



City of Woodland Preliminary 2020 Climate Action Plan

Adopted by the Woodland City Council, July 15, 2014



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Message from the City Council

This City of Woodland Preliminary 2020 Climate Action Plan presents a program of strategies and actions developed through a community-based effort to guide the City, its residents, and local businesses in addressing Woodland's contributions to climate change. Adoption of this plan demonstrates the City of Woodland's commitment to continuing to build an environmentally and economically sustainable, vibrant, healthy community by promoting energy efficiency; intelligent land use and transportation planning; respect and care for our urban forest and open spaces; and wise stewardship of water, land, and air resources. We are grateful to the community members whose active participation in development of the plan established a momentum that we are confident will be sustained through collective and individual actions to achieve its goals.

Acknowledgements

The Pacific Gas and Electric Company (PG&E) Green Communities Program provided the funding for preparation of Woodland's 2020 Climate Action Plan through Yolo Energy Watch, the PG&E-local government partnership with Yolo County jurisdictions.

The foundation for this document is the November 2012 *City of Woodland Climate Action Plan Technical Report*, which was prepared by the Sustainable Design Academy of the University of California, Davis (UCD) under the direction of Dr. Deb Niemeier. The strategies presented in this document were developed through community workshops, working group sessions of the community-based CAP Stakeholders Group, staff discussions, and meetings of the Woodland City Council Sustainability Committee. The City thanks the many community members who provided valuable suggestions through these efforts.

The CAP Stakeholders group included representatives of the Woodland Historical Preservation Commission, Woodland Planning Commission, the Water Utility Advisory Committee, Yolo County Health Council, the Offices of Yolo County Supervisors Rexroad and Chamberlain, Woodland Joint Unified School District, Woodland Community College, the League of Women Voters, Woodland Tree Foundation, Tuleyome, Woodland Chamber of Commerce, North Valley Hispanic Chamber of Commerce, the Historic Woodland Downtown Business Association, Yolo County Board of Realtors, PG&E, Yolo Energy Watch, and Pacific Coast Producers.

Special thanks are due to John Mott-Smith, Yolo County Climate Change Advisor and Yolo Energy Watch Program Manager, who facilitated the funding arrangements for this project and whose support, advocacy, and encouragement were critical to its completion, and to Dr. Deb Niemeier, whose expertise in climate change science provided the technical basis for this effort.

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Acronyms and Abbreviations

AB	Assembly Bill
BAU	Business-as-Usual
CAP	Climate Action Plan
CAP Technical Report	City of Woodland Climate Action Plan Technical Report
CCA	Community Choice Aggregation
CEQA	California Environmental Quality Act
CFL	compact fluorescent lamp
CH ₄	methane
CNG	compressed natural gas
CO ₂	carbon dioxide
CO ₂ e	equivalent carbon dioxide
EEM	Energy Efficient Mortgage
EV	electric vehicle
GHG	greenhouse gas
HFC	hydrofluorocarbon
HVAC	heating, ventilation, and air conditioning
LED	light-emitting diode
LOS	level of service
MTCO ₂ e	metric ton of equivalent carbon dioxide
N/A	not applicable
N ₂ O	nitrous oxide
PACE	property-assessed clean energy
PFC	perfluorocarbons
PG&E	Pacific Gas and Electric Company
PV	photovoltaic
RPS	California Renewables Portfolio Standard
SACOG	Sacramento Area Council of Governments
SB	Senate Bill
SF ₆	sulfur hexafluoride
TOD	transit-oriented development
UCD	University of California, Davis
UFMP	Urban Forest Management Plan
ULL	Urban Limit Line

Executive Summary

Purpose and Need

The City of Woodland Preliminary 2020 Climate Action Plan (CAP) presents a set of community-generated strategies to guide the City, its residents, and local businesses in reducing greenhouse gas (GHG) emissions consistent with state goals for addressing California's contributions to rapid climate change.

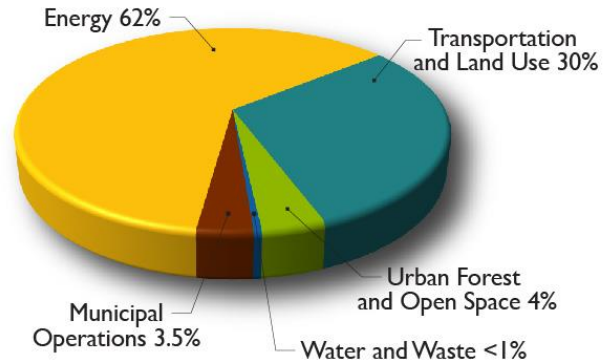
In 2006, California enacted AB 32, the Global Warming Solutions Act, which requires that GHGs be reduced to 1990 levels statewide by 2020. Local communities are encouraged to reduce GHGs 15% from 2005 levels by 2020 and must address climate change effects in general plans and project environmental reviews. The CAP strategies are aimed at reducing Woodland's GHGs 15% below 2005 levels by 2020 and providing tools for addressing GHG emissions of future development.

Woodland's GHG Reduction Target and Strategies

The foundation for the CAP is the *City of Woodland Climate Action Plan Technical Report*, prepared by the Sustainable Design Academy of the University of California, Davis. The report includes detailed GHG emissions calculations and identifies Woodland's 2020 GHG reduction target as **60,000 metric tons of equivalent carbon dioxide (MTCO₂e)**.

The CAP approach to GHG reduction was developed using input from community workshops and stakeholder meetings. The approach is organized into six focus areas—the five shown in the pie chart at upper right and Public Involvement. Most progress in reducing GHGs by 2020 is expected to come from lowering energy use, using renewable energy, reducing gas and diesel vehicle use, and increasing tree canopy. However, efforts in all areas are important to CAP implementation success.

CAP Strategy Mix




For example, land use planning strategies are essential to influencing lifestyles and travel modes and support transportation-related GHG reductions. Public involvement is critical to CAP implementation success, but no GHG reductions are directly attributed to public involvement because they are accounted for in other focus areas.

Each of the six focus areas includes overarching objectives, strategies to achieve each objective, and implementation actions for each strategy. The table below explains the symbols used in the following summaries of CAP objectives and strategies.

The Key






GHG Reduction (MTCO ₂ e)	% of Woodland Reduction Target	Symbol
1-3,000	0-5%	1 leaf
3,000-6,000	5-10%	2 leaves
6,000-9,000	10-15%	3 leaves
9,000-12,000	15-20%	4 leaves
> 12,000	> 20%	5 leaves

Important to overall CAP success, but not quantifiable 


Energy

Much of the progress toward meeting Woodland’s 2020 GHG reduction target can be achieved through individual actions to reduce energy demand and increase the proportion of energy obtained from renewable sources. Many factors are making it possible to achieve significant, immediate reductions in energy-related GHGs: rapidly improving technologies; availability of more energy-efficient building materials, lights, and equipment; and financing mechanisms, such as property-assessed clean energy (PACE) programs, that make improvements more affordable. The following strategies, if fully implemented, would reduce community GHG emissions by 37,400 MTCO₂e, or 62% of Woodland’s GHG-reduction target.

OBJECTIVE 1: Reduce Energy Use by One-Fourth to One-Third

E-1	Lighting Upgrades	
E-2	Appliance/Equipment Upgrades	
E-3	Comprehensive Building Efficiency	
E-4	Improved Building Temperature Controls	
E-5	Energy Conservation Education	

OBJECTIVE 2: Obtain 40 MW of Electricity from Renewable Sources




E-6	Renewable Energy Generation and Procurement	
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Transportation and Land Use

The two major approaches to reducing transportation GHG emissions are reducing motor vehicle use and replacing gasoline and diesel vehicles with low- or zero-emission vehicles. Transportation and land use strategies for GHG reduction are closely linked because of the influence land use policies can have on types, rates, and patterns of growth; the distances people travel for essential services; and the ease or difficulty of different modes of travel. Land use and transportation infrastructure choices that promote convenience of pedestrian, bicycle, and transit travel and that situate residents near workplaces, goods and services, and recreation opportunities are essential to reducing GHGs from motor vehicle use. The following strategies, if fully implemented, would reduce GHG emissions by 18,000 MTCO₂e, or 30% of Woodland’s GHG-reduction target.


OBJECTIVE 1: Implement Land Use Policies to Support Reduced Motor Vehicle Use

T/LU-1	Complete Streets Program	
T/LU-2	Infill Development, Redevelopment, and Repurposing	
T/LU-3	Smart Growth in New Development	

OBJECTIVE 2: Reduce Vehicle Trip Mileage and Equipment Idling Emissions by 1%

T/LU-4	Reduced Motor Vehicle Trips	
T/LU-5	Increased Mass Transit Use, Walking, and Bicycling	
T/LU-6	Reduced Emissions from Vehicle Idling and Other Equipment	

OBJECTIVE 3: Replace Gas and Diesel Vehicles with Alternative-Fuel Vehicles

T/LU-7	Increased Use of Alternative-Fuel Vehicles	
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Urban Forest and Open Space

With proper species selection, placement, and management, trees can help reduce GHG emissions by shading buildings, which reduces the need for air conditioning; shading pavement and reducing “heat island” effects; insulating buildings from cold winds; capturing and storing atmospheric carbon dioxide; and using solar energy to convert moisture to water vapor, resulting in cooler air. The following strategies, if fully implemented, would reduce GHG emissions by 2,300 MTCO₂e, or 4% of Woodland’s GHG-reduction target.

OBJECTIVE 1:
Increase Tree Canopy by 50% by 2020

- UF-1 Urban Forest Management Plan
- UF-2 Increased Tree Planting
- UF-3 Maintenance of Existing Trees
- UF-4 Public Education

OBJECTIVE 2: Maintain and Enhance Open Space Environmental Values

- UF-5 Open Space Preservation

Water and Waste

Reducing water use at the tap reduces the energy used by the City for water pumping and treatment and for wastewater treatment, as well as the energy used to heat water in homes and businesses. Solid waste contributes to GHG emissions through decomposition at landfills. GHG emissions from Woodland’s landfill waste are accounted for by Yolo County and are not quantified in the City’s CAP. However, waste-reduction strategies are included to address Woodland’s contributions to regional GHGs. The following strategies, if fully implemented, would reduce GHG emissions by 200 MTCO₂e, less than 1% of Woodland’s GHG-reduction target.

OBJECTIVE 1:
Reduce Per Capita Water Demand 25-30%

- W/W-1 Increased Water Conservation

OBJECTIVE 2:
Achieve 75% Landfill Waste Diversion

- W/W-2 Waste Diversion and Recycling

Public Involvement

The success of most of the CAP strategies will depend on the combined actions of a great many individuals. Community engagement on the scale that is needed for success will require reliance, in part, on an effort driven by community members to educate and inspire other community members.

OBJECTIVE 1: Build Community Engagement in CAP Implementation

- PI-1 Citizen-Led Outreach
- PI-2 Outreach Materials and Activities
- PI-3 Recognition of Business Sustainability Efforts

OBJECTIVE 2:
Measure CAP Implementation Progress and Adjust Actions as Needed

- PI-4 Mid-Point Check and Recommendations



Municipal Operations

Municipal operations that generate GHG emissions include the operation of gas and diesel vehicles and equipment and the use of electrical power to operate City buildings, sports field lighting, streetlights and signals, wells, wastewater treatment processes, and stormwater pumps. Strategies are provided to address these sources as well as City policies and procedures. The following strategies, if fully implemented, would reduce the City’s GHG emissions by 2,100 MTCO₂e, or 3.5% of Woodland’s GHG-reduction target.

OBJECTIVE 1: Incorporate Sustainable Practices into All City Operations

MO-1 Internal Policies



MO-2 Purchasing and Contracting



OBJECTIVE 2: Reduce Emissions from Municipal Electricity Use by 80% or More

MO-3 Increased Energy Efficiency and Use of Renewable Energy



OBJECTIVE 3: Reduce Vehicle Fleet and Employee Commute Emissions

MO-4 Increased Use of Alternative-Fuel and Fuel-Efficient Vehicles



MO-5 Reduced Motor Vehicle Use



Adaptability in CAP Implementation

The CAP is meant to be a guide to an evolving, rather than a static, plan of action. The specific activities needed to successfully achieve the community’s GHG reduction target may change or expand as new technologies and policies develop and also as Woodland undergoes changes over time.

An important element of the CAP is a mid-point (2017) assessment of progress (Public Involvement Objective 2). If the assessment finds that sufficient progress is not being made toward achieving the 2020 GHG-reduction target, further actions will be selected for implementation from a menu provided in the CAP.



To be effective, CAP implementation will require a high level of public engagement. A linchpin of plan implementation is the formation of one or more self-motivated community groups that will partner with the City to develop and implement outreach efforts aimed at achieving specific goals outlined in the CAP. The City looks forward to the continued community momentum in working toward our common goal of supporting an environmentally and economically sustainable, vibrant, healthy Woodland.

For More Information

Woodland CAP and CAP Technical Report::

- City of Woodland: www.cityofwoodland/envirowoodland

Climate change science and planning:

- U.S. EPA: www.epa.gov/climatechange/
- State of California: www.climatechange.ca.gov/
- UCD: climatechange.ucdavis.edu/

Introduction and Overview

Purpose of the Climate Action Plan

This Climate Action Plan (CAP) presents a set of strategies formulated to guide the City, its residents, and businesses in reducing Woodland's contributions to greenhouse gas (GHG) emissions consistent with state goals. Specifically, the strategies are aimed at reducing community GHG emissions by 2020 to a level that is 15% below Woodland's 2005 GHG level.

Adoption of this plan demonstrates Woodland's commitment to helping reduce the effects of rapid climate change. Climate change is a global issue, but local governments and the communities they represent are uniquely capable of identifying the most effective ways of addressing major sources of GHG emissions within their own jurisdictions. The CAP provides a community-based policy framework to address community-wide GHG emissions sources. The CAP strategies also provide many co-benefits that will contribute to a healthier community. For example, increased emphasis on transit-oriented development corresponds to more walkable communities and better air quality, thus better health and livability effects.

This plan is designed to:

- Translate high-level objectives and quantified goals into a realistic, understandable set of implementation actions;
- Demonstrate that significant reductions in GHG emissions are attainable through local actions;
- Inspire community members to work collectively to achieve these reductions;
- Dovetail with updated community General Plan policies that are required to address climate change impacts and adaptation, including those for land use, transportation, building design, and infrastructure; and

- Provide a predictable approach to mitigation strategies for the compliance of future development projects with the California Environmental Quality Act (CEQA).

Climate Change Science

GHGs are those gases that trap heat in the atmosphere, a phenomenon known as the "greenhouse effect." The natural occurrence of these gases produces a natural greenhouse effect. Scientific evidence from many studies indicates that human activities are increasingly producing atmospheric concentrations of GHGs that are much higher than the naturally occurring GHGs in the atmosphere, causing rapid atmospheric warming. The result is the phenomenon commonly referred to as climate change, which is characterized by increasing average global temperatures, changing frequencies and intensities of droughts and floods, and rising sea levels. By the end of the 21st century, without concerted efforts to reverse current trends, global temperatures are expected to increase by 3.2 to 7.2 degrees Fahrenheit, causing sea levels to rise 7 to 23 inches.

The primary GHGs are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Others include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

For more information about climate change science and climate change planning, see:

- U.S. Environmental Protection Agency: www.epa.gov/climatechange
- State of California: www.climatechange.ca.gov
- University of California, Davis: climatechange.ucdavis.edu

Climate Change and California Policies

In California, the predicted effects of rapid climate change include increased periods of water scarcity, detrimental effects on agriculture production and food supplies, more wildfires, and increased flooding of coastal and other low-lying communities.

The State of California has taken many policy steps to address climate change, beginning with the establishment of 2050 and 2020 targets for GHG reductions:

- **Executive Order S-3-05, 2005:** Established a statewide GHG emissions reduction target of 80% below 1990 levels by 2050.
- **Global Warming Solutions Act – Assembly Bill (AB) 32, 2006:** Requires a statewide reduction in GHG emissions to 1990 levels by 2020.

To help meet the AB 32 goal for GHG reductions, the state encourages local communities to reduce their GHG emissions 15% from 2005 levels by 2020. This reduction is considered equivalent to achieving 1990 GHG levels. The City has set its GHG reduction target to correspond to this guidance.

Since the passage of AB 32, several other major California policies have been adopted to address climate change:

- **Senate Bill (SB) 97, 2007:** Requires analysis of the impacts of projects on climate change under CEQA.
- **California Renewables Portfolio Standard (RPS) – SB 1078, 2002; SB 107, 2006; SB 2, 2011:** Requires electricity providers to procure at least 33% of energy from renewable resources, such as solar, wind, and geothermal sources, by 2020.
- **Pavley Vehicle Emissions Standards – AB 1493, 2002:** Requires new standards for motor vehicle GHG emissions, resulting in regulations to reduce GHG emissions from passenger vehicles by about 30% in 2016.
- **Low Carbon Fuel Standard – Executive Order S-01-07, 2007:** Requires that the carbon intensity of California’s passenger vehicle fuels be reduced by at least 10% by 2020.

- **Sustainable Communities and Transportation Planning – SB 375, 2008:** Requires the establishment of regional per capita GHG emission reduction targets for cars and light-duty trucks for 2020 and 2035 to be implemented through a “sustainable communities strategy” adopted in each Metropolitan Planning Area in the state, including the Sacramento Area Council of Governments. The focus of the SCS is to reduce vehicle miles traveled within the region.

Development of Woodland’s Climate Action Plan

The foundation for the CAP is the November 2012 *City of Woodland Climate Action Plan Technical Report (CAP Technical Report)*, which was prepared by the Sustainable Design Academy of the University of California, Davis (UCD) under the direction of Dr. Deb Niemeier. The CAP Technical Report contains substantial background documentation, including detailed GHG emissions calculations and descriptions of the underlying assumptions for those calculations; a comprehensive menu of potential GHG reduction measures; and extensive supporting documentation to assist in the selection of measures tailored to Woodland’s unique conditions.

Community members and City staff used the documentation in the CAP Technical Report to compile the set of GHG reduction strategies and actions considered most appropriate for Woodland. This task was achieved through participation in public meetings, community workshops, and small working groups during 2012 and 2013 and discussions of the City Council Energy and Sustainability Committees from 2008 to the present.

The Pacific Gas and Electric Company (PG&E) Green Communities Program funded the UCD team’s preparation of the *CAP Technical Report*, the City’s public workshops and meetings, and the preparation of this document through Yolo Energy Watch, PG&E’s local government partnership with Yolo County jurisdictions.

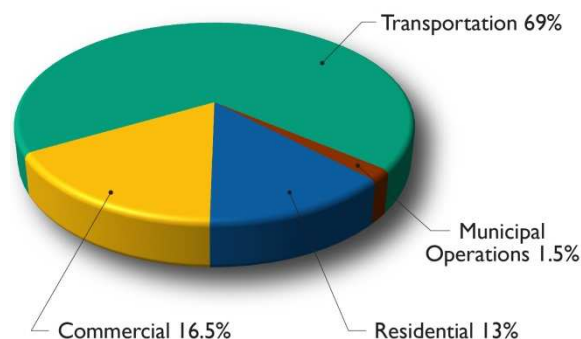
The *CAP Technical Report* and materials related to the public meetings and workshops are available for review at www.cityofwoodland.org/envirowoodland.

Greenhouse Gas Calculations

An emissions inventory quantifies emissions of the key GHGs over a given time. The amounts of the various GHGs are converted to a common unit, equivalent carbon dioxide (CO₂e), by weighting each pollutant by its relative heat-trapping ability, or “global warming potential.” For example, CH₄ is 21 times more potent than CO₂ in its heat-trapping ability; therefore, a unit of CH₄ has a CO₂e value 21 times that of a unit of CO₂. The common standard for expressing GHG emissions is the metric ton of CO₂e (MTCO₂e).

The major sources of emissions in the community inventory are residential and commercial energy consumption and transportation.

Projected 2020 GHG Sources



Energy-related GHG emissions consists of the GHGs (1) produced in the generation of electricity used in the community and (2) generated in the consumption of natural gas (e.g., for heating buildings).

PG&E provides gas and electricity services for Woodland. The electricity is produced from a mix of sources, including hydropower, nuclear, and natural gas facilities and from renewable resources such as wind, solar, and biomass. Different types of power generation emit different levels of GHGs, with renewable resources being “zero emission” sources. Therefore, except where electricity is coming entirely from renewable resources, each increment of electricity demand from customers contributes indirectly to the generation of GHGs at the utility’s level. In addition, burning natural gas to heat buildings, heat water, and cook directly results in GHG emissions.

Community transportation emissions are primarily the GHGs generated directly in the combustion of carbon-based fuels (e.g., gasoline and diesel) used in vehicle travel. In municipal operations, the major sources of emissions are water and wastewater pumping and processing.

Greenhouse Gas Reduction Target

Woodland’s GHG-reduction target is approximately 60,000 MT CO₂e. The target was developed through the following steps, which are documented in detail in the *CAP Technical Report*.

Calculation	Result (MTCO ₂ e)
2005 baseline: Inventory of 2005 communitywide GHG emissions.	544,000
2020 emissions target: 15% reduction from the 2005 baseline (-81 MTCO ₂ e).	463,000
2020 business-as-usual (BAU) forecast: Estimate of 2020 GHG emissions based on a “business-as-usual” (BAU) scenario in which 2005 policies and trends are assumed to continue to 2020 but the reductions mandated by the Renewables Portfolio Standard, the Pavley Vehicle Emissions Standards, and the Low Carbon Fuel Standard will be achieved.	523,000
2020 GHG Reduction Target: Calculated difference between the 2020 BAU forecast GHG level (523,000 MTCO ₂ e) and the 2020 target level (463,000 MTCO ₂ e).	60,000

Projections of population growth are a critical component of the calculations used in the BAU forecast and 2020 emissions reduction target and, consequently, in the formulation of the CAP strategy for 2020. For the *CAP Technical Report*, estimates of future population were derived from Sacramento Area Council of Governments (SACOG) data. The SACOG data were used to ensure consistency with regional estimates, particularly of transportation emissions, and for consistency with the approach used in other community planning documents, including the General Plan.

No single category of GHG reduction measures will be sufficient to meet Woodland's GHG reduction target of 60,000 MTCO₂e. For example, to meet this target, over 110 megawatts of electricity use would need to be supplied from solar power, or more than 10,000 gas-fueled vehicles would need to be replaced with electric vehicles. The plan therefore consists of a blend of strategies.

Woodland's Greenhouse Gas Reduction Strategies

More than two-thirds of the emissions calculated in the 2020 BAU projection for Woodland are attributable to transportation, as shown in the chart above.

Local transportation choices and practices can depend substantially on the physical layout of a community and on the local availability of essential services, employment opportunities, and recreational facilities. Consequently, land use and zoning policies can have an important influence on GHG emissions related to transportation. However, changes resulting from the implementation of new land use planning concepts generally take a long time to be realized. For this reason, strategies based on changes in land use planning are unlikely to produce substantial GHG reductions in the relatively short 2014–2020 timeframe. Consequently, the plan for meeting Woodland's 2020 GHG reduction target relies mostly on strategies that are likely to produce short-term progress, such as energy use reduction, renewable energy generation, conversion to alternative-fueled vehicles, and increased tree canopy.

The CAP strategies are organized into the following focus areas:

- Energy
- Transportation and Land Use
- Urban Forest and Open Space
- Water and Waste
- Public Involvement
- Municipal Operations

Each focus area includes overarching objectives, strategies for achieving each objective, and a list of implementation actions associated with each strategy.

The CAP is meant to be a guide to an evolving, rather than a static, plan of action. The specific activities needed to successfully achieve the community's GHG reduction target may change as new technologies and policies develop and also as the City undergoes changes over time. Therefore, although community input into CAP development included suggestions for step-by-step implementation of some strategies and specific suggestions for on-the-ground implementation actions, this level of detail is not included in this document. Rather, such details (such as specific bicycle routes to be developed) will be addressed in further discussions conducted over the course of CAP implementation.

In addition, the CAP working groups narrowed down the strategies and implementation actions to focus on a set of objectives and strategies that is realistic and manageable in terms of both their achievability and the number of items they contain. All suggestions received during CAP development in 2012-2014 are included in Appendix A.

Finally, an important element of the CAP is a mid-point (2017) assessment of progress (see Public Involvement Objective 3). If the assessment finds that sufficient progress is not being made toward achieving the 2020 GHG-reduction target, a set of further actions will need to be selected for implementation. The section Additional Actions provides a menu of potential choices.

Public Involvement

To be effective, CAP implementation will require a high level of public engagement. Therefore, a linchpin of plan implementation is the formation of one or more self-motivated community groups that will function as City partners in developing and implementing outreach efforts aimed at achieving specific goals set forth in this document. No GHG reduction levels have been directly attributed to this CAP element, which is described in the Public Involvement section. However, this element will be crucial to implementing the strategies presented in the Energy, Transportation and Land Use, Urban Forest and Open Space, and Water and Wastewater areas.

Guide to Focus Areas

The CAP includes the following focus areas:

Energy (E)

Water and Waste (W/W)

Transportation and Land Use (T/LU)

Public Involvement (PI)

Urban Forest and Open Space (UF)

Municipal Operations (MO)

Within each focus area, a set of objectives, supporting strategies, and suggested implementation actions is provided, along with additional information as described below.







TERM	TERM DEFINITION
Objective	A high-level, overarching aim.
Strategy	A major approach to meeting an objective. For most objectives, more than one strategy will be pursued. The strategies are numbered within each focus area using a letter designation shown above.
UCD Bundle	Refers to the numbering system for categories used in the extensive menu of potential GHG-reduction measures in the <i>CAP Technical Report</i> prepared by the UCD Sustainable Design Academy. The strategies selected for this CAP are based on the measures in these “bundles.” The corresponding “bundle” numbering is included here to help interested CAP users locate corresponding background information in the <i>CAP Technical Report</i> , such as the standards of measurement used to calculate GHG reduction amounts, estimated costs and payback period, ease of implementation, and potential implementation and tracking strategies.
GHG Reduction	The estimated amount of the GHG reduction, in MTCO ₂ e, that may be gained by implementing a strategy. Calculating the emissions reductions for a strategy requires making assumptions about the extent of implementation, future opportunities and costs, and individual behavioral changes. It is difficult to assign a precise reduction amount to a strategy given the uncertainties associated with these assumptions. Therefore, the amounts are provided in round numbers.

Percentage of GHG Reduction Target The percentage of Woodland’s total 2020 GHG emission reduction target of 60,000 MTCO₂e estimated to be achieved if a strategy is fully implemented. (Note that the total of all percentages shown in the CAP may not add up to exactly 100% because of rounding.)







Goals The quantifiable results of implementing a strategy (e.g., number of lights replaced). These are the basis of the total GHG reduction amount and percentage of Woodland’s GHG Reduction Target associated with a strategy.

Action An implementation activity that will be pursued to achieve the GHG-reduction goals of a strategy. A maximum of 10 actions has been selected as the implementation focuses for any strategy.

Each action has one or more of the following focuses:

	Residential		Funding/ Rebates
	Commercial		Education
	New Development		Legislation/ Policy

Each focus area section begins with a summary of objectives and strategies, in which the symbols shown at right are used to designate the amount of the GHG-reduction contribution of each strategy.

GHG Reduction (MTCO ₂ e)	% of Woodland Reduction Target	Symbol
1-3,000	0-5%	
3,000-6,000	5-10%	
6,000-9,000	10-15%	
9,000-12,000	15-20%	
> 12,000	> 20%	
<i>Important to overall CAP success, but not quantifiable</i>		

Energy

Although community use of electricity and gas is expected to make up only about 30% of community GHG emissions in 2020, a major portion of the progress toward meeting Woodland’s 2020 GHG reduction target can be achieved through individual actions to (1) reduce energy demand and (2) increase the proportion of energy obtained from renewable sources. Many factors make it possible to achieve significant shorter-term reductions in energy-related GHG emissions: rapidly improving technologies; strides in the manufacture of more energy-efficient building materials, lights, appliances, and equipment; and financing mechanisms providing for greater affordability.

The energy strategies, if fully implemented, could reduce GHG emissions by an estimated 37,400 MTCO₂e, or 62% of Woodland’s GHG-reduction target.






See the Urban Forest and Open Space section for energy-reduction strategies related to increased shade tree canopy.

See the Water and Waste section for energy-reduction strategies related to reduced water use.




Strategy Summary

OBJECTIVE 1: Reduce Energy Use by One-Fourth to One-Third

E-1	Lighting Upgrades	
E-2	Appliance/Equipment Upgrades	
E-3	Comprehensive Building Efficiency	
E-4	Improved Building Temperature Controls	
E-5	Energy Conservation Education	


OBJECTIVE 2: Obtain 40 MW of Electricity from Renewable Sources

E-6	Renewable Energy Generation and Procurement	
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Proportion of Total GHG Reduction Target **62%**

Objective I: Reduce Energy Use by One-Fourth to One-Third

Strategy E-1: Lighting Efficiency Upgrades

Percentage of GHG Reduction Target: 11%
GHG Reduction: 6,400 MTCO_{2e}
UCD Bundle 1A

Description: Installation of high-efficiency lighting. One-fourth of residential electricity use and one-third of commercial electricity use typically go toward lighting.

- Compact fluorescent lamps (CFLs) and light-emitting diode (LED) bulbs provide the same amount of light (lumens) as incandescent bulbs for as little as 25% the energy use.
- Solar tubes draw on sunlight to light rooms, using no energy.
- Switching from T-12 to T-8 fluorescent tubes and using occupancy/vacancy sensors on light switches can provide significant energy savings in commercial applications.

Goals:

- 6,000 new and existing homes switch from incandescent to CFL or LED lighting (1,200 MTCO_{2e})
- 15,000 new and existing homes use improved incandescent lighting (1,000 MTCO_{2e})
- Two-thirds of commercial sector improves lighting efficiency by 75% (LEDs, CFLs, T-installs, occupancy/vacancy sensors, bi-level lighting) (4,200 MTCO_{2e})

Actions:



Support a holiday program to encourage residents to exchange traditional light strings for LED lights.



Require that new construction include LED lights, solar tubes or skylights in windowless internal rooms, and consideration of room orientation to maximize the use of natural lighting.



Encourage the creation of voluntary programs through public-private partnerships in which trained personnel perform home visits and implement a checklist of free or low-cost energy-efficiency measures, including installing energy-efficient light bulbs and adjusting thermostats on hot water heaters, for low-income residents.



Provide/promote rebates for exchange of incandescent bulbs for LED bulbs.



Use forums, information sheets, and other forms of educational outreach to promote understanding of the benefits of new lighting technologies, such as CFLs, LEDs, and solar tubes.



Provide information on lighting upgrades, rebates, and energy-efficiency assistance from Yolo Energy Watch and other programs as part of the business license renewal process.


Encourage community participation in international “turn-off-the -lights” days.



Support regulations and legislation that establish improved industry standards for lighting technologies.



Strategy E-2: Appliance/Office Equipment Upgrades



Percentage of GHG Reduction Target: 1.5%
 GHG Reduction: 900 MTCO₂e
 UCD Bundle 1B

Description: Replacement of appliances and office equipment with Energy Star-rated models. Energy Star is the federal government-backed symbol for identifying energy-efficient products. For products to be given the Energy Star rating, they must contribute to significant energy savings that are verifiable through testing. If they cost more than conventional, less energy-efficient counterparts, it must be shown that consumers can recover the additional costs through utility bill savings in a reasonable period of time. Examples of items that may be replaced with Energy Star models, listed from highest to lowest in terms of typical GHG reductions, are: water heater, vending machine, copier, refrigerator, printer, dishwasher, water cooler, computer, clothes washer, and monitor.

Goals:

- One-fourth of households replace a major household appliance (e.g., water heater, refrigerator, washer, dryer, dishwasher) or computer equipment with a more energy-efficient model (600 MTCO₂e)
- Half of businesses upgrade a vending machine, refrigerator, water cooler, and/or office equipment (e.g., computers, monitors, printers, photocopiers) with more energy-efficient models (300 MTCO₂e)

Actions:



Support/promote group purchasing programs for discounted energy-efficient appliance and equipment replacements.

Promote residential programs such as PG&E's Energy Savings Assistance Program to help low-income homeowners and renters manage energy use and energy costs through free or low-cost upgrades to more energy-efficient appliances, lighting, and building features.



Conduct education and outreach to promote rebates, incentives, and other programs as they become available, and use available information on rebates used by consumers to determine where to focus education and outreach.



Provide information on equipment upgrade benefits, rebates, and energy-efficiency assistance from Yolo Energy Watch and other programs as part of the business license renewal process.





Strategy E-3: Comprehensive Building Efficiency



Percentage of GHG Reduction Target: 11%
 GHG Reduction: 6,500 MTCO₂e
 UCD Bundle 1C

Description: Improvements of overall building performance through energy-efficient retrofits, and new construction incorporating advanced energy-efficiency features. All new buildings in California must meet the energy-efficiency standards in Title 24, Part 6 of the California Code of Regulations, including CalGreen standards for energy efficiency and water conservation. Typical elements in building energy-efficiency are:

- Building air sealing
- Duct sealing and duct replacement
- Ensuring that appropriate types of attic, wall and/or floor insulation are used
- Upgrading and/or insulating water heaters
- Ensuring proper functioning and efficiency of heating and air conditioning systems
- Reducing heat loss through and around windows

Goals:

- Weatherization upgrade implemented for 2,000 low-income homes (2,000 MTCO₂e)
- Energy-efficiency retrofits implemented for 1,000 homes (1,200 MTCO₂e)
- Construction of 250 energy-efficient affordable housing units (400 MTCO₂e)
- Energy-efficiency retrofits and retro-commissioning implemented for 4 million square feet of commercial (approx. 20% participation) (2,900 MTCO₂e)

Actions:

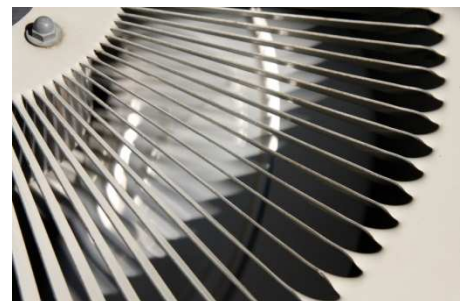


Promote the provisions for sustainable construction and development practices contained in the CalGreen Code, such as using cool roofs, vegetation, and permeable or other special pavements where appropriate to reduce heat-island effects on and around buildings.



With other local jurisdictions, establish and promote turn-key property-assessed clean energy (PACE) programs, group purchasing discount programs, and other available financing programs that can be used by property owners for affordable residential energy efficiency retrofits.

Promote participation in Energy Upgrade California, Yolo Energy Watch, and other state, federal, and utility incentive programs for improving home and business energy efficiency.



Promote PG&E's Energy Partners Program, the state Weatherization Assistance Program, and other programs providing free or low-cost weatherization measures to low-income residents.

Promote the U.S. Department of Housing and Urban Development Energy Efficient Mortgage (EEM) program and similar programs that assist buyers in purchasing homes meeting energy-efficiency criteria.

Consider providing assistance through Community Development Block Grant funds, special taxes, or other special funds to assist low-income homeowners in installing energy-efficiency upgrades.



Encourage realtors to promote energy and water use efficiency of properties on resale and/or to adopt a voluntary rating system and provide energy-efficiency information upon property resale.


Promote and provide information on energy-efficiency upgrades for historical structures that are consistent with maintaining historical integrity.

Consider citywide application of energy conservation policies in the Spring Lake Specific Plan such as the use of energy-efficient air conditioners, light-colored roofing materials, photovoltaic energy systems, and Energy Star appliances.





Strategy E-4: Improved Building Temperature Controls



Percentage of GHG Reduction Target: 2%
 GHG Reduction: 1,400 MTCO₂e
 UCD Bundle 1D

Description: Improvements to climate control in residences and businesses through measures including:

- Installing reflective roofing (cool roofs)
- Replacing heating and cooling equipment with more energy-efficient systems and models
- Optimizing building temperature controls
- Using natural factors in new buildings to maintain comfortable conditions

Goals:

- Installation of 500 cool (reflective) residential roofs (250 MTCO₂e)
- Upgrades of residential heating and cooling equipment - 500 air conditioning units, 2,000 heating, ventilation, and air conditioning (HVAC) units, 100 conversions from electric to gas heat (500 MTCO₂e)
- Installation of 1 million square feet of cool (reflective) roofs on commercial properties (5% participation) (300 MTCO₂e)
- Upgrades of commercial heating and cooling equipment - 500 air conditioning units, HVAC fans for 1,000,000 square feet; chillers for 1,000,000 square feet (400 MTCO₂e)

Actions:



Encourage innovative site designs and building orientations for new construction that incorporate passive and active solar designs and natural cooling techniques.

Require that natural temperature-control factors, such as cross ventilation, wind protection, and shade, be considered in site and building design for new construction.



Promote PG&E’s Energy Partners Program and other programs that provide low-income customers with free energy-efficient appliances.



With other local jurisdictions, establish and promote local turn-key PACE programs, group purchasing discount programs, and other available financing programs that can be used by property owners for affordable climate-control building and equipment upgrades.

Promote utility, state, and federal rebate and assistance programs.

Promote participation in Energy Upgrade California, Yolo Energy Watch, and other state, federal, and utility incentive programs for improving building climate controls.



Provide information on the benefits of energy-efficiency upgrades, rebates, and energy-efficiency assistance from Yolo Energy Watch and other programs as part of the business license renewal process.



Strategy E-5: Energy Conservation Education



Percentage of GHG Reduction Target: 2%
 GHG Reduction: 1,200 MTCO₂e
 UCD Bundle 1C

Description: Educational efforts to induce permanent energy use reduction through conservation. Examples are:

- Adjusting thermostats a few degrees down in the winter and up in summer
- Keeping shades closed in summer to reduce indoor heat
- Using less hot water for showers, laundry, and washing dishes
- Turning off lights that aren't being used
- Unplugging "vampire" equipment that isn't being used (i.e., electronic equipment that consumes electricity even when not in use)
- Using low-flow showerheads and faucets to help reduce hot water use
- Using ceiling fans
- Maintaining clean air filters to ensure heating and cooling systems run efficiently

Goals:

- Achieve lasting reductions in home energy conservation in the equivalent of 500 homes through energy-conservation campaigns (300 MTCO₂e)
- Achieve lasting energy conservation in 150 businesses through energy-conservation campaigns (900 MTCO₂e)

Actions:



Conduct or promote competitions and rewards for reducing household energy use.



Promote recognition programs for energy-efficient businesses.



Provide information on energy conservation, the benefits of energy-efficiency upgrades, rebates, and energy-efficiency assistance from Yolo Energy Watch and other programs as part of the business license renewal process.

Provide information to educate the public on the connection between water conservation and energy conservation.


Work with PG&E and other organizations as appropriate to establish a pilot program that provides customers with access to real-time data on energy use and uses analytical software that provides information about different energy loads, "vampire" appliances, and anomalies in energy use.



Partner with Yolo Energy Watch, PG&E, and other organizations to conduct public outreach and education campaigns to encourage energy conservation.

**Objective 2:
Obtain 40 MW of Electricity from Renewable Sources**

Strategy E-6: Renewable Energy Generation and Procurement

Percentage of GHG Reduction Target: 35%
 GHG Reduction: 21,000 MTCO₂e
 UCD Bundle 2

Description: Production or procurement of electricity for residential or business use through solar PV, wind, and geothermal systems. The following major renewable energy options are currently available

- Individual solar PV installations – Rooftop PV systems and PV parking shade structures are within reach of more community members as PV technologies have improved, costs have reduced significantly, and more accessible options for up-front financing have become available.
- Community solar – A PG&E-administered program that allows businesses and individuals to buy shares in renewable energy developments and receive credit on their electric bills for the use of the renewable energy they generate. Community solar was developed through SB 43 (2013) to allow renters and property owners who are unable to install solar on their own properties to obtain renewable energy through PG&E and the other major utilities.
- Green Certificates, or Renewable Energy Certificates – These are tradable commodities that represent the environmental value of renewable energy generated by one party that may be sold to another party.
- Community Choice Aggregation (CCA) – CCA enables California cities and counties to supply electricity to the customers within their borders. A CCA is responsible for providing the energy, which it either generates or procures from other sources, but does not own the transmission and delivery systems. Because CCAs can choose the sources of their power mix, many communities look to CCA as a mechanism for increasing the amount of renewable energy they use.

Goals:

- Solar photovoltaic (PV) energy or green electricity purchase for 5,000 existing and new homes at an average size of 2.7 kW (6,800 MTCO₂e)
- Solar hot water heaters for 2,000 homes (1,400 MTCO₂e)
- 25 MW of solar PV or green electricity purchases for businesses, institutions, and schools (12,500 MTCO₂e)
- Wind turbines providing 500 kW of commercial electricity use (300 MTCO₂e)
- 100 geothermal heat pumps for heating and cooling commercial properties (50 MTCO₂e)

Actions:



Encourage initial residential sizing of 3 kW or larger to accommodate EV charging and achieve net zero carbon footprint without future need to increase inverter.

Increase the percentage of homes in new development that are solar ready and/or that have solar water heaters, up to 100% by 2020.



With other local jurisdictions, establish/promote local turn-key PACE programs, group purchasing discount programs, and other available financing programs that can be used by property owners for affordable renewable energy systems.

Promote participation in Energy Upgrade California, Yolo Energy Watch, and other state, federal, and utility incentive programs for improving home and business energy efficiency, including installing solar PV or wind energy systems.



Support incentives to reduce the cost of solar hot water systems.

Balance open-space maintenance with solar opportunities by promoting the installation of solar systems on existing development or in dual-use applications, such as parking lots, building roofs, and stormwater detention basins.

Promote the expansion of community solar opportunities to enable greater access to solar power for renters, those with shaded roofs, and those who choose not to install a residential system on their home for financial or other reasons.

Support legislation and incentives that promote the development and implementation of technologies for distributed renewable energy generation—the production of renewable energy in small quantities near the point of use rather than in large amounts in a few places—that increase local access to renewable energy.

Work with other local jurisdictions to explore opportunities for establishing a countywide or regional CCA that obtains all of its power or a high proportion of its power from renewable sources.



Tools for Measuring Progress

- PG&E usage data for residential and commercial sectors
- Yolo Energy Watch program participation information
- PACE program participation
- City building permit information on solar installations, cool roofs, and energy upgrades
- Participation in PG&E, federal, and state incentive programs, where information is available
- City data on numbers of housing units constructed with energy efficiency features that exceed the requirements of the CalGreen Code

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Transportation and Land Use

The two major approaches to reducing transportation-generated GHGs involve (1) reducing motor vehicle use and (2) replacing gasoline and diesel vehicles having higher GHG emissions with vehicles that have lower or zero GHG emissions. The latter include electric vehicles (EVs), hybrid cars and trucks, smaller vehicle models, and vehicles that run on biofuels and compressed natural gas (CNG).

Essential to reducing the use of passenger vehicles locally and regionally are practices and infrastructure that promote ease and convenience of pedestrian, bicycle, and transit travel for daily trips and that situate residents in proximity to workplaces, goods and services, and recreational opportunities. Transportation and land use strategies for GHG reduction are closely linked because of the influence land use policies can have on types, rates, and patterns of growth; the distances community members need to travel for essential services; and the ease or difficulty of different modes of travel.




For this reason, transportation and land use strategies are presented together in this section.

The transportation and land use strategies, if fully implemented, could reduce GHGs by an estimated 18,000 MTCO₂e, or 30% of Woodland’s GHG-reduction target.




Although land use strategies are critical to the success of transportation-related GHG-reduction objectives, to avoid double-counting of GHG-reduction benefits, quantified reductions are assigned only to the strategies under Objectives 2 and 3.

Strategy Summary

OBJECTIVE 1: *Implement Land Use Policies to Support Reduced Motor Vehicle Use*

- T/LU-1 Complete Streets Program 
- T/LU-2 Infill Development, Redevelopment, and Repurposing 
- T/LU-3 Smart Growth in New Development 

OBJECTIVE 2: *Reduce Vehicle Trip Mileage and Equipment Idling Emissions by 1%*

- T/LU-4 Reduced Motor Vehicle Trips 
- T/LU-5 Increased Mass Transit Use, Walking, and Bicycling 
- T/LU-6 Reduced Emissions from Vehicle Idling and Other Equipment 

OBJECTIVE 3: *Replace Gas and Diesel Vehicles with Alternative-Fuel Vehicles*

- T/LU-7 Increased Use of Alternative-Fuel Vehicles 

Proportion of Total GHG Reduction Target **30%**

Objective I: Implement Land Use Policies to Support Reduced Motor Vehicle Use



Strategy T/LU-1: Complete Streets Program



*Important to overall CAP success, but not quantifiable
(see Objectives 2 and 3)
UCD Bundles 9 and 11*

Description: Infrastructure designs and measures that provide for safe, convenient walking, bicycling, and transit use.

“Complete streets” is a planning term for the practice of providing for a combination of elements in roadways that enhance convenient walking, bicycling, and public transit use in addition to passenger vehicle travel. Elements considered may include, for example:

- Streets that include sidewalks
- Bike lanes or wide paved shoulders
- Comfortable and accessible public transportation stops
- Frequent and safe crossing opportunities
- Median islands
- Accessible pedestrian signals
- Curb extensions
- Narrower travel lanes

See the Urban Forest and Open Space section for actions related to reducing the heat island effect on roadways and opportunities for non-fossil fuel transportation through increased shading.

Actions:



Partner with the University of California, Davis, and Yolo County to develop bicycle commute routes between the campus and points within Woodland.

Enhance walking and biking opportunities through downtown by improving alleys for pedestrian and bicycle use.

Consider reducing parking space requirements for businesses that provide bike infrastructure improvements.

Adopt a “Complete Streets” program that provides safety and convenience for all forms of transportation, including passenger vehicle, bicycle, transit, and pedestrian travel.

Amend current “level of service” (LOS) road and transportation criteria to include consideration of pedestrian, bicycle, and bus transit travel modes by using multimodal LOS criteria.



Develop a network of bicycle lanes and paths that provide safe and convenient routes for city residents to travel to and from homes and daily destinations.

Update the City’s bicycle master plan to incorporate new concepts and funding strategies for bicycle route development, including consideration of modifying existing streets to better accommodate space for safe bicycle use (e.g., creating one-way streets), creating off-street bicycle paths, and providing connectivity with bike routes outside of Woodland.



Strategy T/LU-2: Infill Development, Redevelopment, and Repurposing



*Important to overall CAP success, but not quantifiable
(see Objectives 2 and 3)
UCD Bundle 11*

Description: Adoption and implementation of land use policies and zoning that promote infill development, mixed use of commercial areas, and other techniques to reduce motor vehicle travel by locating housing near services, transit stops, safe pedestrian and bicycle facilities, and other amenities.

Actions:



Recognize and implement the City's Urban Limit Line (ULL) ordinance by reevaluating residential land use densities, housing policies, and zoning to determine the potential for increased residential densities for infill sites, undeveloped land, and land zoned for commercial uses within the permanent ULL.

Promote mixed uses in new development and redevelopment projects, including using upstairs spaces in the downtown area for retail, entertainment, office, and residential uses.



Consider identification of areas currently zoned as residential to become "neighborhubs" characterized by twin goals of defined increases in density and building height as well as location of basic services and amenities within walking distance.

Study the potential for repurposing some space from existing uses such as parks for designation as innovative neighborhood commercial permitted uses, such as cafés or locations for nearby residents to pick up goods ordered from local businesses.

Consider the use of designated portions of public areas or other City land for community gardens.



Encourage the redevelopment and adaptive reuse of vacant or underutilized lots with buildings including second stories for retail, residential, or office uses.

Encourage pedestrian and bicycle-oriented design in the allocation of space, building size and placement, site enhancement, open space design, connection to pedestrian/bikeways, and site amenities such as plazas, courtyards, and breezeways in commercial redevelopment.



Support applications for affordable housing funds from agencies that reward and incentivize good planning, such as infill housing and housing built close to jobs, transportation, and amenities.

Increase allowable residential density and building height standards.





Strategy T/LU-3: Smart Growth in New Development



*Important to overall CAP success, but not quantifiable
(see Objectives 2 and 3)
UCD Bundle 11*

Description: Adoption and implementation of land use policies and zoning that promote new development that typically includes:

- Higher-density development
- Mixed residential and commercial uses
- Essential services within short travel distances
- Transit-oriented, walkable, and bicycle-friendly land uses
- The “smart growth” concept may include transit-oriented development (TOD), which consists of a mixed-use residential and commercial areas designed to maximize access to, and encourage the use of, public transport. TOD often centers around a transit station or stop that is within one-quarter to one-half mile from the surrounding housing.

Actions:



Support applications for affordable housing funds from agencies that reward and incentivize good planning, such as infill housing and housing built close to jobs, transportation, and amenities.



Plan for new residential developments in coordination with plans for the provision of transit services.

Emphasize mixed uses in new residential developments.

Require new commercial development to include bicycle parking, electric vehicle charging stations, and/or other incentives for non-fossil fuel transportation.

Design new neighborhoods so that daily shopping errands can generally be completed within easy walking and biking distances.



Encourage pedestrian and bicycle-oriented design in the allocation of new commercial space, building size and placement, site enhancement, open space design, connection to pedestrian/bikeways and site amenities such as plazas, courtyards, and breezeways.

Adopt policies that encourage building smaller houses.

Establish a standard for a “10-Minute Neighborhood” for new residential developments such that residents are no more than a 10-minute walk from grocery stores, parks, schools, and commercial enterprises that provide neighborhood-scale access to daily needs.



Objective 2: Reduce Vehicle Trip Mileage and Equipment Idling Emissions by 1%

Strategy T/LU-4: Reduced Motor Vehicle Trips

Percentage of GHG Reduction Target: 1.5%
GHG Reduction: 900 MTCO₂e
UCD Bundles 5 and 12

Description: Shortening or elimination of total passenger and delivery vehicle trips by:

- Reducing work commute trips
- Increasing carpooling and car sharing
- Increasing opportunities for residents to shop in Woodland
- Increasing local markets for locally produced goods

Reducing vehicle trips can also improve quality of life by reducing traffic congestion, air pollution and associated health effects, and travel-related costs.

Goals:

- 5,000 residents regularly carpooling, car sharing, and telecommuting (900 MTCO₂e)

Actions:

Work with the Yolo-Solano Air Quality Management District, neighboring jurisdictions, and other organizations to motivate local and regional employers to provide opportunities for employee telecommuting and alternative work schedules (e.g., 9/80 schedules) that reduce work commute trips.

Work with the local Chamber of Commerce and other business groups to achieve membership of 10% of businesses in the Yolo Transportation Management Association or offer a similar employer program that provides incentives to employees for reducing commute trips (e.g., participation in carpools) and guarantees employees a ride home in case of emergency.



Partner with Yolo Farm to Fork, farmers markets, and other local agencies and organizations to promote connections with local agricultural producers and the sale and consumption of locally produced foods.



Promote the Department of Housing and Urban Development Location Efficient Mortgage (LEM) program and similar programs that assist home buyers in purchasing homes that meet criteria for proximity to services and transit systems.



Establish a program to engage the community in efforts to reduce vehicle miles traveled, including setting specific goals for participation, identifying and promoting programs, and rewarding positive results.




Encourage telecommuting and live/work arrangements through policies and regulations that allow home occupations, home offices, and live/work uses, provided they are compatible with surrounding neighborhood uses and do not cause significant negative impacts.





Strategy T/LU-5: Increased Mass Transit Use, Walking, and Bicycling



Percentage of GHG Reduction Target: 2%
GHG Reduction: 1,500 MTCO_{2e}
UCD Bundle 9

Description: Reductions in motor vehicle trips through increased incentives and opportunities for mass transit use and safe bicycle and pedestrian travel as alternatives to automobile use.

Goals:

- 3,000 more schoolchildren bicycling/walking (200 MTCO_{2e})
- 7,000 more employee trips per week accomplished by bicycling to work (700 MTCO_{2e})
- Increase in bus ridership by 1,000 regular users (600 MTCO_{2e})

Actions:

Provide a reduction of parking requirements to employers who effectively plan for and implement programs for alternative commute transportation.

Work with the local Chamber of Commerce and other business groups to achieve membership of 20% of businesses in the Yolo Transportation Management Association or a similar employer program that provides incentives to employees for reducing commute trips by biking or walking to work and guarantees employees a ride home in case of emergency.

Partner with the Chamber of Commerce to encourage employers to provide bike lockers, showers, and other amenities or incentives that encourage employees to cycle or walk to and from work.

Require new multi-family developments to provide secure bicycle storage options and/or bicycle-share programs.



Work with the Yolo-Solano Air Quality Management District and the Yolo County Transportation Authority to provide free or reduced cost bus transportation for students.

Support the continued viability of Community Care Car to provide vanpool service for elderly residents.

Support and promote efforts to increase bicycle use through the provision of free or low-cost helmets and renovated bicycles to low-income residents, bicycle repair and safety clinics, and information on safe bicycle routes.


Work with transit operators to increase mass transit use by identifying mechanisms for encouraging increased ridership, including making bicycle racks available on all buses, and creating and implementing comprehensive public information campaigns.

Partner with schools and Yolo County Health Department to promote biking and walking by disseminating “Safe Routes to Schools” maps and information, and encouraging creation of a citizen’s committee to promote bicycle and pedestrian access to schools.

Create and disseminate educational materials and information for residents and visitors promoting safe and convenient pedestrian and bicycle transportation as alternatives to automobile travel, including bicycle route maps, walking tour information, and “wayfinding signs” that indicate distances between points of interest.



Strategy T/LU-6: Reduced Emissions from Vehicle Idling and Other Equipment



Percentage of GHG Reduction Target: 1%
GHG Reduction: 600 MTCO₂e
UCD Bundle 5, 6, and 8

Description: Measures to reduce the use of small gas-powered equipment and to reduce vehicle idling, including compliance with state law restricting idling times for trucks and heavy equipment.

Goals:

- 500 gas lawnmowers replaced with electric models (unknown/minor benefit)
- Idling of heavy equipment and trucks reduced - 250 vehicles (600 MTCO₂e)



Actions:



Promote Yolo-Solano Air Quality Management District rebates for reducing the use of gas-powered landscape equipment.



Identify businesses with fleet vehicles that are subject to state idling restrictions and provide information to promote compliance with these requirements.



Publicize information on idling-time regulations to promote citizen awareness and assistance in advocating for compliance.



Conduct a study and prepare an implementation plan as appropriate for installing roundabouts at intersections or using other traffic control mechanisms that maintain or improve traffic safety while reducing idling time for vehicles.




Encourage drive-through restaurants, pharmacies, and other drive-through services to post requests or requirements for vehicle engines to be shut off during extended waiting times.

Objective 3: Replace Gas and Diesel Vehicles with Alternative-Fuel Vehicles

Strategy T/LU-7: Increased Use of Alternative-Fuel Vehicles





Percentage of GHG Reduction Target: 25%
GHG Reduction: 15,000 MTCO₂e
UCD Bundles 7, 10, and 13

Description: Replacement of gasoline- and diesel-fueled vehicles with others that run on alternative fuels that have reduced-GHG or zero-GHG emissions:

- Flexible fuel vehicle – uses gasoline or E85, a mixture of 85% ethanol and 15% gasoline
- Hybrid or plug-in hybrid electric vehicle (PHEV) – powered with electricity and gasoline
- Electric vehicle (EV) – runs on electricity alone
- Compressed natural gas (CNG) vehicle – runs on compressed natural gas
- Fuel cell vehicle (FCV) – uses pressurized hydrogen to power a fuel cell, which then generates electricity to run the vehicle



Analyze, design, and implement a “Neighborhood Electric Vehicle” (NEV) transportation plan linking streets and destinations to encourage NEV use.

Establish preferred parking for alternative fuel vehicles in downtown parking lots.

Install or support the installation of EV charging stations distributed throughout downtown and major shopping locations.

Support expansion of the West Coast Green Highway through the installation of EV fast-charging infrastructure along I-5 and other major travel routes.

Goals:

- 250 EVs (1,400 MTCO₂e)
- 4,000 hybrid vehicles (13,200 MTCO₂e)
- 250 CNG vehicles (400 MTCO₂e)

Actions:



Encourage developers to include EV charging infrastructure in new residential developments.



Provide public education about alternative-fuel vehicles, highlighting options and benefits and identifying fueling/charging locations.



Provide organizations and businesses that have “fleets” of more than 12 vehicles with information about transportation fuel alternatives.

Tools for Measuring Progress

- Employer data on vehicle trip reduction
- Yolo Transportation Management Association participation data
- Bus ridership data
- Data on children walking/riding bicycles
- Total mileage of bicycle lanes established
- AQMD rebates for retiring gas-powered landscaping equipment
- Car registrations and rebates for alternative-fuel vehicles

Urban Forest and Open Space

With proper species selection, placement, and management, urban trees provide many benefits. Trees help reduce GHG emissions in several ways:

- **Building shade** – By shading buildings, trees reduce indoor heat in summer and the need to use energy for air conditioning.
- **Pavement shade** – Asphalt can store and hold a large amount of heat. Shading pavement reduces the radiant energy these surfaces absorb, thereby reducing the overall “heat island” effect. This, in turn, reduces the need for vehicle and building air conditioning, prolongs pavement life, and encourages more walking and bicycle riding by making streetscapes more attractive and comfortable.
- **Insulation** – Trees serve as wind breaks, reducing the movement of outside air into interior spaces and conductive heat loss, for example, through glass window panes.
- **Transpiration** – Plant transpiration converts moisture to water vapor, cooling the air by using solar energy that would otherwise heat the air.
- **Carbon sequestration** – Trees capture and store CO₂ from the atmosphere, a process referred to as “carbon sequestration.” Different tree species provide different levels of carbon storage.

In addition to reducing energy use and GHGs, trees provide other benefits that are difficult to quantify. A 2010 study of Woodland’s urban forest resources, City of Woodland, California Urban Forest Resource Analysis and Community Canopy Study (Davey Resource Group), estimated that for every \$1.00 spent on Woodland’s public trees, the community receives \$1.50 in benefits through energy savings, air quality improvements, stormwater interception, atmospheric CO₂ reductions, and aesthetic contributions.

At the time of the study in 2010, the City maintained 13,140 trees, a large percentage of which were newly planted. The number of non-City trees was not determined. The study found that Woodland’s overall tree canopy covered 8.4% of the incorporated land area, and noted that this is far short of the optimal urban tree canopy cover of 25%.

The urban forest and open space strategies, if fully implemented, could reduce GHG emissions by an estimated 2,300 MTCO₂e, or 4% of Woodland’s GHG-reduction target.

Strategy Summary

OBJECTIVE 1:

Increase Tree Canopy by 50% by 2020

UF-1 Urban Forest Management Plan



UF-2 Increased Tree Planting



UF-3 Maintenance of Existing Trees



UF-4 Public Education



OBJECTIVE 2: *Maintain and Enhance Open Space Environmental Values*

UF-5 Open Space Preservation



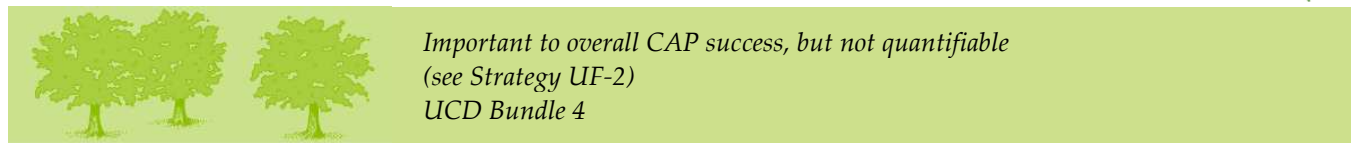
Proportion of Total GHG Reduction Target

4%



Objective I: Increase Tree Canopy by 50% by 2020

Strategy UF-1: Urban Forest Management Plan



Description: Development and adoption of a policy framework and comprehensive approach to planting and managing City trees.

An urban forest management plan will establish a systematic approach to preserving and enhancing Woodland’s more than 13,000 trees. A healthy tree population needs species and age diversity and requires proactive maintenance and appropriate planning. The objectives for establishing and managing trees in an urban setting are diverse and may include:

- Improving aesthetic appeal of streetscapes
- Eliminating public safety hazards
- Preventing disease and pest infestations
- Reducing conflicts with utilities and damage to sidewalks and streets
- Enhancing recreational and educational opportunities
- Providing energy savings
- Increasing carbon sequestration and improving air quality

Priorities may vary for downtown, parking lot, median, park, open space, heritage, and residential street trees.

An urban forest management plan typically provides a comprehensive program that addresses these objectives and establishes numerical goals, planting and maintenance techniques and schedules, management responsibilities, monitoring needs, budget and personnel needs, relationship of the plan to other planning documents and ordinances, and strategies for adjusting priorities based on changing needs or resource constraints.

Plan establishment and implementation will be critical to optimizing the potential GHG reductions associated with tree planting and maintenance. However, to avoid double-counting these benefits, they are quantified only under Strategy UF-2.

Actions:

Coordinate with the Woodland Tree Foundation to develop and adopt an Urban Forest Management Plan (UFMP) by January 2016 aimed at expanding canopy cover from 8.4% to 25% by 2035 and with objectives that include GHG reduction, air quality improvement, energy conservation, stormwater runoff management, and non-interference with utility lines.

In the UFMP, include consideration of planting mediums, planting techniques, and soil amendments that can provide multiple benefits, such as the use of biochar as a soil amendment with potential carbon sequestration capability and planting systems that intercept and store or absorb runoff.

Identify all potential public tree planting sites along streets and in parking lots within the city limits, classify by appropriate tree size, and prioritize for planting with appropriately sized trees.


Establish tree planting goals for annual net canopy gain of 0.5%-1%, a methodology and schedule for communitywide canopy measurement, a policy for tree replacement, and a process for determining net tree gain.

Develop a sustainable funding strategy as part of the UFMP, and pursue all available funding opportunities (e.g., grants, cap-and-trade funding).





Strategy UF-2: Increased Tree Planting



Percentage of GHG Reduction Target: 3%
 GHG Reduction: 1,700 MTCO_{2e}
 UCD Bundle 4

Description: Actions to increase tree canopy through planting new trees to increase building shade, increase carbon sequestration, and reduce heat-island effects. The City and the Woodland Tree Foundation have planted an average of 300 trees per year since 2005.

Goals:

- Net increase of 6,000 trees planted along streets, in parking lots, and in open space areas (1,500 MTCO_{2e})
- Net increase of 2,500 building shade trees (200 MTCO_{2e})

Actions:



Partner with PG&E and Woodland Tree Foundation on a major shade-tree planting program for homeowners to reduce energy consumption.



Require home construction in new developments to include two shade trees per home on the east, west, or south face of the home to provide energy savings, with trees located to prevent interference with solar PV production.



Encourage homeowners to plant trees by continuing and promoting the City Tree Rebate Program for street trees and information on tree selection, siting, planting, and care.



Partner with the Woodland Tree Foundation, 4-H, and other service organizations to accomplish larger-scale tree plantings and spread educational information about the benefits of trees.



Promote the planting of larger trees with maximum GHG reduction benefits wherever feasible.

Consider planting City surplus property and/or storm water detention areas in trees with high carbon sequestration potential, as appropriate.

Modify City design standards for parking strips, medians, sidewalk tree plantings, and parking lots to provide for streetscape infrastructure, such as wider planting areas and permeable paving material, that will accommodate large trees and minimize pavement and infrastructure damage caused by tree roots.


Increase the requirements for street trees to shade asphalt and parked cars in new development or redevelopment.

Investigate increasing the requirements for tree coverage in parking lots consistent with installation of solar energy shade structures in parking lots (current City standard is 40% coverage within 10 years).

Require tree planting as part of new development, expanded development, and redevelopment projects wherever feasible.



Strategy UF-3: Maintenance of Existing Trees



Percentage of GHG Reduction Target: 1%
 GHG Reduction: 600 MTCO₂e
 UCD Bundle 4

Description: Actions to implement best practices in tree care and maintenance to:

- Sustain the benefits of existing mature trees
- Expand the canopy of existing young trees
- Maintain the health of future plantings

Appropriate tree care begins with adequate staking, irrigation, training, and pest management of trees in the first years of their establishment. Maintenance throughout the life of a tree includes cyclical pruning and inspection to eliminate hazards, remove diseased or insect-infested wood, maintain stronger branch structure, and prevent obstructions of street signs and interference with utility lines.

According to the 2010 study of Woodland’s urban forest resources by Davey Resource Group, the existing urban forest annually captures and stores about 600 metric tons of CO₂.



Actions:



Make proper tree maintenance a focus of public outreach efforts for property owners, renters, and landscaping professionals to ensure awareness of City tree maintenance guidelines and best management practices for tree care.



Provide business property owners with information on tree benefits and tree maintenance through the Chamber of Commerce and other community organizations.



Prioritize maintenance of mature trees that already provide the highest energy- and GHG-reduction benefits.

Adopt and implement a policy of no net loss of City-maintained trees: Every City tree removed or lost due to disease or other cause must be replaced within one year, either on the basis of trunk diameter or based on offsetting the canopy area of any tree removed with the aggregate canopy area of the replacement tree(s), estimated at two years following planting.

Support code enforcement efforts where needed for ensuring the maintenance of trees and other landscaping in commercial developments.

Update the City of Woodland Heritage Tree Ordinance to incorporate best practices and national standards for care of Woodland’s heritage trees.



Strategy UF-4: Public Education



*Important to overall CAP success, but not quantifiable
UCD Bundle 4*

Description: Efforts to increase overall appreciation of and care for Woodland’s trees.

Public awareness of the benefits and maintenance needs of trees is essential to expanding and sustaining tree canopy. Enhancing public appreciation may embody education and outreach on:

- Environmental benefits
- Economic benefits
- Tree species identification
- Planting and care
- Appropriate species selection
- Diagnosis and treatment of pests and diseases
- Heritage trees and historical significance

Goals are to:

- Enhance community participation in public tree planting events
- Sustain support for the municipal urban forest program
- Increase the number and quality of trees on private property

Actions:



Sponsor public outreach events and efforts through schools and community service organizations to educate the public about the numerous benefits of different tree species and increase appreciation and respect for Woodland’s urban forest, e.g., walking tours of trees, Woodland tree guide, support for Woodland Tree Foundation, memorial tree plantings.

Use the UFMP to initiate a citywide tree public planting and care campaign with Woodland Tree Foundation.

Partner with the Woodland Tree Foundation to provide public information on tree selection, planting, and care through workshops and demonstrations, web information, and printed materials.



Objective 2: Maintain and Enhance Open Space Environmental Values

Strategy UF-5: Open Space Preservation



*Important to overall CAP success, but not quantifiable
UCD Bundle 4*

Description: Maintenance of environmental benefits and enhancement of community appreciation of open space areas to minimize the potential for development sprawl.

Managed open space areas include the East Detention Pond at County Road 102 and Farmers Central Road, the alkali grasslands preserve lands east of County Road 102, and the old City of Woodland landfill and regional park site.



Actions:



Promote public understanding and appreciation of habitat areas (e.g., alkali grassland preserve, east detention pond) through outreach materials, interpretive information, and tours.

Prevent the loss of agricultural land and other open space to development by maintaining Woodland’s Urban Limit Line.



Preserve open space from development of solar farms by focusing the installation of solar arrays on rooftops, developed land, and where solar would be compatible with an existing or intended use (e.g., stormwater detention basins).

Support legislative efforts to provide credit and incentives for agricultural land preservation.

Tools for Measuring Progress:

- City data on tree removal, planting, and condition
- Woodland Tree Foundation data
- Canopy cover measurements
- Tree inventories
- Voluntary resident reporting

Water and Waste

The delivery of water to community members requires energy at the municipal operations level for pumping and treatment. Water used indoors is discharged to the sanitary sewer system and then processed at the City’s wastewater treatment facility. In addition, using hot water for washing dishes and clothes and showering requires the use of energy to heat the water. Therefore, reductions in water use can translate into reductions in energy consumption associated with both water delivery and wastewater treatment in municipal operations and energy use at the individual building level, with associated reductions in GHG emissions.

Solid waste contributes to GHG emissions mainly through its decomposition at landfills. GHG emissions associated with solid waste were not included in the calculations documented in the CAP Technical Report because the City does not control local landfill operations. Yolo County’s climate action planning documents account for these emissions. Even though no waste-related GHG reductions are attributed to Woodland in this CAP, waste-reduction strategies are included in this section to address community members’ concerns about Woodland’s contributions to regional GHGs.

The water and waste strategies, if fully implemented, could reduce GHG emissions by an estimated 200 MTCO₂e, or 0.3% of Woodland’s GHG-reduction target.




Strategy Summary

OBJECTIVE 1:
Reduce Per Capita Water Demand 25-30%

W/W-1 Increased Water Conservation 

OBJECTIVE 2:
Achieve 75% Landfill Waste Diversion

W/W-2 Waste Diversion and Recycling 

Proportion of Total GHG Reduction Target **0.3%**





**Objective 1:
Reduce Per Capita Water Demand 25-30%**
Strategy W/W-1: Increased Water Conservation



Percentage of GHG Reduction Target: 0.3%
GHG Reduction: 200 MTCO₂e
UCD Bundle 23

Description: Actions to promote reductions in water use through water conservation awareness and techniques and the use of water-efficient fixtures. Water conservation includes:

- Making behavioral changes to prevent water waste, such as taking shorter showers
- Improving water-use efficiency, for example by adjusting sprinklers to ensure water is going where it is needed
- Upgrading appliances to more water-efficient models
- Reducing demand by replacing landscape plants that have high water needs with drought-tolerant plants
- Making the best use of all available water, for example by capturing rainwater and using it for outdoor watering



Goals:

- 15% reduction in energy use associated with water and wastewater production, delivery, and treatment (200 MTCO₂e)

Actions:



Encourage the creation of voluntary programs through public-private partnerships in which trained personnel perform home visits and implement a checklist of free or low-cost energy-efficiency measures, including installing low-flow showerheads and adjusting thermostats on hot water heaters, for low-income residents.



Continue to provide rebates for low-flow fixtures and other indoor and outdoor water-saving devices and to promote rebates and incentives provided by PG&E and others.

Continue to promote water conservation through targeted leak-detection assistance, education on indoor water-conserving devices and practices, landscape water reduction guidance, web and printed materials, and workshops.

Provide information on water use patterns and comparative water use in utility bills to help water users understand consumption patterns and adjust water use.

Encourage the conversion of turf to low-water plantings in residential and commercial landscapes through workshops, tours, demonstrations, and literature.

Work with real estate agents to provide new homeowners with information on energy and water efficiency tips and assistance programs and to promote using voluntary water audits that can be used in marketing properties.

Demonstrate the use of attractive, drought-tolerant native landscaping at City-owned properties, including transitioning street plantings from grass to water-efficient ground covers or other drought-resistant plants.

Work with Yolo Energy Watch and other programs to educate the public about the connection between water use and energy use.



**Objective 2:
Achieve 75% Landfill Waste Diversion**
Strategy W/W-2: Waste Diversion and Recycling



*Important to overall CAP success, but not quantifiable
UCD Bundle 3*

Description: Methods to reduce landfilled waste through reduction, reuse, recycling, and composting.

State law requires each local jurisdiction to divert at least 50% of its waste from landfills through reuse, recycling, and composting. Legislation passed in 2013 directed the state to achieve a 75% diversion rate for trash by 2020. The main methods for reducing waste are:

- Reduce – minimize waste
- Reuse – repurpose used materials
- Recycle – separate materials to be processed into new products
- Rot – compost organic waste

Actions:

Work with multifamily complex managers to educate tenants about recycling, significantly increase multifamily waste diversion, and reduce contamination of recyclables.

Continue to actively promote backyard composting.

Encourage consumers to consider product life cycles when purchasing goods and to select those that will not eventually contribute to landfill waste.

Encourage local retailers, manufacturers, and construction contractors to donate unused surplus materials and slightly damaged goods to charities that can reuse them, such as Habitat for Humanity ReStores.

Continue to promote a high level of recycling of construction and demolition debris.



Establish residential and commercial programs for the collection of food waste for large-scale processing as compost or into biofuels.

Support the expansion of practical “extended producer responsibility” programs, which would require manufacturers to be responsible for their products that have reached the end of their useful life or that are left unused (e.g., unused pharmaceutical products), removing responsibility from local governments.

Support policies to require reductions in packaging materials used for consumer products.

Tools for Measuring Progress

- City water production data
- City data on metered water consumption
- Waste hauler data
- State waste disposal records
- Data on extended producer responsibility programs

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Public Involvement

The CAP GHG-reduction target is an ambitious one that will take a concerted community effort to achieve. The success of most of the CAP strategies will depend on the combined actions of a great many individuals. Community engagement on the scale that is needed for success will require reliance, in part, on an effort driven by community members to educate and inspire other community members.

Although public involvement is critical to successful CAP implementation, no GHG-reduction totals are presented in connection with the strategies identified in this section because they are already accounted for in relation to strategies and actions in other CAP focus areas that are driven forward through public involvement.



Strategy Summary

OBJECTIVE 1: *Build Community Engagement in CAP Implementation*

PI-1 Citizen-Led Outreach



PI-2 Outreach Materials and Activities



PI-3 Recognition of Business Sustainability Efforts



OBJECTIVE 2: *Measure CAP Implementation Progress and Adjust Actions as Needed*

PI-4 Mid-Point Check and Recommendations



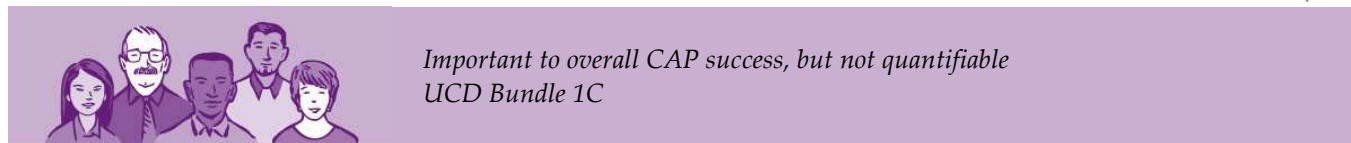
**Proportion of
Total GHG Reduction Target**

N/A



Objective I: Build Community Engagement in CAP Implementation

Strategy PI-1: Citizen-Led Outreach



Description: Establishment of a citizen-led outreach effort that will spearhead public education efforts on climate change and CAP implementation strategies.

A multidimensional outreach effort will be needed to help Woodland’s diverse population realize the benefits of implementing the CAP strategies. Outreach and education activities can be most successful when they arise from within diverse community segments and reflect the perspectives and focuses of those segments. This strategy emphasizes the development of a network of residents, community organizations, and businesses that will be committed to helping inspire others to take actions to improve overall community quality of life through CAP implementation. Participants may include:

- Business associations
- School districts
- Faith-based groups
- Youth organizations
- Civic and community service groups
- Non-profit environmental organizations

Actions:



Establish a self-motivated citizen committee/group that will lead the development and implementation of public education and outreach efforts to support the implementation of selected CAP strategies in coordination with the City, including public forums and community challenges.

Encourage integration of activities and outreach efforts of the citizen committee/group with City events and activities.

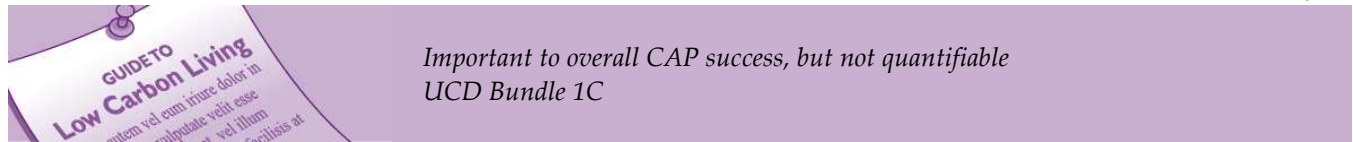
Expand City CAP outreach through social network connections of the committee/group, and encourage the use of social media for sharing ideas about community sustainability.



Provide funding support for efforts of the citizen committee/group that are directly related to achieving CAP goals.



Strategy PI-2: Outreach Materials and Activities



Description: Creation and dissemination of materials that provide an overview of climate change, GHG-reduction guidance, and CAP implementation information.

Relevant background may include information from the following, among others:

- Intergovernmental Panel on Climate Change
- National Climate Assessment
- California Climate Change Portal
- Governor’s Office of Planning and Research
- Institute for Local Government Sustainable Communities program
- City of Woodland CAP web pages

Actions:

Maintain an informational website that provides tools and resources related to climate change science and related technologies, the CAP and CAP Technical Report, and regularly updated information on CAP implementation progress.

Create a “guide to low-carbon living in Woodland” for the City website that provides information on lowering energy use and energy costs; alternative transportation opportunities for city residents, including multi-modal transportation options, transit information, and health and safety benefits; and other information about overall community sustainability.

Produce a “Frequently Asked Questions” document on CAP implementation and update as needed based on ongoing input.

Provide information about the CAP at City facilities that have high community use (City Hall, Community and Senior Center, Library) and distribute to community groups and schools.

Maintain a mailing list and social media feeds that alert subscribers to updated information.

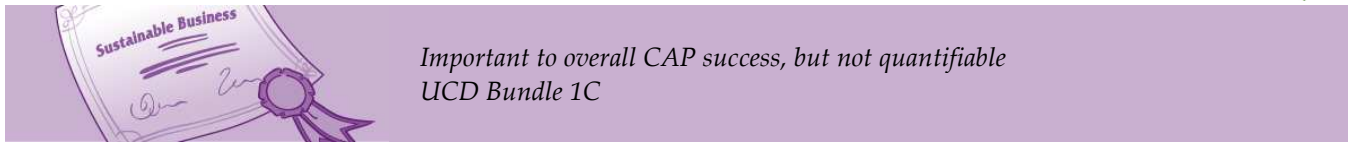
Partner with community groups to hold forums, fairs, and/or workshops focused on climate change and CAP implementation.

Provide regular updates on CAP implementation to the City Council.





Strategy PI-3: Recognition of Business Sustainability Efforts



*Important to overall CAP success, but not quantifiable
UCD Bundle 1C*

Description: Recognition of efforts by businesses to implement best sustainability practices.

Businesses can greatly influence community awareness and acceptance of climate action goals, strategies, and benefits by setting an example through their own practices. Activities helping to promote CAP implementation may take many forms, including:

- Implementing actions to reduce transportation emissions, energy use, water consumption, or waste generation
- Providing incentives, such as low-interest loans or product discounts, for others to implement conservation and GHG-reduction measures
- Investing in the development of new technologies and energy-efficiency measures
- Conducting facility tours or providing support for other educational activities that demonstrate resource conservation
- Conducting employee education
- Developing or participating in certification programs to highlight environmentally sustainable practices

Actions:



Work with the Chamber of Commerce, PG&E, service clubs, and other organizations to promote participation in the Sacramento Area Sustainable Business program or other similar “green practices” certification programs.


Consider establishing a local rewards program for sustainable practices with the Chamber of Commerce, PG&E, and other organizations.





Objective 2: Measure CAP Implementation Progress and Adjust Actions as Needed

Strategy PI-4: Mid-Point Check and Recommendations



*Important to overall CAP success, but not quantifiable
UCD Bundle N/A*

Description: Evaluation and adjustment of CAP implementation actions as needed.

Important elements of a planning process are assessing progress toward plan goals and adapting implementation actions as needed. Implementation strategies may need to be adjusted because of a lack of progress toward one or more objectives or to account for changing conditions or opportunities. Elements of an evaluation of plan progress typically include:

- Using consistent methods for monitoring plan implementation over time
- Setting benchmarks, or yardsticks, for measuring progress toward objectives
- Establishing an agreed-upon course for determining the overall success of implementation
- Identifying the schedule and approach for plan adjustments or for verification that adjustments are not needed

Actions:



With community stakeholders, conduct a mid-point (2017) check on progress toward the CAP goals and the overall GHG-reduction target.

If it is found through the mid-point check that sufficient progress is not being made in CAP implementation, develop a set of additional actions to be implemented from the Additional Actions menu.

Tools for Measuring Progress

- Participation in CAP-related public events
- Number of CAP website visits
- Social media input and other direct citizen feedback
- Business participation in certification programs
- Results of mid-point progress check

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Municipal Operations

Municipal operations that result in GHG emissions include using power to operate City buildings, including the 24-hour operations of the Police Station; lights at sports fields; streetlights and signals; wells; wastewater treatment processes; and stormwater pumps. Vehicles and equipment used in daily operations are sources of direct emissions. The strategies and actions in this section address these main sources as well as the establishment of City policies related to GHG reduction. Although these policies are important to the success of other actions in this CAP, to avoid double-counting of GHG-reduction benefits, no GHG reductions are directly attributed to them here.

The municipal operations strategies, if fully implemented, could reduce GHG emissions by an estimated 2,100 MTCO_{2e}, or 3.5% of Woodland's GHG-reduction target.

See the Urban Forest and Open Space section for all tree-related strategies and actions.



Strategy Summary

OBJECTIVE 1: Incorporate Sustainable Practices into All City Operations

MO-1 Internal Policies



MO-2 Purchasing and Contracting



OBJECTIVE 2: Reduce Emissions from Municipal Electricity Use by 80% or More

MO-3 Increased Energy Efficiency and Use of Renewable Energy



OBJECTIVE 3: Reduce Vehicle Fleet and Employee Commute Emissions

MO-4 Increased Use of Alternative-Fuel and Fuel-Efficient Vehicles



MO-5 Reduced Motor Vehicle Use



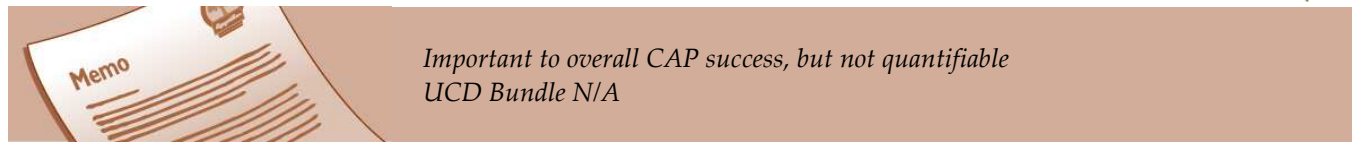
Proportion of Total GHG Reduction Target

3.5%

Objective I: Incorporate Sustainable Practices into All City Operations



Strategy MO-1: Internal Policies



Description: Integration of CAP implementation into City operations.

Although municipal operations constitute only a small proportion of the total community-wide GHG emissions, the City has a responsibility to lead by example and to commit to reducing GHGs in all aspects of its operations. Integrating CAP strategies into all municipal activities and policies will be important to the success of CAP implementation.

Actions:



Educate City staff in ways to promote public interest in meeting CAP goals.

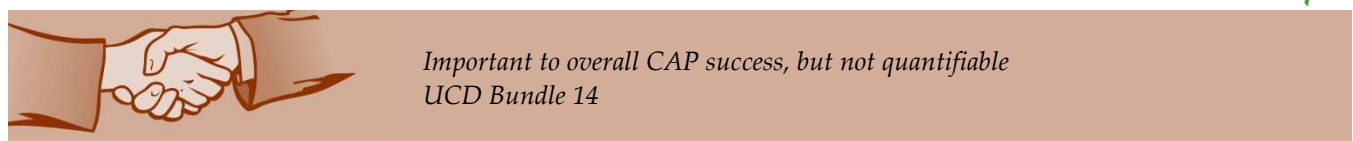
Evaluate internal policies and procedures and revise as needed to reflect best practices to ensure that appropriate GHG-reduction elements are included.



Ensure the integration of energy efficiency and GHG reduction considerations into all City projects.

Ensure that City commissions and citizens committees consider the goals of the CAP in their activities, decisions, and recommendations.

Strategy MO-2: Purchasing and Contracting



Description: Integration of CAP goals into purchasing and contracting procedures.

Many of the City's regular operation and maintenance functions, in addition to capital improvement projects, are carried out by companies under contract to the City. These functions include waste collection and disposal, custodial services, and parks maintenance. Integrating GHG-reduction measures into City operations includes ensuring that contracts with all service, consulting, and construction firms also incorporate, where feasible, measures to advance the City's CAP implementation.

Actions:



Ensure that all departments implement the City's Environmentally Preferable Purchasing Policy.

Provide a credit or other incentive for proposals or firms submitting bids that reduce overall GHG emissions through design, materials, operation, or maintenance of infrastructure.

**Objective 2:
Reduce Emissions from Municipal Electricity Use by 80% or More**



Strategy MO-3: Increased Energy Efficiency and Use of Renewable Energy



*Percentage of GHG Reduction Target: 3%
GHG Reduction: 1,800 MTCO₂e
UCD Bundles 15 and 16*

Description: Implementation of energy-efficiency measures, energy-efficient technologies, and renewable energy projects.

Wastewater processing and water production are the highest energy uses in municipal operations, followed by building operations, particularly at the Community and Senior Center and the Police Station, and both facility and outdoor lighting. Methods of reducing GHGs from energy use in municipal operations may include:

- Improving water and wastewater production processes
- Improving building performance (climate controls)
- Upgrading lighting, especially streetlights
- Replacing equipment and appliances with more energy-efficient models
- Reducing energy demand through awareness and changes in behavior
- Using renewable energy

See the Urban Forest and Open Space section for energy-reduction strategies related to increased shade tree canopy.

See the Water and Waste section for energy-reduction strategies related to reduced water use.

Goals:

- 80% reduction in electricity use from the 2020 projection of 2,300 MTCO₂e (1,800 MTCO₂e)

Actions:



Install or procure renewable energy for all major City facilities.

Convert street lights, path (park) lights, traffic signals, and other outdoor lighting to LEDs where possible.

Conduct audits/assessments of energy efficiency of City buildings and energy use practices of staff and adjust where feasible and practical through retrofits, upgrades, or behavioral changes.

Ensure maximum efficiency of equipment and processes used in water and wastewater systems.

Reduce reliance on potable water supply by expanding the distribution and use of recycled water (treated wastewater) to industrial uses and landscaped areas.


Require development site designs that reduce stormwater runoff through the use of retention basins and LID practices, including tree planting, bioswales, and permeable pavement where appropriate, to reduce the future need for increased stormwater pumping.

Optimize efficiency of irrigation systems for parks and other public landscaped areas.



Objective 3: Reduce Vehicle and Equipment Emissions

Strategy MO-4: Increased Use of Alternative-Fuel and Fuel-Efficient Vehicles

Percentage of GHG Reduction Target: 0.3%
 GHG Reduction: 200 MTCO_{2e}
 UCD Bundles 18 and 21

Description: Partial conversion of the City fleet to vehicles with lower GHG emissions, and adherence to vehicle idling regulations.

Alternative-fuel vehicles that have reduced GHG or zero GHG emissions include:

- Flexible fuel vehicle – uses gasoline or E85, a mixture of 85% ethanol and 15% gasoline
- Hybrid or plug-in hybrid electric vehicle (PHEV) – powered with electricity and gasoline
- Electric vehicle (EV) – runs on electricity alone
- Compressed natural gas (CNG) vehicle – runs on compressed natural gas
- Fuel cell vehicle (FCV) – uses pressurized hydrogen to power a fuel cell, which then generates electricity to run the vehicle

Goals:

- Replacement of 30 gasoline vehicles with 5 EVs and 25 hybrids, and replacement of 10 diesel vehicles with vehicles using CNG, biodiesel, or E85 (200 MTCO_{2e})

Actions:



Educate City field crews and equipment operators about heavy equipment idling limitations in state law, and ensure that the limitations are followed.



To the extent feasible and practical, replace passenger vehicles and light-duty trucks in the City fleet with alternative-fuel vehicles or smaller, fuel-efficient vehicles as they become due for replacement.

Replace utility vehicles and equipment with alternative-fuel models where feasible and practical.

Install equipment at City facilities that can be used for charging City and employee EVs.





Strategy MO-5: Reduced Motor Vehicle Use



Percentage of GHG Reduction Target: 0.1%
 GHG Reduction: 100 MTCO_{2e}
 UCD Bundle 21

Description: Measures to reduce employee commute and work trips.

Goals:

- 70 employees ride-sharing and 40 riding bicycles to work or during work, and travel to meetings is reduced (100 MTCO_{2e})



Actions:



- Participate in the Yolo Transportation Management Association to provide incentives to employees for reducing commute trips by biking or walking to work and guarantee employees a ride home in case of emergency.
- Establish a shared bicycle program for employees to use for work-related local travel.
- Provide secure bicycle parking facilities at City facilities for staff and public use.
- Use web-conferencing for meetings where possible to reduce travel.
- Consider providing opportunities for employee telecommuting and alternative work schedules (e.g., 9/80 schedules) that reduce work commute trips.

Tools for Measuring Progress

- Purchasing records and department self-reporting
- GHG-reduction provisions in contracts with outside contractors or service providers
- Yolo Transportation Management Association program participation
- City energy use records
- Annual inventory of GHG emissions from vehicle use and other sources

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Additional Actions

The following is a menu of potential actions to implement if a mid-point (2017) check on CAP implementation progress determines that insufficient progress is being made toward the GHG-reduction target.

Energy

- Implement building standards that exceed Title 24 through, such as:
 - A cap on amount of energy that particular building types and sizes can use annually
 - A cap on the amount of energy a building can use regardless of size
 - A package of prescriptive measures
 - A green rating system
- Require all new construction to include renewable power.
- Require all new construction to be carbon neutral by 2025.
- Require businesses to undergo an energy audit or demonstrate at least a 20% energy reduction over the most recent three years.
- Require point-of-sale demonstration of energy-efficiency improvements when properties are sold.

Transportation and Land Use

- Require employers with 20 employees or more to actively participate in Yolo Transportation Management Association to reduce employee passenger-vehicle commute trips
- Prohibit the construction of new drive-through restaurants and services.
- Provide a bicycle-share service for residents.
- Work with Yolo County Transportation District to establish short-distance shuttle-bus routes in Woodland.

Urban Forestry and Open Space

- Accelerate the target deadline for reaching a tree canopy coverage of 25% to 2028 and increase annual tree planting goals accordingly.
- Require denser tree planting to achieve a 60% tree canopy cover in new or rehabilitated parking lots without solar installations where the cover would not interfere with safety lighting requirements.

Municipal Operations

- Purchase green certificates or GHG credits.

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Community Suggestions

A listing of all community suggestions provided during the CAP development process through August 2012

Energy

New construction

- Require attic radiant barrier insulation on all new construction that is not part of the title 24 mandated insulation calculations; it would bring most attics up to R-50+.
- Require all new construction to incorporate 18-inch rafter tails above south and west windows to increase shade and reduce heat-producing solar gains.
- Cool roofs on all new construction.
- Set a date for zero carbon footprint in new homes and commercial buildings.
- Adopt energy-efficiency *standards for new construction* growth; the distances community members need to travel for essential services; and the ease or difficulty of different modes of travel.

Energy audits and retrofits

- Require older homes/businesses to become more energy efficient, and consider making low-interest loans available for upgrades.
- If a mandatory energy-efficiency policy is adopted, it should apply to all properties, including those that were built before 1978, rather than using property sale as a trigger. Form an AB 811 voluntary assessment district to provide a funding mechanism for energy-efficiency improvements.
- Program for retrofitting energy efficiency in existing buildings - insulation, appliances, lighting, etc.

- Encourage the creation of voluntary programs through public-private partnerships such as Acterra's Green@Home Program in Palo Alto, a partnership among the city, neighborhood associations, utilities and environmentalists. Trained volunteers do home visits, install CFLs, turn down thermostats on hot water heaters, install electronic thermostats and go through a 20-point checklist on ways the homeowner can increase water and energy efficiency.
- With PG&E, develop an energy audit program for businesses that is tied to the city's business license program or is voluntary and promoted as a marketing tool for landlords. Create a repository for energy audit reports, searchable by property, to help with marketing of properties.
- Expand energy efficiency programs.
- Encourage commercial and residential uses to accomplish energy-use footprint/inventory and create reduction strategies.

Alternative building energy

- Encourage solar and wind installations.
- Encourage city and commercial businesses to use solar panels for power.
- Move toward a requirement or strong incentive to place photocells on homes and businesses.
- Rooftop solar on residential homes, apartments, etc. and commercial (private) buildings.

New construction - solar

- Require increasing percent of solar in new construction, both homes and commercial, with final goal being 100% of new construction to have solar.

- Solar required on all new homes or in new home developments.
- Solar ready homes.

Solar water heaters

- Solar water heater incentives.
- Solar water heaters for all!
- Solar hot water heaters required on new commercial/residential development.
- Solar water heaters available.
- Encourage solar hot water heater installations and or tankless/Point of Use hot water heaters for residents and businesses through rebate programs and negotiated purchases with manufacturers to utilize the economy of scale to reduce prices.

Large solar arrays

- Require solar on all new parking lots.
- Work with PG&E to install solar panels over car lots for auto dealers or other large parking lots that lack shade trees. By shading the sales lot, people will be more comfortable while browsing through a lot of new cars during the heat of the summer and shielded from rain during the rainy season.
- Work with PG&E to install solar panels on big box stores. These large horizontal surfaces could be put to beneficial use by having solar panels. Installing panels on the roof will benefit the store by shading the roof and therefore reducing the need for cooling the store in the summer.
- Have community solar facilities within Woodland. Allow apartment and other residents who can't have solar to participate in community solar.
- Conduct feasibility study for a city solar farm on city-owned property. Contributions for construction could be subsidized by subscription by interested homeowners. Participants would share in the benefits of generated electricity, including offsets to their electric bill. This will enable homeowners whose homes are not optimally configured for solar panels to invest in solar electricity and share the benefits. A city-owned solar farm could also be used to generate electricity for ball field lighting and other municipal uses.

City facilities and operations

- Require solar panels for shade structures in City-operated facilities, including parking lots.
- Sewer system solar farm.
- Install solar generation panels on Community Center roofs.
- Upgrade City structures with double-pane windows.
- City - Verify SEER rating of City AC units and, if below 14, consider replacement.
- Take advantage of PG&E subsidies for HVAC maintenance contracts in city buildings.
- Include demonstration installations at parks, shopping centers, etc.

Lighting

- Perform a comparative analysis of the modern ball field lights at Lee School and the existing lights at Clark Field. Upgrade the Clark Field light plant as needed to improve efficiency.
- Change city sign rules to encourage LED signs.
- Require certain percent of all lighting to come from natural light in buildings.

Landscaping equipment

- Incentives to change from gas to electric lawn equipment (battery).
- Incentives for commercial lawn care business to switch to electric.
- Some reward for using electric/battery-powered lawn mowers.
- Encourage commercial landscapers to switch from mow and blow to rake and sweep.

Permits and fees

- Building permits cheaper for energy-efficient new construction - and *much* more expensive for those that are not.
- Tax on gasoline.
- Permit process that expedites energy-conserving improvements.
- Adopt fees that encourage energy conservation.

Other

- Encourage PG&E to make more data available to homeowners from Smart Meters, such as real-time energy usage data.
- Suggest Pacific Coast Producers consider a small cogen that would power the operation and provide hot water for preheating existing heating sources.
- Promote radio use over television.

Transportation

Biking and walking

- More bike paths and green belts.
- More green belts: Create a whole secondary circulation system to get people out of, and away from, their cars.
- Make East Main Street walkable and bikeable.
- Improve downtown alleys to encourage walking and biking.
- Make the downtown area more attractive for walking/bicycling.
- Ensure that busy streets have safe pedestrian and bike crossings.
- Provide walking and bike routes to destinations such as malls, theaters, etc.
- Increase pedestrian safety and accessibility.
- To encourage walking, put signs in walking areas stating how far different destinations are.
- Make Main Street walkable: (a) All intersections have walk buttons to activate; (b) All intersections 4-way to encourage slow driving, increase business, and walking.
- Encourage pedestrian activity between downtown and nearby residential areas through reform of the downtown traffic pattern: 4-way stop signs, diagonal parking, enhancement of public space through streetscape improvements and promotion of a city square.
- Work with the Historic Woodland Downtown Business Association and the Chamber of Commerce to create a Park & Walk zone in the downtown.
- Work with school districts to encourage walking kids to school rather than driving kids to school.
- Stop driving kids to school.
- School busing in town is now being eliminated due to budget cuts. This is an opportunity to return to bicycle riding or walking to school.
- Require measures to increase biking/bikeability. Include: (i) Increased bike lanes (high class - esp. Class A) within the city, (ii) Complete off-road bike path between Woodland and Davis, (iii) Safe routes to schools, (iv) Bicycle safety instruction.
- Make our streets bikeable! - Designated bike paths, more bike parking and air stations, more 4-way stops and traffic calming, parallel streets one-way (e.g., Third and College), safe bike crossings.
- Create bikeway along south side of town as part of new water project (necessary to put in new water infrastructure to get water to southwest part of town).
- Bike path between Davis and Woodland.
- Where's the bike path between Woodland and Davis?
- Non-road bike path to Davis.
- Make bicycling safer.
- Better bike lanes and bike paths to make the town more bike friendly.
- Create more bike-friendly travel lanes to improve biking safety.
- Improved bike paths - more green belt/bike pathways to work and shopping areas.
- Create bike routes around town to foster the use of bicycles.
- Bike lanes.
- Bike-safe streets (lanes everywhere).
- Bike friendly - reconfigure one-way streets.
- Make Woodland more bike friendly.
- Dedicated bike paths.
- Create true off-street bike lanes.
- Make Woodland more bike friendly by installing more bike lanes and more racks.

- Provide more bicycle racks at retail to encourage bicycling.
- Bike racks required at commercial facilities.
- Recycle bikes that are dropped off at the dump.
- Create community programs to encourage bicycle recycling.
- Have how-to workshops for bike repairs.
- Reward bike riders \$\$ from gas-guzzler cars.
- Incentives for seniors to buy 3-wheeled bikes.
- Bike helmet give-away or discount to encourage bike use.
- Encourage Woodland elementary and junior high bicycle days.
- Promote an economic development collaboration with Davis for development of a bicycle trailer that can function like a car trunk for secure storage of items.
- Create a non-profit bicycle lending organization to operate with municipal assistance.

Mass transportation

- Light rail: Woodland to Sacramento. Amtrak: Woodland to Davis.
- Bus routes that connect easily to other public transport - i.e., one directly to Amtrak in Davis.
- Provide more public transit/buses.
- Additional bus routes that connect with shopping areas (especially at edges of town!).
- More public buses and routes and frequency.
- Redevelop bus routes & bus size to maximize use.
- Prioritize on basis of cost effectiveness.
- More “express” bus routes into Sacramento, at more varied times.
- Increase bus route variety.
- Promote mass transit use!
- Fund school buses.
- Resume bus service for school kids to provide alternative to parents driving their kids to school.
- Community shuttles to supplement buses.

- As our population ages, we will need some ways to help elders with shopping - shuttles for group trips?
- How about churches? Lots of traffic on Sunday mornings.

Other vehicle trip reduction

- Reduce duplicate traffic of public safety vehicles - one call often equals 4-5 vehicles.
- Encourage & reward carpool participants.
- Encourage less driving (organize city-sponsored bike fairs, alternative transport BBQ, etc.).
- Raise awareness - public relations campaign to encourage walking, biking, bus taking for doing errands, going to work, etc.
- Constrain or reduce parking.
- Increase connectivity for all modes of transportation.
- Have Zipcars (or something like that) to encourage people to reduce the number of vehicles they own.

Public fleets

- More electric vehicles for park and school maintenance.
- Encourage more alternative fuel usage for city partners or public safety vehicles (if available).
- City - buy smaller vehicles instead of hybrids. Use hybrids only if the vehicle gets high use.

Idling reduction

- Time lights on Main Street.
- Identify techniques to keep cars moving rather than idling at stop signs or lights. Introduce round-abouts.
- More traffic circles rather than 4-way stops.

Electric vehicles

- Find and encourage electric vehicle dealerships to locate in Woodland, provide incentives - i.e., reduce or eliminate city sales and property taxes for these businesses. Electric cars, trucks, bikes, scooters, etc.
- Electric car-charging stations.
- Electric bus transportation to UCD.
- Electric Vehicle charging stations throughout the city.

- Provide 'priority parking' for NEVs (Neighborhood Electric Vehicles) at businesses and on public streets.

Land Use

Compact and mixed-use development

- More mixed-use development where possible to reduce vehicle trips.
- Increase development density (especially along major transit routes).
- Compact mixed-use transit-oriented development.
- Revise commercial zoning to encourage development where residents get “what they need” nearer to home.
- Increase residential density in the downtown area – i.e., change zoning to encourage apartment units above commercial buildings.
- Encourage housing above retail (mixed use) to reduce travel.
- Encourage TRUE mixed use (housing over/near commercial, retail, public amenities).
- Incentivize high-density development and integrate related policies into an updated general plan housing element.

Commercial

- Create an innovation center as part of Woodland Business Park in northeast part of town.
- Put a grocery store on south side – e.g., at the mall.
- Develop downtown rather than relocating core business area.

Infill/redevelopment/centralization

- Infill development.
- Build homes on vacant lots and not outside of town on farmland.
- City policy to redevelop first. All incentives go to redevelopment. Decreased sprawl-related issues of export and water/waste movement.
- Reduce periphery development. Especially retail development since this would reduce long-distance trips.

- Encourage conversion of “poor” commercial centers to compact residential.
- Enforce the urban limit line (treat it as a long-term growth boundary, not a build-to line).
- Encourage businesses to have centralized locations rather than building on the edges of town.
- Encourage retail development in central areas of city (downtown) to help decrease trip length and encourage use of alternative forms of transportation, like biking and walking.
- Emphasize infill, especially near existing or planned public transit corridors – i.e., Transit Priority Areas within ½-mile walking distance to transit.
- Redevelop West Woodland to shorten the average trip time for residents.
- Shift housing development to smaller dwellings.
- Promote and enhance neighborhood commercial uses within both new and infill developments.

Transit-oriented development

- Discourage auto-centric development.
- Plan all new development with bus routes.
- Promote and enhance public transportation, such as Yolobus.

Energy-efficiency policies

- Update the zoning ordinance to provide standards for energy-efficient development.
- Look at industrial and commercial uses and development for energy-efficiency improvements; these types of land use can be a much greater source of pollution and energy consumption and therefore have the potential to achieve a much greater savings than housing.
- Provide incentives for live/work business licenses.

Non-building land uses

- Designate land for community gardens in new high-density developments.
- Community gardens in vacant lots.

- Put aside some land within the city for present and future renewable energy. Could be solar, biomass, some as yet undetermined method – Don't fill it all in with houses and buildings.
- Discourage installation of solar panels in place of vegetation. Green space helps to prevent climate change by removing CO₂. Installing solar panels where vegetation would otherwise exist are not as beneficial as solar panels over buildings or other hardscapes.

Other

Increased tree canopy

- Increase the requirements for tree coverage in parking lots.
- Plant and maintain trees in all currently unplanted street medians.
- More trees.
- Work with Woodland Tree Foundation to promote the City tree rebate program to increase the number of street trees.
- Be proactive in encouraging homeowners to plant trees in planting strips.
- Require all new home construction to include 2 shade trees per home on the east, west, or south face of the home to provide the most energy savings.
- Increase the requirements for street trees to shade asphalt and parked cars – cooler cars produce lower emissions, shaded asphalt requires less maintenance.
- Allow companies to plant trees as a means of carbon offset or donate funds to support Yolo County tree programs such as Woodland Tree Foundation, Sacramento Tree Foundation, City tree operations, Yolo RCD, etc.
- "City of Trees" should redouble its 70-year-old tree-planting program; City and Chamber should promote.
- Increase tree canopy to 40-50% of community (land mass) (recent city "canopy study" indicates 14% canopy).
- Partner with PG&E and Woodland Tree Foundation on major shade-tree program for homeowners to reduce energy consumption.

- City should heavily promote its \$75 tree rebate program.
- More tree canopy will encourage more people to walk & ride bikes, reducing car trips and greenhouse gas emissions.
- Improve and fund Code Enforcement efforts for landscape and tree plantings in commercial developments.
- Become the best "Tree City" in California.
- Plant City surplus property in trees (Woodland Tree Foundation would donate some materials and labor).
- Focus on maintenance of mature trees that already provide energy benefits vs. planting new trees that will provide no benefit for many years.
- Tree planting for both cooling and sequestration of greenhouse gases.
- Adopt urban forestry program to sequester carbon in growing trees.
- Increase tree canopy: (a) Maintain current trees, (b) Plant and maintain new trees, (c) Design parking lots better to provide shade and/or solar energy, (d) Encourage trees growing near residences to increase shade and decrease air conditioning needs.
- Adopt urban forestry.
- Explore adopting urban forestry program to sequester carbon and selling of emissions offsets when cap and trade program is adopted.

Water-efficient landscaping

- Transition street plantings from grass to water-efficient ground covers such as *Myoporum parvifolium* or other drought-resistant plants to reduce water and maintenance.
- Require all city trees and plantings to be water wise, preferably California natives.
- Master tree list should be more appropriate for our climate. Why are redwoods recommended?
- Allow people to remove large, grassy lawns and replace with appropriate low-water using plants and shrubs.
- In all new construction, only allow XXX% of landscaping to be grass.

- Reduce water usage and energy associated with water pumping by emphasizing native landscaping (drought-tolerant) at city-owned property. [This suggestion was seconded.]
- Water conservation to reduce energy use. Use of low-water-use landscaping or irrigation efficiency and plant selection.

Other water conservation and reuse

- City and school irrigation improvements.
- Require purple pipes to be installed in all new construction.
- Begin the process of how to use this better (2016) water as gray water.
- Use recycled and gray water for irrigation.
- New construction to include wise use and recycling of gray water.
- Rainwater capture: Require certain percentage of all water in new buildings to come from rainwater capture.
- Wasted shower water plumbed directly to toilets and landscape irrigation.

Reduced stormwater pumping

- Require permeable materials in all new parking lots.
- Use permeable paving such as pavers on sand, in street repairs at crosswalks and elsewhere.
- Maximize plantings in storm water basins.
- Encourage city and commercial buildings to install roof gardens.

Incentives for energy- and water-efficient practices

- Find a way to link valuation of homes to how much water is needed to maintain the landscape.
- Conduct voluntary water-audit programs and issue a certificate upon completion to property owners that can be used in marketing a property.
- Real estate agents and Chamber of Commerce create programs to promote the green certified program and help businesses become certified.

- Use permit streamlining, reduced fees, and other inducements to encourage voluntary adoption of green building standards, such as LEED and Build It Green, and to realize energy-efficiency goals.
- Expedite and reduce permit cost for south and west patio covers that shade windows or interior walls as well as low-e window replacements.
- Allow development fee offsets for additional insulation in new construction.
- Waive permit fees for additional insulation in new construction.
- Streamline approval process for facilities and projects that will result in reduced greenhouse gas emissions.
- Offer incentives for City departments that reduce energy use by a specified amount (5, 10, or 15 percent).

Waste reduction

- Encourage more residential composting.
- Encourage composting.
- Green waste composting.
- Ban plastic bags.

Buy local

- Provide economic development money for more stores on Main Street; diverse good to sell!!
- Woodland scrip to encourage local purchases.
- Encourage consumption of locally produced goods, services, food and fiber to reduce “miles travelled to the market” by providing on-line “shopping tool.” “Woodland scrip”?
- Emphasize purchase of locally produced products, especially food.

Energy-upgrade financing

- Allow homeowners to pay off solar installation through a surcharge on their property tax assessments or utility bills to spread out the cost over a number of years and ease the financial burden.

Education

- Raise awareness about the need to promote alternative transportation modes: Ask community leaders to announce in public forums “in an effort to help reduce CO₂ emissions, I biked/walked/rode the bus/car pooled to this meeting today.” Tie it to doing a civic duty to help the community. Encourage the newspaper to write about this. Hand out stickers (similar to “I voted”) to all who used alternative transportation. Hand them out at shopping centers, etc.
- Include school district to look at education and projects for K-12 regarding CO₂ projects. Additional classroom outreach to teach children sustainable life principles.
- Education (posters) (speakers) at schools, Fourth of July. Make it a patriotic thing to use less fossil fuels. [This suggestion was seconded.]
- More workshops on drought-tolerant plants.

Miscellaneous

- Encourage drive-through restaurants to reconfigure procedures: From the car, you place an order, pay the bill, and take a number; then, park and wait for the food to be brought to you in a special waiting area.
- Do away with fireworks and the associated pollution.
- We seriously have to crack down on 'gross polluters' - autos that have either had their catalytic converters removed or on which maintenance is not being done. Same goes for landscaping equipment, especially leaf blowers.
- Developer fees to pay for bike routes, bus lines.
- Reduce population.
- Stop voting for politicians who support energy wars.
- Restore existing buildings instead of removal and replacement.
- Create community gardens to promote healthy living, organic micro farming and community involvement.