Winters Climate Action Plan Development Board Meeting

Thursday, July 2, 2020
5:00 p.m.

Zoom Meeting ID: 893 6150 9381
Join by phone:
+1 669 900 6833 US (San Jose)
Join by computer or device:
https://us02web.zoom.us/j/89361509381

AGENDA

Members of the CAP Development Board

x Jennifer Urquhart
x Ken Britten
x Gar House
x Kelly Linville
x Sam Warren
x Alternate: Shawn Yarnes

John W. Donlevy, Jr., City Manager
Ethan Walsh, City Attorney
Tracy Jensen, City Clerk

PLEASE NOTE – The numerical order of items on this agenda is for convenience of reference. Items may be taken out of order upon request of the Chair or board members. Public comment time may be limited and speakers will be asked to state their name.

Roll Call

Pledge of Allegiance

Approval of Agenda and Meeting Minutes from 6/18/2020

PUBLIC COMMENTS

At this time, any member of the public may address the Board on matters, which are not listed on this agenda. Residents should reserve their comments for matters listed on this agenda at the time the item is considered by the Board. An exception is made for members of the public for whom it would create a hardship to stay until their item is heard. Those individuals may address the item after the public has spoken on issues that are not listed on the agenda. Presentations may be limited to accommodate all speakers within the time available. Public comments may also be continued to later in the meeting should the time allotted for public comment expire.

PRESENTATIONS

None.

BOARD DISCUSSION ITEMS

1. Mobility subcommittee updates (Ken, Shawn, Chris) followed by board discussion.
2. Urban Forest and Open Space subcommittee updates (Jennifer, Ken, Chris)
3. Building and Infrastructure Energy + Water and Waste subcommittee updates (Jennifer, Kelly, Chris, Kristine)

STAFF UPDATE

July and August upcoming meetings

NEXT MEETING TOPIC

Subcommittee updates to CAP document (continued)

BOARD ACTION ITEMS

1. Add comments to CAP document in shared Google drive folder: https://docs.google.com/document/d/1Ssr2--SigFHpgmwxJZmC6E54gY6A_CMg/edit
2. Meet with assigned subcommittee on designated CAP focus areas.

ADJOURNMENT

I declare under penalty of perjury that the foregoing agenda for the July 2, 2020 regular meeting of the Winters Climate Action Plan Development Board was posted on June 29, 2020 at the City of Winters website at www.cityofwinters.org . The agenda was made available to the public during normal business hours and board members were notified via e-mail of its availability.

Christopher Flores

Christopher Flores, Climate Fellow

Questions about this agenda – Please call the City Clerk's Office (530) 794-6702.

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City Hall – Environmental Services - 318 First Street

Winters Climate Action Plan Development Board Meeting

Thursday, June 18, 2020
5:30 p.m.

Zoom Meeting ID: 828 0359 8046
Join by phone:
+1 (669) 900-6833 US (San Jose)
Join by computer or device:
https://us02web.zoom.us/j/82803598046

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Roll Call

Members: Jennifer Urquhart, Gar House, Kelly Linville, Sam Warren, Shawn Yarnes, Ken Britten

Liaisons: Christopher Flores, Climate Fellow: Kate Laddish; Putah Creek Committee

Pledge of Allegiance

Christopher led the pledge of allegiance.

Approval of Agenda and Meeting Minutes from 5/14/2020

Motion by board member House and **second** by board member Yarnes to approve agenda and meeting minutes from 5/14/2020.

YES: Urquhart, House, Linville, Warren, Yarnes
NO: None.

PUBLIC COMMENTS

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PRESENTATIONS

None.

BOARD DISCUSSION ITEMS

1. Community Engagement... subcommittee updates (Shawn, Sam, Chris) followed by board discussion.

On June 11, 2020 board members Yarnes, Warren and climate fellow Flores met as the Community Engagement and Municipal Operations subcommittee to discuss desired areas of improvement to respective focus areas of the CAP. Board member Yarnes proposed changes to the Table of Contents to the current version of the CAP to include more climate emergency preparedness and community resiliency resources. Currently the CAP only focuses on methods for the City to reduce its generation of greenhouse gases (GHGs) but does not address the ongoing impacts already occurring within the community. Some ongoing, already-present impacts Winters is facing include wildfire susceptibility, excessive heat, food security, and energy availability.

Board members discussed the possibility of energy availability and the potential for microgrids within Winters, as well as access to community resources like cooling centers. Board members also discussed the potential to expand the current draft CAP into two documents discussing GHG emissions reduction methods as well as climate change preparedness. Christopher stated that much of emergency preparedness related to climate change and other natural disasters are managed at the county level and larger agencies, however the benefit to incorporating this planning at the local level is a more location-specific set of tools.

Board member Warren, stated that the CAP should include components of adaptation and resiliency to address already existing impacts from climate change. Board member Warren also stressed the importance of explicit language choice within the document by stating which groups will be targeted (working class persons, Latinx population, people

with disabilities, seniors, youth). Board members encouraged the use the neutral, inclusive, and accessible language when outreach performed by the to-be formed commission.

Members expressed their concerns about how the CAP would influence current and future development projects within the City. As a planning document, the CAP will serve as a resource for entities like the City of Winters Planning Commission when considering incoming projects. Members agreed to discuss mobility and planning issues in further detail at the next meeting.

Motion by vice chair Britten and **second** by board member House to move the CAP Development Board meeting July 2, 2020 at 5:30pm to July 2, 2020 at 5:00pm.

YES: Urquhart, Britten, House, Warren, Linville.
NO: None.

Motion by chair Urquhart and **second** by board member house to adjourn the meeting.

~~2. Proposal for Table of Contents revision (Shawn)~~

See discussion item 1 above.

STAFF UPDATE

NEXT MEETING TOPIC

Subcommittee updates to CAP document (continued)

BOARD ACTION ITEMS

1. Add comments to CAP document in shared Google drive folder: https://docs.google.com/document/d/1Ssr2--SigFHpgmwxJZmC6E54gY6A_CMg/edit
2. Meet with assigned subcommittee on designated CAP focus areas.

ADJOURNMENT
I declare under penalty of perjury that the foregoing agenda for the June 18, 2020 regular meeting of the Winters Climate Action Plan Development Board was posted on June 15, 2020 at the City of Winters website at www.cityofwinters.org . The agenda was made available to the public during normal business hours and board members were notified via e-mail of its' availability.

Christopher Flores, Climate Fellow

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Mobility

Combustion of fossil fuels for transportation is a major source of GHG emissions, including people going to and from home, work, school, shopping, etc. About three-fourths of Winters' GHG emissions come solely from transportation. Addressing mobility and transportation presents an opportunity to reduce GHG emissions as well as improve the health of the City's residents. This can be accomplished by investing in and increasing efforts to create and maintain a larger variety of transportation options for residents.

Greater transportation options are intended to enhance the effects of the City's land use policies that bring housing closer to businesses, schools, services, and recreation in order to reduce travel mileage and time while increasing walking, biking and public transit. The two main objectives will include: (1) reducing motor vehicle use and (2) replacing gas and diesel vehicles with vehicles with lower and/or zero GHG emissions, including electric vehicles (EVs), hybrid cars, trucks, and buses, smaller vehicle models, and biofuel and compressed natural gas (CNG) vehicles.

Strategy Summary

Objective 1: *Implement Land Use Policies to Support Reduced Motor Vehicle Use*	
M-1	Complete Streets Concept Plan
M-2	Infill Development, Redevelopment, and Repurposing
M-3	Smart Growth in New Development
Objective 2: *Reduce Vehicle Trip Mileage and Equipment Idling Emissions by 1%*	
M-4	Reducing Motor Vehicle Trips
M-5	Increased Mass Transit Use, Walking, and Biking
M-6	Reduced Emissions from Vehicle Idling and Other Equipment
Objective 3: *Replace Gas and Diesel Vehicles with Alternative-Fuel Vehicles*	
M-7	Increased Use of Alternative-Fuel Vehicles
Portion of Total GHG Reduction Target:	30%

Practices and infrastructure that increase pedestrian, bike, and transit travel mobility and convenience are essential to reducing motor vehicle travel mileage and frequency. Transportation and land use strategies directly correlate when developing GHG strategies due to the influence land use policies have on community travel distance, growth, and level of convenience for different modes of transportation. Therefore, land use and transportation strategies are incorporated in this section.

Commented [7]: Replace this #2 objective with two new objectives:
#2 increase capacity for safe and accessible active transportation within the city between essential services
#3 promote access to reliable and secure internet service to better allow opportunity for telework

The mobility strategies, if properly and adequately implemented, could reduce GHG emissions by an estimated 1,763 MT CO_2e or 30% of Winters' GHG- reduction target.

Although land use policies are essential to the accomplishment of mobility-related GHG-reduction, quantified reductions are only included in Objectives 2 and 3 in order to avoid double-counting of total GHG reductions.

Commented [8]: Figure to be revisited after new strategies are identified.

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

Strategy M-1: Complete Streets Concept Plan

- Important to overall CAP success, however is not quantifiable
- UCD Bundle 9 and 11

Description:

Use of land use policies to improve infrastructure designs and measures that will encourage and provide safe walking, biking and public transit use.

Implementing more of the Winters' complete streets concept plan will encourage and help implement strategies to increase convenient walking, biking, and public transit use; including:

- Streets with sidewalks and lighting
- Bike lanes
- Affordable and accessible public transportation with shade structures at stops
- Safe crossing arrangements
- Curb extensions
- Drinking fountains

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The City Bike Pedestrian Master Plan was updated in 2013. The City's Public Improvement Standards have also been modified to include bulbouts and curb extentions to provide safer street crossings.

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See the Urban and Forest and Open Space section for actions that address reducing the heat island effect on streets.

Actions:

- Increase walking and biking travel through the city by improving alleys (Residential)
- Create a community program that encourages walking, biking and public transportation (Education)
- Implement more of Winter's Bike Master Plan and create a "Safe Routes to School" program for students (Legislation/Policy)

- Provide safer environments for pedestrian by increasing number of speed bumps, stop signs, roundabouts and cross walks (Legislation/Policy)
- Install enough water foundations/drinking stations such that pedestrian would not need to travel more than ½ mile to access drinking water (Construction, Policy)

Strategy M-2: Infill Development, Redevelopment, and Repurposing

- Important to overall CAP success, however is not quantifiable
- *UCD Bundle 11*

Commented [9]: From YRC toolbox

Description:

Implementation of land use policies and regulations in order to increase infill development, redevelopment, and repurposing. Locate housing near transit stops, pedestrian and bicycle facilities and other services in order to reduce motor vehicle travel.

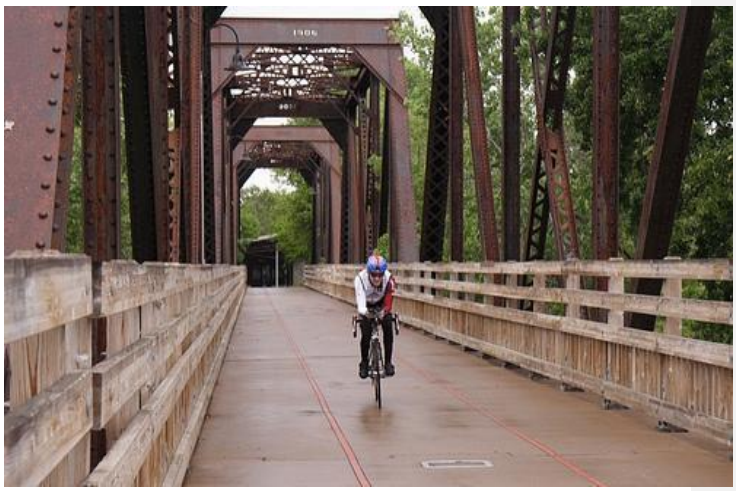
Actions:

- Encourage policies and legislation that promote transit-oriented development and implement more of Winters' Bike Master Plan (Legislation/Policy)
- Promote smart growth, high density, mixed use development in and outside downtown to provide essential services to all residents with minimal travel. (Legislation/Policy)
- Participate in regional planning to reduce commuting and GHG emissions through SACOG as part of SB 375. (Legislation/Policy)
- Establish neighborhood design standards to minimize GHG emissions from transportation, including locating homes within walking/biking distance of essential services. (Legislation/Policy)

- Establish and implement the City's Urban Limit Line 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. (Legislation/Policy)
- Promote mixed use for vacant lots and new development and redevelopment projects, such as using upstairs spaces in the downtown area for retail, office and other uses.

Commented [10]: Potential role/task for planning commission?

- Encourage the use of designated public area or other City land for community gardens (Residential, Policy, Commercial)
- Encourage pedestrian and bicycle oriented design in terms of space, building size and placement allocation (Legislation/Policy)
- Increase allowable residential density and building height standards (Legislation/Policy, Construction)



Strategy M-3: Smart Growth in New Development

- Important to overall CAP success, however is not quantifiable
- UCD Bundle 11

Description:

Implementation of land use policies and regulations in order to increase new development that generally includes the following:

- Higher-density development
- Primary services closer to neighborhoods
- Mixed commercial and residential uses
- Transit-oriented, walkable, and bicycle-friendly land uses
- "Smart growth" concept that includes transit-oriented development (TOD), encouraging public transportation and maximizing residential and commercial areas.

Actions:

- Encourage mix uses in new residential and commercial spaces (Construction)
- Require that all new commercial development include bike racks, EV charging stations, and other incentives for no fossil fuel transportation (Legislation/Policy)
- Implement Winters' Bike Master Plan in order to design communities that can easily access essential services by walking or biking (Construction)

Commented [11]: Perhaps extend to all new commercial and R-3/R-4 development

- Implement policies that encourage building denser and higher residential buildings (Construction, Legislation/Policy)

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

Strategy M-4: Reduced Motor Vehicle Trips

- Percentage of GHG Reduction Target: 1.5%
- GHG Reduction: 89 MT CO_2e
- UCD Bundle 5 and 12

Description:

Reducing the amount of passenger and delivery vehicle trips by:

- Increasing carpooling and car sharing
- Increasing work opportunities in the city of Winters
- Increasing local produce production and sales
- Reducing work commute time and travel

Goals:

- 675 residents regularly carpooling, ride sharing, biking or telecommuting (89 MT CO_2e)

Actions:

- Implement more of Winters' Bikeway System Master Plan (Legislation/Policy)
- Work with the YOLO-Solano Air Quality Management District and other organizations to promote employers to provide opportunities for telecommuting and alternative work hours (Commercial)

Commented [12]: Support for telecommuting, including affordable internet and library access.

Commented [13]: 675 residents performing this task is 18.75% of Winter's labor force (~3600). Thoughts? From CA Employment Development Department: https://www.labormarketinfo.edd.ca.gov/data/labor-force-and-unemployment-for-cities-and-census-areas.html

Strategy M-5: Increased Walking, and Bicycling

- Percentage of GHG Reduction Target: 2.5%
- GHG Reduction: 146 MT CO_2e
- UCD Bundle 9

Description:

Increase opportunity and incentives for mass transit use, walking and bicycling in order to reduce motor vehicle trips.

Commented [14]: Current status of available transit can be seen at Yolo Count Transportation District: http://www.yolobus.com/covid-19 Yolobus routes 220 and 220c through Winters have been cancelled until further notice due to COVID-19.

Commented [15R14]: I think increased mass transit use should stay in the CAP. Lots of kids in Winters go to school in Davis. The current bus schedule to Davis does not support school hours.

Goals:

- Increase quantity of schoolchildren bicycling and walking by 40 (3 MT CO_2e)
- Increase quantity of employee bicycle and walking trips by 80 (139 MT CO_2e)

Actions:

- Require that new multi-family developments provide secure bicycle parking or storage options and/or bicycle share program (Legislation/Policy)
- Encourage a bike lending/rental program (Residential)
- Install bicycle parking at all City owned public spaces and encourage installation at other points of interest (Construction, Policy)Create a "Safe Routes to School" program by partnering with schools and YOLO County Health Department (Legislation/Policy)
- Increase shade along transit routes: Increase shade coverage near access points for public and active transportation options (Legislation/Policy)

Commented [16]: Timeline? Per day/week?

Commented [17]: If we are to only encourage what purpose does this serve in a guiding document?

Commented [18]: Increased access; follows suggestions listed in CAP strategy report about City setting an example for businesses and residents

Strategy M-6: Reduced Emissions from Vehicle Idling and Other Equipment

- Percentage of GHG Reduction Target: 1%
- GHG Reduction: 57 MT CO_2e
- UCD Bundle 5, 6, and 8

Commented [19]: From YRC toolbox

Description:

Implementing measures to reduce the use of gas powered equipment and vehicle idling, including compliance with state law restricting idling times for trucks and other heavy equipment.

Goals:

- Reduce idling of 25 trucks or heavy equipment (57 MT CO_2e)

Actions:

- Educate community members and businesses on engine idling myths and facts (Education)
- Educate local transit and school bus management officials on the effectiveness of reducing idling (Education)
- Encourage gasoline lawnmower replacement through exchange programs or other incentives (Rebate/funding)
- Improve efficiency of school pick up
- Include shade structures and trees in parking lots

Commented [20]: Consider installation of anti-idling signs in public parking lots? Make available to interested business owners as well.

STOP Idling.
START $aving.

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

Strategy M-7: Increased Use of Alternative-Fuel Vehicles

- Percentage of GHG Reduction Target: 25%
- GHG Reduction: 1,500 MT CO_2e
- UCD Bundle 7, 10, 13

Description:

Replacement of gas and diesel vehicles with alternative fuel vehicles that are more fuel efficient or have zero GHG emissions.

Goals:

- Replace 200 vehicles with EVs (1,150 MT CO_2e)
- Replace 75 vehicles with hybrids (247 MT CO_2e)
- Replace 50 vehicles with CNGs (78 MT CO_2e)

Actions:

- Support regulations that require new homes to be wired with electric vehicle charging hardware (Legislation/Policy)
- Educate community members and businesses about alternative fuel vehicles, including benefits and funding options (Legislation and Rebate/Funding)
- Support legislation that increases EV charging stations around the city (Legislation)
- Provide parking spots for fuel efficient vehicles (Legislation/Policy)

Commented [21]: Instead maybe consider lawn reduction programs? Encourage residents to plant native and less resource intensive vegetation?

Commented [22]: Consider COVID 19 implications on private transportation needs and fuel costs.

Commented [23]: Seems a bit ambitious to me, is this achievable?

Building and Infrastructure Energy

Energy used to heat, light, and power Winters' buildings and for outdoor lighting is a major direct source of GHG emissions. There are many methods available to help reduce building and infrastructure energy, including: optimizing energy efficiency in new construction, promoting energy and water conservation and efficiency, advancing the use of renewable energy, etc.

The 2020 Predicted GHG Emission Sources chart shows that only about 25% of Winters' GHG emissions are expected to be from community electricity and gas usage. Although this is only a quarter of Winters' predicted emissions, this section will play a huge role in reaching the City's GHG reduction target. The two main objectives will include: (1) reducing energy demand and (2) increasing renewable energy generation. Many of the action items listed have a significant shorter-term reduction in GHG emissions due to improving technologies and financing options providing easier affordability.

The energy strategies, if properly and adequately implemented, could reduce GHG emissions by an estimated 3,547 $MTCO_2e$ or 61% of Winters' GHG- reduction target.

Strategy Summary

Objective 1: *Reduce Energy Use by 35% (1700 $MtCO_2e$)*	
BIE-1	Lighting Upgrades
BIE-2	Appliance/Office Equipment Upgrades
BIE-3	Comprehensive Building Efficiency
BIE-4	Improved Building Temperature Controls
BIE-5	Energy Conservation Education
Objective 2: *Obtain 4.0 MW of Electricity from Renewable Sources*	
BIE-6	Renewable Energy Generation and Procurement
Portion of Total GHG Reduction Target:	61%

Objective 1: Reduce Building and Infrastructure Energy Use by 35% (1700 MT CO_2e)

Strategy BIE-1: Lighting Upgrades:

- Percentage of GHG Reduction Target: 11%
- GHG Reduction: 646 MT CO_2e
- UCD Bundle 1A

Description:

Installation of high-efficiency lighting. One-fourth of residential electricity use and one-third of commercial electricity use generally go towards lighting.

- Incandescent bulbs use 75% more energy than compact fluorescent lamps (CFL) and up to 90% more electricity than light-emitting diode (LED) bulbs.
- Solar tubes and lamps use solar energy to produce outdoor and indoor lighting while using net zero-emission energy.
- The use of motion and day-lighting sensors can increase the amount of avoided/wasted emissions in commercial building operations.

Goals:

- Replace 600 new and existing home lighting from incandescent to or LED bulbs (175 MT CO_2e)
- Improve three-fourths of commercial sectors lighting efficiency by 75% (370 MT CO_2e)
- Replace 100 old exit signs with LED exit signs (10 MT CO_2e)
- Replace 1,500 homes' incandescent bulbs forLED (100 MT CO_2e)

Commented [24]: Incentivize rather than replace.

Commented [25]: Provide bulbs free of charge or at low cost to residents; partner with suppliers.

Actions:

- Encourage the replacement of school, park, and street lighting with LED lights (Legislation/Policy)
- Educate businesses on lighting upgrade benefits, rebates, and financial assistance from programs such as Yolo Energy Watch and California Flex Your Power as part of the business license renewable process. (Education and Commercial)
- Require that new construction and major retrofits include the installation of LED lights, solar tubes, or skylights in windowless internal rooms, as well as consider room orientation to maximize natural day-lighting (Construction)

Strategy BIE-2: Appliance/Office Equipment Upgrades: UCD Bundle 1B

- Percentage of GHG Reduction Target: 1.5%
- GHG Reduction: 87 MT CO_2e
- UCD Bundle 1B

Description:

Upgrade appliances and office equipment with Energy Star-rated models or better. Energy Star is an international standard for energy efficient consumer products created by the U.S. Environmental Protection Agency (EPA). Energy Star appliances use roughly 20% less energy than traditional appliances and come with two price tags: (1) the cost to take the appliance home and (2) the costs to operate and maintain the product each month. Although some Energy Star appliances have a higher upfront cost than it's conventional counterpart, it would recover the additional cost through utility bill savings.

Goal:

- Businesses upgrade a total of 45 vending machines, 50 refrigerators, and 50 office equipment (e.g., computers, printers, photocopiers) with more energy efficient models (40 MT CO_2e)
- Residential homes replace a total of 50 refrigerators, 40 water heaters, 40 washers, 40 dryers and 45 computer equipment with a more energy-efficient model (47 MT CO_2e)

Commented [26]: Incentivization rather than concrete numbers?

Commented [27]: Potential/feasibility according to building dept?

Actions:

- Promote residential programs such as PG&E's Energy Savings Assistance Program to help low-income residents reduce their energy usage and costs by providing free or low-cost upgrades to more energy-efficient appliances. (Funding/Rebates and Residential)
- Conduct outreach programs to update and educate the community on current and new rebate and incentive programs. (Funding/Rebates and Education)

Commented [28]: Add broader language to describe /incentivize for all residents.

Educate businesses on equipment upgrade benefits, rebates, and financial assistance from programs such as Yolo Energy Watch and California Flex Your Power as part of the business license renewable process. (Education and Commercial)

Commented [29]: Potential speaking topic for Energy and Water Efficiency CAP Dev Board Meeting

Strategy BIE-3: Comprehensive Building Efficiency:

- Percentage of GHG Reduction Target: 12%
- GHG Reduction: 702 MT CO_2e
- UCD Bundle 1C

Description:

Buildings use nearly half of the energy produced in the United States. Because buildings consume such a large quantity of energy, it is vital to improve the energy-efficiency of all new and retrofitted buildings in order to reduce GHG emissions. Titles 24, Part 6 of the California Code of Regulations provide energy-efficiency standards that all new buildings must comply with, including CalGreen standards for energy efficiency and water conservation. Common building energy-efficiency strategies are:

- Properly insulating the walls, floors, and roof
- Reducing heat loss through windows and doors
- Upgrading or insulating hot water heaters
- Reducing infiltration through the building
- Sealing or replacing duct to increase efficiency

Goals:

- Weatherization upgrades for 50 low-income homes (50 MT CO_2e)
- Energy-efficiency retrofits for 150,000 square feet of residential buildings (110 MT CO_2e)
- Energy-efficiency retrofits and retro-commissioning for 340,000 square feet of commercial (260 MT CO_2e)
-

Commented [30]: Broader scope?

Commented [31]: No need to differentiate affordable vs energy efficient.

Actions:

- Promote sustainable construction and practices that correspond to CalGreen codes. (Construction)
- Promote programs such as the property-assessed clean energy (PACE) and the Home Energy Renovation Opportunity (HERO) program to help property owners afford residential energy efficiency retrofits (Funding/Rebate, Residential)
- Promote state, federal and utility incentive programs for home and business energy efficiency retrofits (Funding/Rebate)
-
- Promote free or low-cost weatherization programs such as the state Weatherization Assistance Program to residents (Residents, Funding/Rebate)
- Support and be wire with electric vehicle charging hardware (Legislation/Policy)

Commented [32]: Standardized

Commented [33]: See 2019 green codes. Support more electric vehicle charging hardware.

Drawing courtesy of Touch 'n Foam Insulating Sealants

Strategy BIE-4: Improved Building Temperature Controls

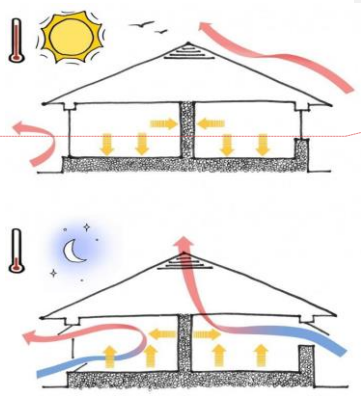
- Percentage of GHG Reduction Target: 2%
- GHG Reduction: 116 MT CO_2e
- UCD Bundle 1D

Description:

Improve climate control in residential and commercial buildings though measures such as:

- Repair or replace inefficient heating and cooling systems
- Using building orientation, location and construction to increase natural factors that maintain comfortable space conditions
- Installing cool roofs/reflective roofing

Goals:



- For residential buildings, upgrade 50 air conditioning units (2 MT CO_2e)
- For commercial buildings, upgrade 75,000 square feet of heating, ventilation, and air conditioning (HVAC) units, 50 air conditioning units, and 75,000 square feet of chiller units (11 MT CO_2e)
- Install 75,000 square feet of cool residential roofs (23 MT CO_2e)
- Install 75,000 square feet of cool commercial roofs (23 MT CO_2e)

Commented [34]: HVAC permitting numbers? Quantify from received permits.

Actions:

- Educate community and businesses on energy conservation (HVAC temperature controls, smart thermostats, etc.) and the benefits of energy-efficiency upgrades, rebates as assistance from Yolo Energy Watch, California Flex Your Power, and other programs. (Education, Commercial, Residential)
- Encourage and/or require innovative site design that increases natural air ventilation and cooling techniques, such as shade, cross ventilation, and green roofing, and include passive and active solar design for heating. (Construction)
- Promote residential programs such as PG&E's Energy Savings Assistance Program to help low-income residents reduce their energy usage and costs by providing free or low-cost upgrades to more energy-efficient appliances. (Funding/Rebates and Residential)
- Promote programs such as the property-assessed clean energy (PACE) program to help property owners afford climate control buildings and equipment upgrades (Funding/Rebate, Residential)
- Promote a Energy Star window air conditioner replacement rebate program that replaces window air conditioners with Energy Star rated models (Funding/Rebates)

Commented [35]: Expand to broader role in the BIE focus area.

Strategy BIE-5: Energy Conservation Education

- Percentage of GHG Reduction Target: 3%
- GHG Reduction: 147 MT CO_2e
- UCD Bundle 1C

Description:

Educational services and outreach to permanently increase energy awareness and reduce energy use though conservation techniques, such as:

- Turning off lights and unplugging appliances when not in use
- Turning off heating and air conditioning when buildings are unoccupied
- Modifying thermostat temperatures by a few degrees up in the summer and down in the winter
- Opening shades during the winter to increase solar heat gain and closing shades during the summer to decrease solar heat gain.~~winter to increase solar heat gain~~
- Opening windows for natural ventilation
- Maintaining clean air filters to ensure heating and cooling systems run efficiently

Goals:

- Attain permanent reductions in home energy conservation in the equivalent to 40 homes through energy-conservation campaigns (27 MT CO_2e)
- Attain permanent reductions in 20 businesses through energy-conservation campaigns (120 MT CO_2e

Actions:

- Promote energy conservation through campaigns targeted at businesses and residential homes. (Education, Residential, Commercial)
- Partner with groups such as Yolo Energy Watch and PG&E to conduct community outreach and educational campaigns to promote energy conservation (Education)

Objective 2: Obtain 4.0 MW of Electricity from Renewable Sources

Strategy BIE-6: Renewable Energy Generation and Procurement

- Percentage of GHG Reduction Target: 32%
- GHG Reduction: 1,850 MT CO_2e

Description:

Electricity production or procurement for the city through renewable sources. Since YOLO County has a high potential for both photovoltaic and solar hot water heating systems, the City of Winters' will focus primarily on those two renewable sources. Major renewable energy options are as followed:

- Residential solar PV installations – Rooftop PV systems and PV parking shade structures are available to the public as costs have gone down tremendously, technology has advanced and rebates and incentives have increased.
- Community solar – A PG&E program that allows community members to purchase shares of clean energy and in return get a credit on their utility bills. Community solar was implemented though SB 43 (2013) to grant community members who are unable to install renewable energy systems on their own property the option to purchase clean energy through major utility companies.
- Renewable Energy Certificates (RECs) – Environmental commodities that represent the added value, environmental benefits and cost of renewable energy above GHG emitting methods of producing electricity, such as burning coal. These commodities can be traded, sold and bought amongst entities.
- Community Choice Aggregation (CCA) – A system that allows California cities and counties to aggregate the buying power of individual consumers within a specific jurisdiction in order to secure alternative energy supply contracts on a community-wide basis. Although this system is free of charge to the consumer, they have the right to opt out if they wish to. With a small fee, an option for a higher percentage or renewable power or 100% renewable will be available as well.

Goals:

- Increase amount of residential homes with PV systems with an average system size of 2.7 kW by 1050 (1,418 MT CO_2e)
- Increase amount of homes with solar hot water systems by 600 (432 MT CO_2e)

Actions:

- Support incentives to reduce the cost of solar hot water systems (Legislation/Policy and Funding/Rebate)
- Promote programs such as the property-assessed clean energy (PACE) program to help property owners afford renewable energy systems (Funding/Rebate, Residential)
- Promote programs such as Yolo Energy Watch and Energy Upgrade California for improving building efficiency, including the installment of renewable systems (Funding/Rebate)
- Support policy mandating that all new home development be equipped with EV charging hardware (Construction, Legislation/Policy)
- Increase dual-use on existing structures for solar systems, such as parking lots and building roofs (Legislation/Policy)

Commented [36]: 10/15/19 City Council agreed to join Valley Clean Energy, CCA that services Davis and Woodland in Yolo County already.

- Promote increases in community solar to allow consumers to purchase cleaner energy (Legislation/Policy)
- Support legislation and incentives for distributed renewable energy generation to increase local access to renewable energy (Legislation/Policy)
- Provide information to the community on incentives and benefits of clean energy as well as rebates, such as the Hero Program (Education)
- Promote on-farm renewable energy facilities, such as biomass, and provide information for funding such as grants and rebates (Legislation/Policy, Education)

Urban Forest

Urban trees can help reduce GHG emissions when selected and placed properly, by providing the following:

- Building shade: Trees can provide shade to buildings during the summer months to help reduce solar heat gain through the building envelope, reducing the need to cool the building.
- Insulation: Trees can provide an extra layer of insulation to buildings, helping to reduce infiltration rates by blocking outside wind.
- Pavement shade: The "heat island" effect is when solar radiation is absorbed by asphalt, buildings, etc. Trees can help shade pavements, reducing the "heat island" effect, prolonging the pavements lifespan, and promote more comfortable walking and biking conditions.
- Transpiration: Tree transpiration is when plants convert moisture into water vapor, which in turn cools the air.
- Carbon sequestration: Through carbon sequestration, trees can collect and store CO_2 from the atmosphere, which in turn reduces the GHG effect caused by anthropogenic CO_2 emissions.

Strategy Summary

Objective 1: *Increase Tree Canopy*	
UF/OS-1	Urban Forest Management Plan
UF/OS-2	Increased Tree Planting
UF/OS-3	Maintenance of Existing Trees
UF/OS-4	Public Education
Objective 2: *Maintain and Enhance Open Space Environment Values*	
UF/OS-5	Open Space Preservation
Portion of Total GHG Reduction Target:	4%

The urban forest and open space strategies, if properly and adequately implemented, could reduce GHG emissions by an estimated 236 $MTCO_2e$ or 4% of Winters' GHG- reduction target.

Objective 1: Increase Tree Canopy

Strategy UF/OS-1: Urban Forest Management Plan

- Important to overall CAP success, however is not quantifiable
- UCD Bundle 4

Description:

Adoption of a policy that focuses on planting native trees and maintaining the City's existing trees through the development of an urban forest management plan (UFMP). An UFMP is based on recent tree inventory data and analysis and is used to ensure that a community will enjoy the benefits of trees. Urban forest management plan benefits include:

- Increased public safety
- Prevent disease and pest infestations
- Increased maintenance efficiency
- Improve energy savings
- Justify planning budgets
- Enhance recreational opportunities
- Improve aesthetic appeal of streetscapes

Implementation of this plan is a critical aspect of reaching Winters' GHG reduction goal. However, to avoid double counting these reductions, they are only quantified in Strategy UF/OS-2.

Actions:

- *In the UFMP, include planting mediums, planting techniques, and soil amendments that have* multiple benefits; for example, biochar as a soil amendment with potential carbon sequestration capacity. (Legislation/Policy)
- Develop a funding strategy for the UFMP and include funding opportunities (Legislation/Policy, Rebate/Funding)

Winters' Urban Forest Management Plan

Strategy UF/OS -2: Increased Tree Planting

- Percentage of GHG Reduction Target: 4%
- GHG Reduction: 236 MT CO_2e
  - UCD Bundle 4

Description:

Implementations geared towards increasing tree canopy within the city in order to increase building shade, building insulation, pavement shade, carbon sequestration, and reduce the heat-island effect.

Goals:

Commented [37]: Determine actual reduction metrics

Commented [38]: Does not exist, partnership role with PCC?

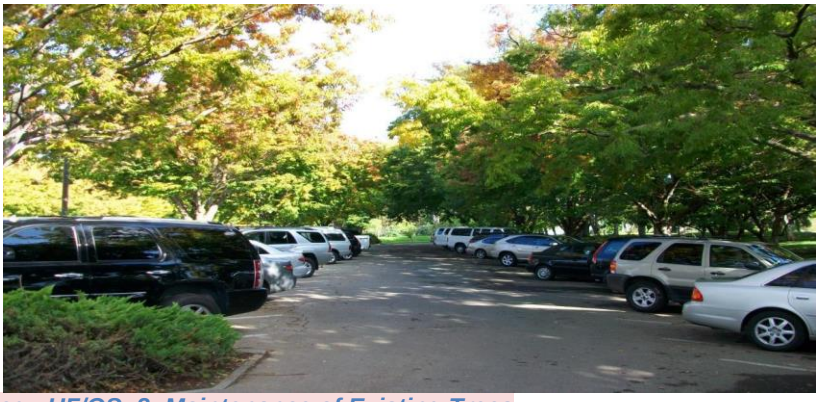
Commented [39]: Implementation task for commission: Work with city staff to determine current tree canopy coverage in Winters, establish coverage goals by certain years, and identify circulation corridors lacking in canopy coverage.

Commented [40R39]: Easily quantified using GIS software already at the City's disposal. See case studies here: https://www.urban-forestry.com/assets/documents/Head_EstimatingTreeCanopyCover.pdf

- Plant 825 trees along street, parking lots, and open space areas within the city (208 MT CO_2e)
- Plant 400 trees that are intended to increase building shade (28 MT CO_2e)

Actions:

- Require all new construction homes to have at least two shade trees on the west, east, or south side of the building, strategically locating trees so that they don't interfere with solar PV systems (Construction)
- Education homeowners on tree planting, maintenance, and tree selection (Education)
- Promote the planting of native trees with the highest potential for carbon sequestration (Legislation)
- Adjust any future City design in order to maximize the potential for tree growth/planting; including parking strips, medians, sidewalks, etc. (Legislation/Policy)
- For redeveloped or newly developed areas, mandate an increase in the requirement for trees planted in order to increase pavement shade (Legislation/Policy)
- Use census and neighborhood level data to determine which communities are most vulnerable to heat, then focus urban greening projects in these communities (Policy/Equity)



Strategy UF/OS -3: Maintenance of Existing Trees

- Important to overall CAP success, however is not quantifiable
- UCD Bundle 4

Description:

Actions that will best help maintain and care for existing trees. Keeping existing trees in good health with prolong the benefits of the existing mature trees, expand canopy growth, promote longer growth, and maintain the health of future planting.

Adequate staking, irrigation, training and pest management of trees in the first year of their establishment is required for maximizing tree growth. After the first year maintenance is required

Commented [41]: (See above) These goals could be revisited with increasing the tree canopy by a designated year. Also determine Public Works' capacity to care for new trees during their first few years and on high heat days.

Commented [42]: Educate

Commented [43]: Crossover with Mobility focus area

Commented [44]: From YRC toolbox

Commented [45]: make table with action items

Commented [46]: Contribution to GHG reduction target_

throughout its lifetime, including pruning, removal of disease or insect infection, and branch support or trimming. Caution must also be taken to prevent the damage of utility lines and street signs, as well as to prevent any safety hazards to the community.

Actions:

- Prioritize the maintenance and care of older trees that already have high carbon sequestration rates through community organizations (Legislation/Policy)

Strategy UF/OS -4: Public Education

- Important to overall CAP success, however is not quantifiable
- UCD Bundle 4

Description:

Educating community members on proper tree maintenance in order to increase the care for Winters' trees and the overall appreciation of them. This awareness is necessary to successfully help expand and sustain Winters' tree canopy. Focus areas include:

- Environmental and economic benefits
- Tree species identification
- Planting guide
- Care and maintenance
- Proper species selection
- Diagnosis and treatment of pest and disease
- Historical significance

Goals:

- Increase community participation in public tree events
- Increase residential and commercial property owners and renters efforts to maintain and plant trees
- Create support for the UFMP
- Increase the overall tree canopy of the City

Actions:

- Support community outreach programs, events, and efforts through school and community service outreach programs to educate the community on the benefits and importance of tree maintenance and planting (Education)
- Use the UFMP to create a citywide tree planting and care program/campaign (Education)

Objective 2: Maintain and Enhance Open Space Environmental Values

Strategy UF/OS -5: Open Space Preservation

- Important to overall CAP success, however is not quantifiable
- UCD Bundle 4

Description:

Maintain and enhance the community's appreciation for open space areas in order to decrease unnecessary developmental extensions and preserve natural/agricultural lands.

Actions:

- Promote public education and appreciate of natural habitats and open space through community outreach programs, materials, and campaigning (Education)
- Maintain or reduce Winters' Urban Limit Line in order to preserve open space land and agricultural land (Legislation/Policy)
- Preserve open space by installing solar arrays on rooftops, developed land, and where solar would be with the areas existing and intended use (Legislation)

Commented [47]: From YRC toolbox