVAC *(Energy Management System)*
- d. Installation of a Central Plant HVAC/Chillers *(Council Chamber and City Hall)*
- e. Power Management System for Computers
- f. Continued Purchase of Hybrids/Alternative Fueled Vehicles
- g. Additional landscape acreage added to Central Irrigation Controller

2. RESIDENTIAL ENERGY EFFICIENCY PROGRAMS
- a. Energy Audits/Weatherization of 100 single-family and 100 multifamily units *(PG&E Pilot Innovators Grant)*
- b. Residential Energy Conservation Retrofits Upon Resale *(RECO Ordinance)*

3. ALTERNATIVE/REDUCED TRANSPORTATION
- a. New Hwy 99 Bike Path *(Phase I)*
- b. Expanded and Improved Bus Service *(BCAG Market-based Transit Study)*
- c. 2nd Street Couplet Project
- d. Implementation of Franchise Waste Collection Zones

4. WASTE REDUCTION
- a. Methane Gas Capture at Landfill *(Butte County)*
- b. Increased Composting *(additional yard waste/food waste)*
- c. Increased Multi-family/Commercial Recycling *(Right to Recycle Campaign)*

5. COMMUNITY OUTREACH/EDUCATION
- a. Sustainability Web Site *(Pages on City Web Site)*
- b. Community Workshops *(PG&E Grant Outreach and Sustainability Events)*
- c. Green Business/Climate Partnership Campaign
- d. School Outreach Campaign

e. Household Outreach Campaign *(1,000 households)*

A summary of the proposed actions, the GHG emissions reductions estimated to be achieved, the estimated cost and the potential funding source for each measure is depicted in the matrix attached as Exhibit "B." Although potential measures for each Phase will be included in the CAP, staff is only providing a cost benefit-analysis for Phase 1 projects at this time. The reasons for this are that costs will likely change between now and the end of 2012, and so may the actions proposed for the next Phase after review of implementation of Phase 1 and the progress toward the 25% goal.

Implementation of the above measures are estimated to achieve an additional 2,752 MteCO2 reduction in annual GHG emissions, which is approximately 8,589 MteCO2 short of the 11,341 MteCO2 needed to meet the Phase I goal. However, it should be noted that some of the proposed measures involve public outreach and education and it is difficult to determine the amount of GHG reductions from these efforts. It is also highly likely that other GHG reduction measures have been or are being implemented by both the public and private sectors of the community that have not been identified to date. Staff will be monitoring the factors, such as energy and fuel use, that are used to determine GHG emissions throughout the Phase 1 implementation period to ascertain the actual amount of GHG emission reductions achieved from these programs and the efforts of others. In addition, some of projects that were slated for Phase 2 could be implemented earlier if funding, such as grants, became available to the City.

NEXT STEPS:

The CAP is being prepared concurrently with the 2030 General Plan update and further defines the implementation measures needed to implement the goals and policies related to the General Plan and its Sustainability Element. Continued coordination between the Task Force and General Plan Team will ensure consistency between the two documents.

If the Phase 1 projects are conceptually approved by Council, staff will prepare a first draft of the CAP for review and consideration by the Task Force this Fall. It is anticipated that the draft CAP will be completed by the end of 2010 and presented to Council for approval in January 2011.

ENVIRONMENTAL REVIEW

No formal action is being requested of the Council at this time that would trigger Environmental Review. Environmental review and the public vetting process will begin after the draft CAP is considered and approved by Council.

PUBLIC CONTACT:

All of the Sustainability Task Force and City Council meetings in which the CAP was considered were all publicly posted and sent to those on the Sustainabilty Task Force Agenda distribution list.

Reviewed by:

_____
Ruben Martinez, General Services Director

Approved by:

_____
David Burkland, City Manager

DISTRIBUTION:
City Clerk (18)
Sustainability Task Force Members (16)
Planning Director
Principal Planner
Assoc. Planner Williams

ATTACHMENTS:
Exhibit A: Identified Potential Climate Action Plan Measures
Exhibit B: Phase 1 Project Matrix

EXHIBIT A - IDENTIFIED ACTION MEASURES

Energy Use Strategies

Goal 1: Upgrade & Tune-up Equipment
- 1.1 Energy Star Appliances
- 1.2 HVAC Retrofits

Goal 2: Green Building & Energy Efficiencies
- 2.1 Green Building Incentives/ Assistance
- 2.2 Energy Codes
- 2.3 Energy Efficiency Loans
- 2.4.1 L.I. Home Weatherization
- 2.4.2 Facility Retrofits
- 2.5 Switch Electric Heat to Nat. Gas
- 2.6 EPA Certified Wood Stoves
- 2.7.1 Green Roofs
- 2.7.2 Reflective Roofing
- 2.8 Plant Building-Shade Trees
- 2.9 Time-of-Sale Energy Upgrades
- 2.10 Efficient New Housing Projects

Goal 3: Improve Lighting Efficiency
- 3.1 Lighting Retrofits
- 3.2 Lights-Out-at-Night Policy
- 3.3 Occupancy Sensors
- 3.4 CFL Distribution
- 3.5.1 LED Street Lights
- 3.5.2 LED Holiday Lights
- 3.5.3 LED Exit Signs

Goal 4: Renewable Energy
- 4.1.1 Install Solar PV
- 4.1.2 Install Solar Water Heaters
- 4.2 Purchase 'Green' Energy/ RECs

Goal 5: Green Business Program
- 5.1 Green Business Certification

Goal 6: Energy Efficiency Education
- 6.1.1 Energy Efficiency Challenge
- 6.1.2 Residential "Low Carbon Diet Program"

Goal 7: Decrease Street Light Hours
- 7.1.1 Decrease Hours St. Lights Turned On
- 7.1.2 Bi-Level Lighting in P-Lots

Transportation, Land-Use, Development Strategies

Goal 1: Promote Walking
- 1.1.1 Slow Traffic, Improve Sidewalks
- 1.1.2 Create Pedestrian-Only Areas
- 1.2 "Safe Routes to School" Program

Goal 2: Reduce Vehicle Miles Traveled
- 2.1.1 Expand Alt. Transportation Infrastructure
- 2.1.2 Incentivize Alt. Transportation
- 2.2 Expand Bus Service: Range & Frequency
- 2.3.1 Provide Bikes for Daily Trips
- 2.3.2 Provide Free Bike Maintenance
- 2.4.1 Car-Sharing Program
- 2.4.2 Increase Telecommuting
- 2.5 Police-on-Bikes Program
- 2.6 Free High School Bus Passes
- 2.7 Parking Cash-Out Program

Goal 3: Expand Alternative Fuel Usage
- 3.1 Convert Fleets to Biodiesel, CNG, Electric, etc.
- 3.2 EV Recharge Stations in Parking Lots
- 3.3 Community Biodiesel Fueling Station

Goal 4: Improve Vehicle Fuel Efficiency
- 4.1.1 Promote Hybrid Vehicles
- 4.1.2 Purchase Hybrid Vehicles for City Fleet
- 4.2 School Bus PM Traps & Oxidation Catalysts
- 4.3 Limit Idling of Local Transit & Heavy Equipment
- 4.3.2 Synchronize Traffic Lights, Improve Flow
- 4.4 Fuel-Efficient Parking Enforcement

Goal 5: Fleet Optimization
- 5.1 Reduce City Fleet Size

Goal 6: Encourage Transit-Oriented Development
- 6.1 Encourage Transit-Oriented Development

Goal 7: Air Quality
- 7.1 Alt. Transportation Citizen Education
- 7.2 Low-VOC Paints & Cleaning Products
- 7.3 Non- Asphalt Pavements
- 7.4.1 Portable Gas Can Replacement Program
- 7.4.2 Gasoline Lawnmower Replacement Program
- 7.4.3 Gasoline Leafblower Replacement Program
- 7.5 Plant Trees: Heat Island Mitigation

Solid Waste Strategies

Goal 1: Increase Recycling & Composting
- 1.1.1 Expand Curbside Recycling Programs
- 1.1.2 Expand Business Recycling Programs
- 1.1.3 Expand Government Recycling Programs
- 1.2.1 Expand Organics Composting
- 1.2.2 Expand Yard Waste Collection
- 1.3 Implement "Pay-as-You-Throw" Program
- 1.4 Expand Construction/ Demolition Recycling
- 1.5 Solid Waste Reduction Program
- 1.6 Franchise Waste Pick-Up Zones

Goal 2: Capture Waste Energy
- 2.1.1 Capture Landfill Methane
- 2.1.2 Capture Wastewater Methane

Water Conservation Strategies

Goal 1: Adopt a Water Conservation Ordinance
- 1.1 Adopt a Water Conservation Ordinance
- 1.1.2 Incorporate Low-Maintenance Landscaping

Goal 2: Install Central Irrigation Control Systems
- 2.1 Install a CIC System for City Parks

Goal 3: Improve Water Pumping Efficiency
- 3.1 Improve Water Pumping Energy Efficiency

Goal 4: Install High-Efficiency Water Fixtures
- 4.1.1 Install Low-Flow Fixtures in City Buildings
- 4.1.2 Install HE & Waterless Appliances in City Buildings
- 4.1.3 Subsidize & Distribute Low-Flow Fixtures
- 4.1.4 HE Appliance Retrofits in Community

Carbon Offsets

Goal 1: Purchase Carbon Offsets Where Cost-Effective
- 1.1 Mitigate Remaining Emissions with Offsets

Public Outreach/ Education

Goal 1: Determine Appropriate Level of Outreach
- 1.1 Level 1: Minimal: $__
- 1.2 Level 2: Moderate: $__
- 1.3 Level 3: Comprehensive: $__

EXHIBIT B

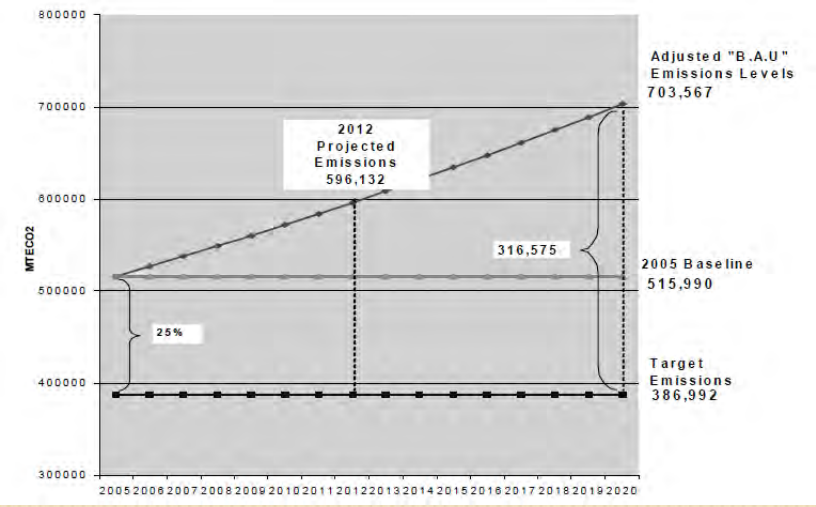
City of Chico CAP Phase I Community-Wide Cost-Benefit Analysis

Project	Annual Emissions Reduction (MteCO2)	Net Up-Front Costs	Additional Annual Operating Costs	Annual $ Savings	Net Present Value	Simple Payback	Net Cost/MteCO2 Mitigated Annual Average	Funding
1: Government Leadership								
LED Street Lights	160	$665,678	$0	$81,797	$671,599	8.1 years	-$6.71	Energy Efficiency Conservation Block Grant
Lighting Upgrades	42	$60,314	$0	$17,463	$219,618	3.5 years	-$8.27	CEC Low-Interest EE Loans
HVAC ems Control	27	$348,792	$0	$11,057	-$202,030	(31.5 years)	$33.37	CEC Low-Interest EE Loans
New Chillers (City Hall/Council Bldg)	100	$818,069	$0	$41,172	-$113,370	19.9 years	$1.81	CEC Low-Interest EE Loans
Computer Power Mgmt	31	$1,800	$0	$12,722	$102,109	0.1 years	-$32.98	CEC Low-Interest EE Loans
Additional Hybrid Vehicles	20	$42,000	$0	$6,647	$14,977	6.3 years	-$7.59	City Equip. Replacement Fund
Added Acreage Central Irrigation Control	5	$30,000	$0	$2,242	-$2,906	13.4 years	$2.37	New Development
2: Residential Energy Efficiency								
Weatherization/ Energy Audits- Pilot	108	$399,530	$0	$32,795	$76,941	12.2 years	-$1.77	PGE Innovators Pilot Grant
Retrofit Upon Resale Ordinance	11	$7,500	$0	$3,280	$36,675	2.3 years	-$8.45	N/A
3: Alternative Transportation								
New Bike Path- 99	497	$3,425,000	$13,500	$167,350	-$1,700,414	(22.3 years)	$15.21	ARRA, CMAQP, Local Transportation Funding 500G
Franchise Waste Collection Zones	683	$0	$0	$227,804	$3,995,516	N/A	-$6.50	N/A
Expanded Bus Service	43	$0	$0	$14,508	$254,460	N/A	-$6.56	BCAG
New Bike Path- 2nd Street Couplet	36	$200,000	$0	$12,078	-$51,525	(16.6 years)	$6.39	CMAQ
4: Community Outreach/ Education								
Household Outreach (1,000 Homes)	805	$4,000	$4,000	$267,831	$498,149	0.01 years	-$154.75	Used Oil Payment Program, Beverage Cont. and Oil Recycling Grants
Business Climate Partnership	N/A	$1,000	$0	N/A	N/A	N/A	N/A	Used Oil Payment Program, Beverage Cont. and Oil Recycling Grants
Workshops	N/A	$800	$0	N/A	N/A	N/A	N/A	PGE Innovators Pilot Grant
Website	N/A	$10,000	$400	N/A	N/A	N/A	N/A	PGE Innovators Pilot Grant
5: Waste Management								
Landfill Gas Capture	78	$0	$0	N/A	N/A	N/A	N/A	N/A
Additional Composting	106	$0	$0	N/A	N/A	N/A	N/A	N/A
Totals	2,752	$6,014,483	$17,900	$898,748	$3,799,801	6.8 years	-$174.44	N/A

CITY OF CHICO
CLIMATE ACTION PLAN

Phase I Overview

Emissions Inventory Baseline and Projections



Climate Action Plan Timeline

- Fall 2010: Development of CAP
- 2011-2012: Phase I Implementation
- 2012: Evaluation of Phase I Success
- 2013-2015: Phase II Implementation
- 2015: Evaluation of Phase II Success
- 2016-2020: Phase III Implementation

Climate Action Plan Targets

	Target Date	Annual MteCO2 Emissions goal	Additional MteCO2 Reductions Needed to Meet Goal
PHASE 1 TARGET: Reduce to Base Year Emissions	Dec. 2012	515,990	80,142 *(62,413 has been achieved)*
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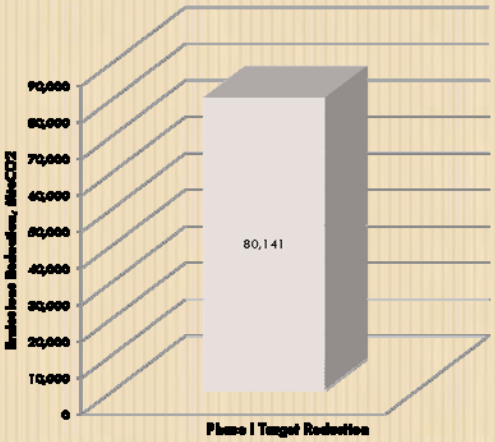
Total Annual MteCO2 Reduction Needed by 2020			**316,575**

Identifying the Least-Cost Path

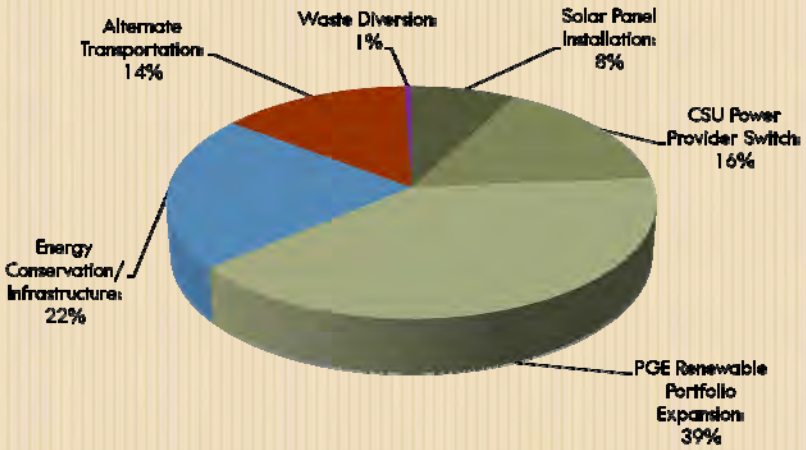


Identified Emissions Reductions 2005-2010

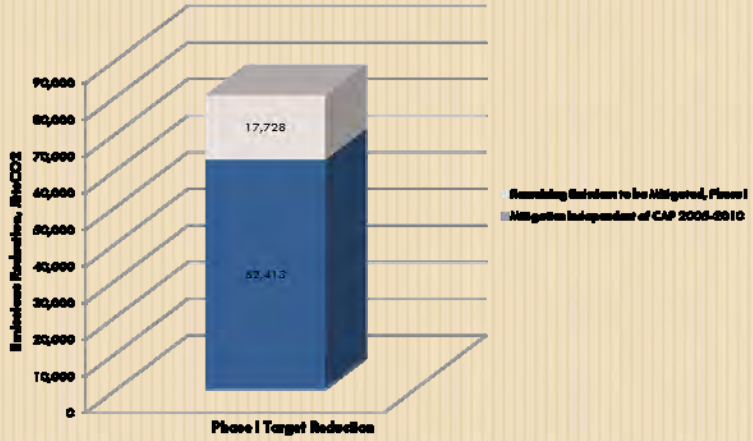
- Reductions monitored from all sectors community-wide
- The aggregate impact of these projects will reduce emissions levels by **62,413 MteCO2** annually by the end of 2010
- Early Action Leaders Include:

SMUCKER'S · ASSOCIATED STUDENTS csu, chico · B-Line Butte Regional Transit · ENLOE MEDICAL CENTER · SIERRA NEVADA · Community Action Agency of Butte County, Inc. · CITY OF CHICO · CHICO MALL · PG&E

Sources of Identified Emissions Reductions



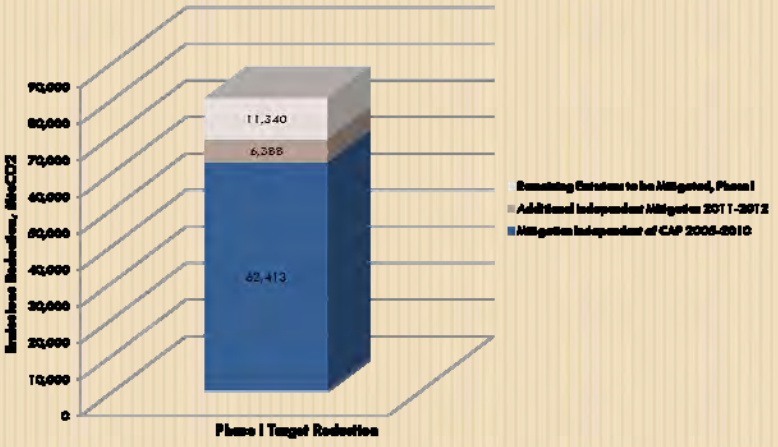
Progress Towards Phase I Target



Expanded Impact During Phase I

- These programs include:
  - Solar PV Installation
  - Hybrid Vehicles Sales
  - Home Weatherization
  - Lighting Efficiency Retrofits
  - *Energy Star* Appliance Sales
- Their aggregate impact will reduce emissions levels by an additional **6,388 MteCO2** annually by the end of Phase I

Progress Towards Phase I Target



CAP Phase I Project Analysis

Project	Annual Emissions Reduction (MteCO2)	Net Up-Front Costs	Annual Savings	Simple Payback	Net Present Value	Net Cost/MteCO2 Mitigated Annual Average	Funding
All Phase I Projects							
Totals	2,752	$6,014,483	$862,948	6.8 years	$3,799,801	-$174	All projects currently funded from grants or other sources

City Government Leadership

Project	Annual Emissions Reduction (MteCO2)	Net Present Value	Simple Payback	Net Cost/MteCO2 Mitigated Annual Average	Funding	Additional Benefits
Government Leadership						
LED Street Lights	160	$671,599	8.1 years	-$6.71	Energy Efficiency Conservation BG	Better Light Quality, Decreased Maintenance
Lighting Upgrades	42	$219,618	3.5 years	-$8.27	CEC Low-Interest EE Loans	Decreased Maintenance
HVAC Control Retrofits	27	-$202,030	(31.5 years)	$33.37	CEC Low-Interest EE Loans	Decreased Maintenance
New Chillers (City Hall/ Council Building)	100	-$113,370	19.9 years	$1.81	CEC Low-Interest EE Loans	Decreased Maintenance
PC Power Management	31	$102,109	0.1 years	-$32.98	CEC Low-Interest EE Loans	Decreased Maintenance
Additional Hybrid Vehicles	20	$14,977	6.3 years	-$7.59	City Equip. Replacement Fund	Improved Air Quality
Added Acreage Central Irrigation Control	5	-$2,906	13.4 years	$2.37	City New Development	Significant Water Savings

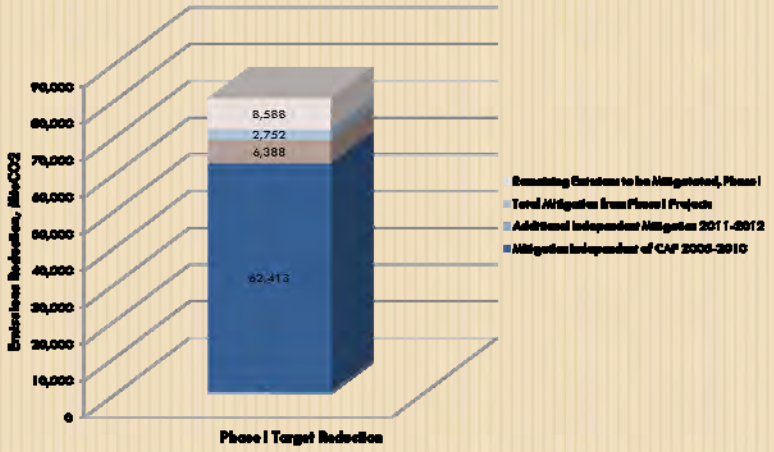
Community Outreach & Residential Energy

Project	Annual Emissions Reduction (MteCO2)	Net Present Value	Simple Payback	Net Cost/MteCO2 Mitigated Annual Average	Funding	Additional Benefits
Community Outreach						
Household, School Outreach	805	$498,149	0.01 years	-$154.75	Recycling/ Resource Conservation Grants	Public Engagement, Educational
Business Climate Partnership	N/A	N/A	N/A	N/A	Recycling/ Resource Conservation Grants	Business Community Engagement
Workshops	N/A	N/A	N/A	N/A	PGE Innovators Pilot	Public Collaboration, Vetting
Website	N/A	N/A	N/A	N/A	PGE Innovators Pilot	"Hub" for all things CAP-related
Residential Energy Efficiency						
Weatherization/ Energy Audits- Pilots	108	$76,941	12.2 years	-$1.77	PGE Innovators Pilot	Trial Results, Encourages Additional Action
Retrofit Upon Resale Ordinance	11	$36,675	2.3 years	-$8.45	(Home Sales Process)	Water Conservation

Transportation & Waste Management

Project	Annual Emissions Reduction (MteCO2)	Net Present Value	Simple Payback	Net Cost/MteCO2 Mitigated Annual Average	Funding	Additional Benefits
Alternative Transportation						
New Bike Path- 99 Corridor	497	-$1,700,414	(22.3 years)	$15.21	ARRA, CMAQ, Local Transportation Funding	Rider Safety, Air Quality, Less Auto Traffic
Franchise Waste Collection Zones	683	$3,995,516	N/A	-$6.50	N/A	Decreased Wear on Streets, Decreased Noise
Expanded Bus Service	43	$254,460	N/A	-$6.56	BCAG	Less Auto Traffic
New Bike Route- 2nd Street Couplet	36	-$51,525	(16.6 years)	$6.39	CMAQ	Rider Safety, Air Quality, Less Auto Traffic
Waste Management						
Landfill Gas Capture	78	N/A	N/A	N/A	N/A	Energy Generation
Additional Composting	106	N/A	N/A	N/A	N/A	N/A

Progress Towards Phase I Target



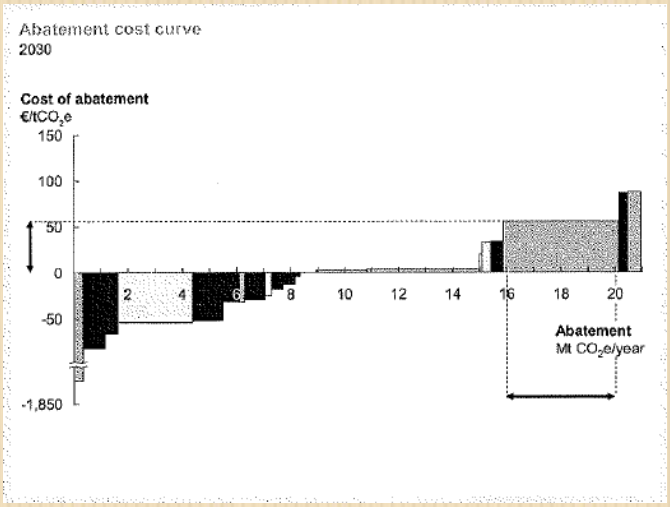
Additional Components of the CAP

- Analysis of Additional Potential Mitigation Measures
- Potential Programs Currently in Development
- Implementation Monitoring & Oversight

Additional Cost-Benefit Analysis

- The Institute for Sustainable Development will work in collaboration with Dr. Pete Tsournos' Econ 466: *E.N.R.* class over the course of Fall 2010
- We will conduct a comprehensive cost-benefit analysis of additional selected measures from the STF list of *Identified Potential Emissions Mitigation Projects* (Exhibit A)
- The result will be a prioritization of measures by cost-effectiveness to help guide City decision making throughout the three phases of implementation

Example Abatement Cost Curve



Potential Programs in Development

- Tree Maintenance/ Planting Sponsorship Program
  - City Urban Forest Manager D. Britton, Scott Gregory
- Green Business Program
  - Mayor's Business Advisory Committee, Chamber, DCBA
- Alternative Transportation Planning
  - STF, Existing Transportation Committees, BCAG & SB-375
- 'Right to Recycle' MF Unit Outreach Program
  - CLIC Environmental Advocacy Program
- Expansion of Residential Energy & Outreach Program
  - PG&E Innovators Group & City of Chico

Implementation Oversight

- Key to implementation success will be continual monitoring of:
  - Emissions Levels
  - Project Implementation Success
  - Best Practices State-Wide and Nationally
  - Grant Availability
  - Changes in Grid Mix and in Input Price Levels

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